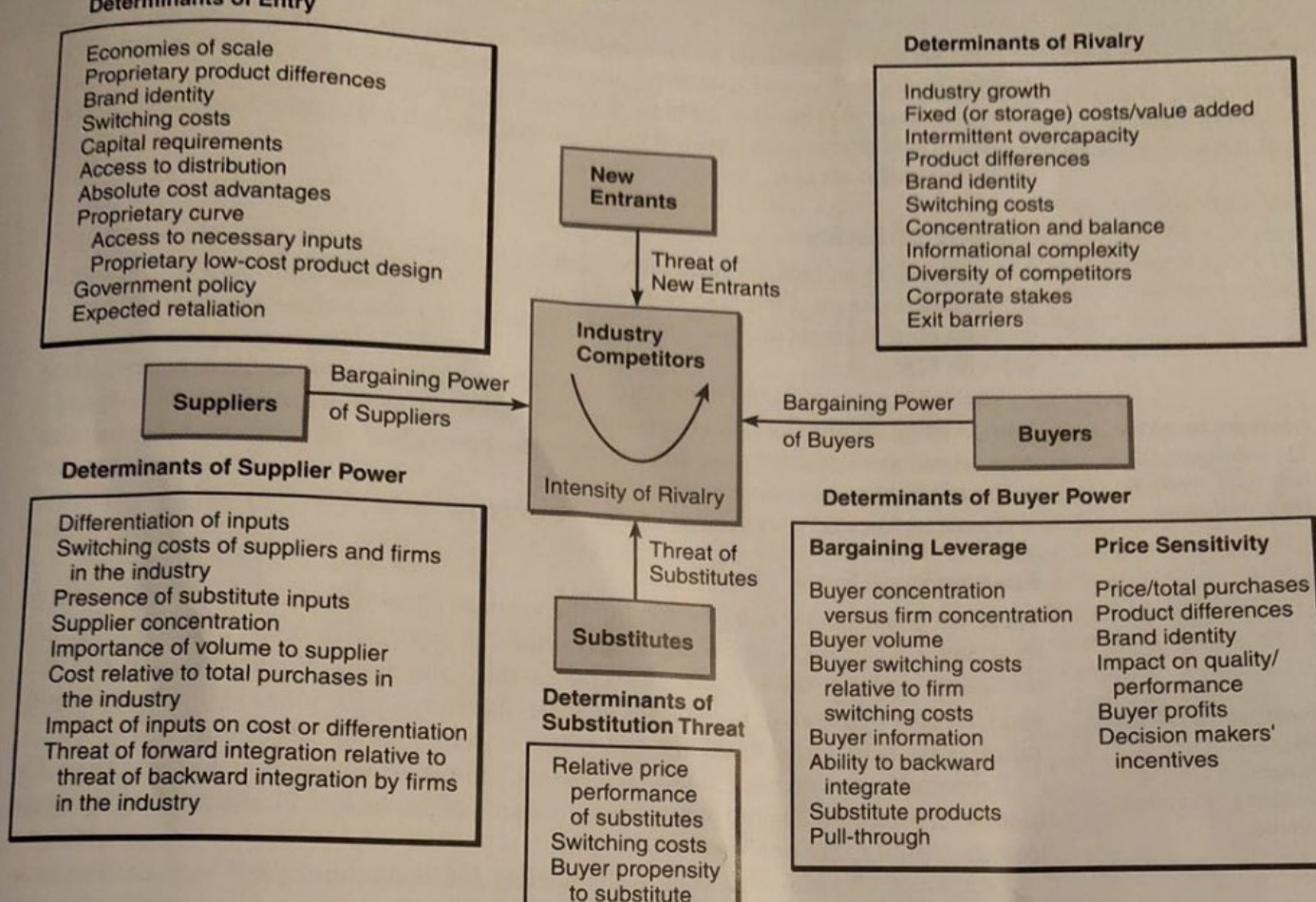
EXHIBIT 4.9 Forces Driving Industry Competition



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CONTENDING FORCES

The strongest competitive force or forces determine the profitability of an industry and so are of greatest importance in strategy formulation. For example, even a company with a strong position in an industry unthreatened by potential entrants will earn low returns if it faces a superior or a lower-cost substitute product—as the leading manufacturers of vacuum tubes and coffee percolators have learned to their sorrow. In such a situation, coping with the substitute product becomes the number one strategic priority.

Different forces take on prominence, of course, in shaping competition in each industry. In the ocean-going tanker industry, the key force is probably the buyers (the major oil companies), while in tires it is powerful OEM buyers coupled with tough competitors. In the steel industry the key forces are foreign competitors and substitute materials.

Every industry has an underlying structure, or a set of fundamental economic and technical characteristics, that gives rise to these competitive forces. The strategist, wanting to

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position his or her company to cope best with its industry environment or to influence that environment in the company's favor, must learn what makes the environment tick.

This view of competition pertains equally to industries dealing in services and to those selling products. To avoid monotony, we refer to both products and services as *products.* The same general principles apply to all types of business.

A few characteristics are critical to the strength of each competitive force. They will be discussed in this section.

Threat of Entry

New entrants to an industry bring new capacity, the desire to gain market share, and often substantial resources. Similarly, companies diversifying through acquisition into the industry from other markets often leverage their resources to cause a shake-up, as Philip Morris did with Miller beer.

barriers to entry
The conditions that a firm must satisfy to enter an industry.

The seriousness of the threat of entry depends on the barriers present and on the reaction from existing competitors that the entrant can expect. If **barriers to entry** are high and a newcomer can expect sharp retaliation from the entrenched competitors, he or she obviously will not pose a serious threat of entering.

There are six major sources of barriers to entry.

Economies of Scale

These economies deter entry by forcing the aspirant either to come in on a large scale or to accept a cost disadvantage. Scale economies in production, research, marketing, and service are probably the key barriers to entry in the mainframe computer industry, as Xerox and GE sadly discovered. **Economies of scale** also can act as hurdles in distribution, utilization of the sales force, financing, and nearly any other part of a business.

economies of scale
The savings that companies achieve because of increased volume.

Economies of scale refer to the savings that companies within an industry achieve due to increased volume. Simply put, when the volume of production increases, the long-range average cost of a unit produced will decline.

Economies of scale result from technological and nontechnological sources. The technological sources of these economies are higher levels of mechanization or automation and a greater modernization of plant and facilities The nontechnological sources include better managerial coordination of production functions and processes, long-term contractual agreements with suppliers, and enhanced employee performance arising from specialization.

Economies of scale are an important determinant of the intensity of competition in an industry. Firms that enjoy such economies can charge lower prices than their competitors. They also can create barriers to entry by reducing their prices temporarily, or permanently, to deter new firms from entering the industry.

Product Differentiation

product differentiation
The extent to which customers perceive differences among products and services.

Product differentiation, or brand identification, creates a barrier by forcing entrants to spend heavily to overcome customer loyalty. Advertising, customer service, being first in the industry, and product differences are among the factors fostering brand identification. It is perhaps the most important entry barrier in soft drinks, over-the-counter drugs, cosmetics, investment banking, and public accounting. To create high fences around their business, brewers couple brand identification with economies of scale in production, distribution, and marketing.

Capital Requirements

The need to invest large financial resources to compete creates a barrier to entry, particularly if the capital is required for unrecoverable expenditures in upfront advertising or R&D. Capital is necessary not only for fixed facilities but also for customer credit, inventories,

EXHIBIT 4.18
Strategic Forecasting Issues

Key Issues in the Remote Environment Economy
What are the probable future directions of the economies in the firm's regional, national, and international market? What changes in economic growth, inflation, interest rates, capital availability, credit availability, and consumer purchasing power can be expected? What income differences can be expected between the wealthy upper middle class, the working class, and the underclass in various regions? What shifts in relative demand for different categories of goods and services can be expected?
Society and demographics
What effects will changes in social values and attitudes regarding childbearing, marriage, lifestyle, work, ethics, sex roles, racial equality, education, retirement, pollution, and energy have on the firm's development? What effects will population changes have on major social and political expectations—at home and abroad? What constraints or opportunities will develop? What pressure groups will increase in power?
Ecology
What natural or pollution-caused disasters threaten the firm's employees, customers, or facilities? How rigorously will existing environment legislature be enforced? What new federal, state, and local laws will affect the firm, and in what ways?
Politics
What changes in government policy can be expected with regard to industry cooperation, antitrust activities, foreign trade, taxation, depreciation, environmental protection, deregulation, defense, foreign trade barriers, and other important parameters? What success will a new administration have in achieving its stated goals? What effect will that success have on the firm? Will specific international climates be hostile or favorable? Is there a tendency toward instability, corruption, or violence? What is the level of political risk in each foreign market? What other political or legal constraints or supports can be expected in international business (e.g., trade barriers, equity requirements, nationalism, patent protection)?
Technology
What is the current state of the art? How will it change? What pertinent new products or services are likely to become technically feasible in the foreseeable future? What future impact can be expected from technological breakthroughs in related product areas? How will those breakthroughs interface with the other remote considerations, such as economic issues, social values, public safety, regulations, and court interpretations?
Key Issues in the Industry Environment
New entrants
Will new technologies or market demands enable competitors to minimize the impact of traditional economies of scale in the industry? Will consumers accept our claims of product or service differentiation? Will potential new entrants be able to match the capital requirements that currently exist? How permanent are the cost disadvantages (independent of size) in our industry? Will conditions change so that all competitors have equal access to marketing channels? Is government policy toward competition in our industry likely to change?
Bargaining power of suppliers
How stable are the size and composition of our supplier group? Are any suppliers likely to attempt forward integration into our business level? How dependent will our suppliers be in the future? Are substitute suppliers likely to become available? Could we become our own supplier?

(continued)

EXHIBIT 4.18
(continued)

Substitute products or services

Are new substitutes likely? Will they be price competitive? Could we fight off substitutes by price competition? By advertising to sharpen product differentiation? What actions could we take to reduce the potential for having alternative products seen as legitimate substitutes?

Bargaining power of buyers

Can we break free of overcommitment to a few large buyers? How would our buyers react to attempts by us to differentiate our products? What possibilities exist that our buyers might vertically integrate backward? Should we consider forward integration? How can we make the value of our components greater in the products of our buyers?

Rivalry among existing firms

Are major competitors likely to undo the established balance of power in our industry? Is growth in our industry slowing such that competition will become fiercer? What excess capacity exists in our industry? How capable are our major competitors of withstanding intensified price competition? How unique are the objectives and strategies of our major competitors?

Key Issues in the Operating Environment

Competitive position

What strategic moves are expected by existing rivals—inside and outside the United States? What competitive advantage is necessary in selected foreign markets? What will be our competitors' priorities and ability to change? Is the behavior of our competitors predictable?

Customer profiles and market changes

What will our customer regard as needed value? Is marketing research done, or do managers talk to each other to discover what the customer wants? Which customer needs are not being met by existing products? Why? Are R&D activities under way to develop means for fulfilling these needs? What is the status of these activities? What marketing and distribution channels should we use? What do demographic and population changes portend for the size and sales potential of our market? What new market segments or products might develop as a result of these changes? What will be the buying power of our customer groups?

Supplier relationships

What is the likelihood of major cost increases because of dwindling supplies of a needed natural resource? Will sources of supply, especially of energy, be reliable? Are there reasons to expect major changes in the cost or availability of inputs as a result of money, people, or subassembly problems? Which suppliers can be expected to respond to emergency requests?

Creditors

What lines of credit are available to help finance our growth? What changes may occur in our creditworthiness? Are creditors likely to feel comfortable with our strategic plan and performance? What is the stock market likely to feel about our firm? What flexibility would our creditors show toward us during a downturn? Do we have sufficient cash reserves to protect our creditors and our credit rating?

Labor market

Are potential employees with desired skills and abilities available in the geographic areas in which our facilities are located? Are colleges and vocational/technical schools that can aid in meeting our training needs located near our plant or store sites? Are labor relations in our industry conducive to meeting our expanding needs for employees? Are workers whose skills we need shifting toward or away from the geographic location of our facilities?

Summary

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A firm's external environment consists of three interrelated sets of factors that play a principal role in determining the opportunities, threats, and constraints that the firm faces. The remote environment comprises factors originating beyond, and usually irrespective of, any single firm's operating situation—economic, social, political, technological, and ecological factors. Factors that more directly influence a firm's prospects originate in the environment of its industry, including entry barriers, competitor rivalry, the availability of substitutes, and the bargaining power of buyers and suppliers. The operating environment comprises factors that influence a firm's immediate competitive situation—competitive position, customer profiles, suppliers, creditors, and the labor market. These three sets of factors provide many of the challenges that a particular firm faces in its attempts to attract or acquire needed resources and to profitably market its goods and services. Environmental assessment is more complicated for multinational corporations (MNCs) than for domestic firms because multinationals must evaluate several environments simultaneously.

Thus, the design of business strategies is based on the conviction that a firm able to anticipate future business conditions will improve its performance and profitability. Despite the uncertainty and dynamic nature of the business environment, an assessment process that narrows, even if it does not precisely define, future expectations is of substantial value to strategic managers.

Key Terms

barriers to entry, *p. 102*
eco-efficiency, *p. 99*
ecology, *p. 96*
economies of scale, *p. 102*
external environment, *p. 88*
industry, *p. 109*
industry environment, *p. 100*
operating environment, *p. 116*
pollution, *p. 96*
product differentiation, *p. 102*
remote environment, *p. 88*
technological forecasting, *p. 95*

Questions for Discussion

1. Briefly describe two important recent changes in the remote environment of U.S. business in each of the following areas:
   a. Economic.
   b. Social.
   c. Political.
   d. Technological.
   e. Ecological.
2. Describe two major environmental changes that you expect to have a major impact on the wholesale food industry in the next 10 years.
3. Develop a competitor profile for your college and for the college geographically closest to yours. Next, prepare a brief strategic plan to improve the competitive position of the weaker of the two colleges.
4. Assume the invention of a competitively priced synthetic fuel that could supply 25 percent of U.S. energy needs within 20 years. In what major ways might this change the external environment of U.S. business?
5. With your instructor's help, identify a local firm that has enjoyed great growth in recent years. To what degree and in what ways do you think this firm's success resulted from taking advantage of favorable conditions in its remote, industry, and operating environments?
6. Choose a specific industry and, relying solely on your impressions, evaluate the impact of the five forces that drive competition in that industry.
7. Choose an industry in which you would like to compete. Use the five-forces method of analysis to explain why you find that industry attractive.
8. Many firms neglect industry analysis. When does this hurt them? When does it not?

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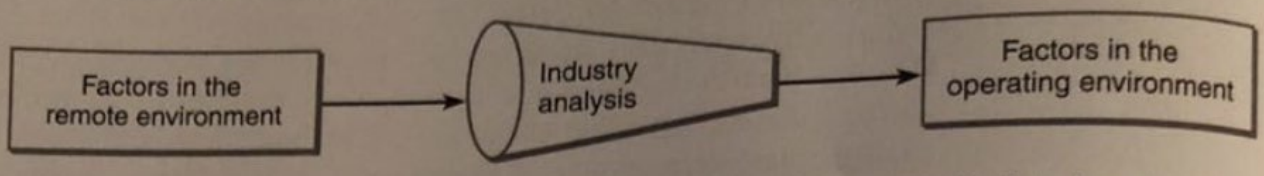
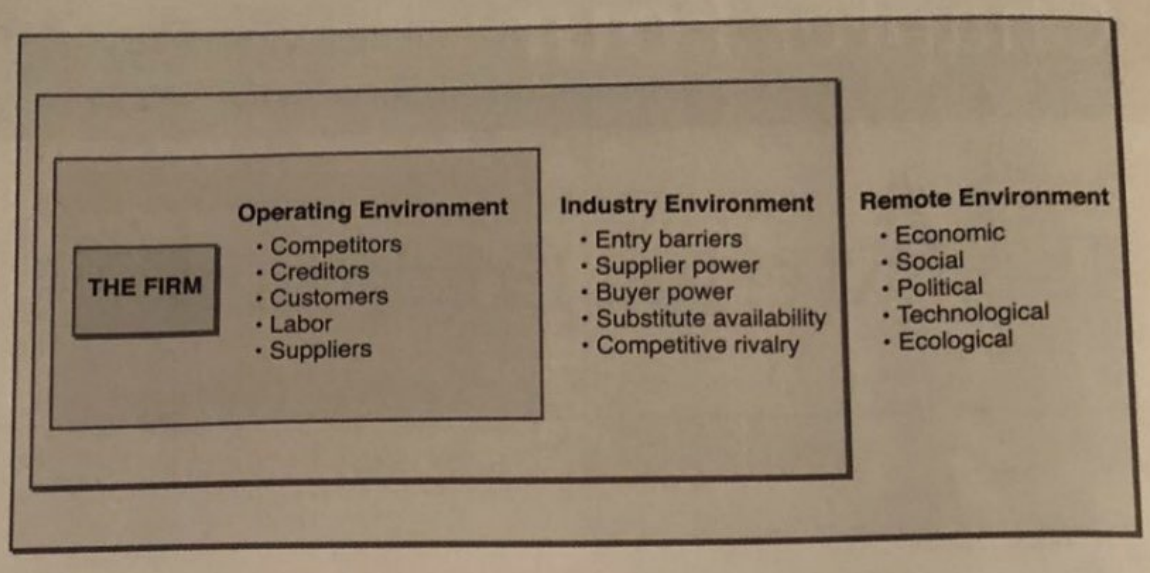
9. The model below depicts industry analysis as a funnel that focuses on remote-factor analysis to better understand the impact of factors in the operating environment. Do you find this model satisfactory? If not, how would you improve it?



10. Who in a firm should be responsible for industry analysis? Assume that the firm does not have a strategic planning department.

EXHIBIT 4.1
The Firm's External Environment



THE FIRM'S EXTERNAL ENVIRONMENT

external environment
The factors beyond the control of the firm that influence its choice of direction and action, organizational structure, and internal processes.

A host of external factors influence a firm's choice of direction and action and, ultimately, its organizational structure and internal processes. These factors, which constitute the **external environment,** can be divided into three interrelated subcategories: factors in the remote environment, factors in the industry environment, and factors in the operating environment. This chapter describes the complex necessities involved in formulating strategies that optimize a firm's market opportunities. Exhibit 4.1 suggests the interrelationship between the firm and its remote, its industry, and its operating environments. In combination, these factors form the basis of the opportunities and threats that a firm faces in its competitive environment.

REMOTE ENVIRONMENT

remote environment
Economic, social, political, technological, and ecological factors that originate beyond, and usually irrespective of, any single firm's operating situation.

The **remote environment** comprises factors that originate beyond, and usually irrespective of, any single firm's operating situation: (1) economic, (2) social, (3) political, (4) technological, and (5) ecological factors. That environment presents firms with opportunities, threats, and constraints, but rarely does a single firm exert any meaningful reciprocal influence. For example, when the economy slows and construction starts to decrease, an individual contractor is likely to suffer a decline in business, but that contractor's efforts in stimulating local construction activities would be unable to reverse the overall decrease in construction starts. The trade agreements that resulted from improved relations between the United States and China and the United States and Russia are examples of political factors that impact individual firms. The agreements provided individual U.S. manufacturers with opportunities to broaden their international operations.

Economic Factors

Economic factors concern the nature and direction of the economy in which a firm operates. Because consumption patterns are affected by the relative affluence of various market

Chapter 4 Appendix

Sources for Environmental Forecasting

Remote and Industry Environments

A. Economic considerations:
1. *Predicasts* (most complete and up-to-date review of forecasts)
2. National Bureau of Economic Research
3. *Handbook of Basic Economic Statistics*
4. *Statistical Abstract of the United States* (also includes industrial, social, and political statistics)
5. Publications by Department of Commerce agencies:
   a. Office of Business Economics (e.g., *Survey of Business*)
   b. Bureau of Economic Analysis (e.g., *Business Conditions Digest*)
   c. Bureau of the Census (e.g., *Survey of Manufacturers* and various reports on population, housing, and industries)
   d. Business and Defense Services Administration (e.g., *United States Industrial Outlook*)
6. Securities and Exchange Commission (various quarterly reports on plant and equipment, financial reports, working capital of corporations)
7. The Conference Board
8. *Survey of Buying Power*
9. *Marketing Economic Guide*
10. *Industrial Arts Index*
11. U.S. and national chambers of commerce
12. American Manufacturers Association
13. *Federal Reserve Bulletin*
14. *Economic Indicators*, annual report
15. *Kiplinger Newsletter*
16. International economic sources:
   a. Worldcasts
   b. Master key index for business international publications
   c. Department of Commerce
      (1) Overseas business reports
      (2) Industry and Trade Administration
      (3) Bureau of the Census—*Guide to Foreign Trade Statistics*
17. *Business Periodicals Index*

B. Social considerations:
1. Public opinion polls
2. Surveys such as *Social Indicators and Social Reporting*, the annals of the American Academy of Political and Social Sciences
3. Current controls: Social and behavioral sciences
4. Abstract services and indexes for articles in sociological, psychological, and political journals
5. Indexes for *The Wall Street Journal, New York Times*, and other newspapers
6. Bureau of the Census reports on population, housing, manufacturers, selected services, construction, retail trade, wholesale trade, and enterprise statistics
7. Various reports from such groups as the Brookings Institution and the Ford Foundation
8. World Bank Atlas (population growth and GNP data)
9. World Bank–World Development Report

C. Political considerations:
1. *Public Affairs Information Services Bulletin*
2. CIS Index (Congressional Information Index)
3. Business periodicals
4. Funk & Scott (regulations by product breakdown)
5. Weekly compilation of presidential documents
6. *Monthly Catalog of Government Publications*
7. *Federal Register* (daily announcements of pending regulations)
8. *Code of Federal Regulations* (final listing of regulations)
9. Business International Master Key Index (regulations, tariffs)
10. Various state publications
11. Various information services (Bureau of National Affairs, Commerce Clearing House, Dow Jones)

D. Technological considerations:
1. *Applied Science and Technology Index*
2. *Statistical Abstract of the United States*
3. Scientific and Technical Information Service
4. University reports, congressional reports
5. Department of Defense and military purchasing publishers
6. Trade journals and industrial reports
7. Industry contacts, professional meetings
8. Computer-assisted information searches
9. National Science Foundation annual report
10. *Research and Development Directory* patent records

E. Industry considerations:
1. *Concentration Ratios in Manufacturing* (Bureau of the Census)
2. *Input-Output Survey* (productivity ratios)
3. *Monthly Labor Review* (productivity ratios)
4. *Quarterly Failure Report* (Dun & Bradstreet)
5. *Federal Reserve Bulletin* (capacity utilization)
6. *Report on Industrial Concentration and Product Diversification in the 1,000 Largest Manufacturing Companies* (Federal Trade Commission)
7. Industry trade publications

8. Bureau of Economic Analysis, Department of Commerce (specialization ratios)

Industry and Operating Environments

A. Competition and supplier considerations:
   1. Target Group Index
   2. U.S. Industrial Outlook
   3. Robert Morris annual statement studies
   4. Troy, Leo *Almanac of Business & Industrial Financial Ratios*
   5. *Census of Enterprise Statistics*
   6. Securities and Exchange Commission (10-K reports)
   7. Annual reports of specific companies
   8. *Fortune 500 Directory, The Wall Street Journal, Barron's, Forbes, Dun's Review*
   9. Investment services and directories: Moody's, Dun & Bradstreet, Standard & Poor's, Starch Marketing, Funk & Scott Index
   10. Trade association surveys
   11. Industry surveys
   12. Market research surveys
   13. *Country Business Patterns*
   14. *Country and City Data Book*
   15. Industry contacts, professional meetings, salespeople
   16. *NFIB Quarterly Economic Report for Small Business*

B. Customer profile:
   1. *Statistical Abstract of the United States*, first source of statistics
   2. *Statistical Sources* by Paul Wasserman (a subject guide to data—both domestic and international)
   3. *American Statistics Index* (Congressional Information Service Guide to statistical publications of U.S. government—monthly)
   4. Office of the Department of Commerce:
      a. Bureau of the Census reports on population, housing, and industries
      b. *U.S. Census of Manufacturers* (statistics by industry, area, and products)
      c. *Survey of Current Business* (analysis of business trends, especially February and July issues)
   5. Market research studies (*A Basic Bibliography on Market Review*, compiled by Robert Ferber et al., American Marketing Association)
   6. *Current Sources of Marketing Information: A Bibliography of Primary Marketing Data* by Gunther & Goldstein, AMA
   7. *Guide to Consumer Markets*, The Conference Board (provides statistical information with demographic, social, and economic data—annual)
   8. *Survey of Buying Power*
   9. *Predicasts* (abstracts of publishing forecasts of all industries, detailed products, and end-use data)
   10. *Predicasts Basebook* (historical data from 1960 to present, covering subjects ranging from population and GNP to specific products and services; series are coded by Standard Industrial Classifications)
   11. *Market Guide* (individual market surveys of over 1,500 U.S. and Canadian cities; includes population, location, trade areas, banks, principal industries, colleges and universities, department and chain stores, newspapers, retail outlets, and sales)
   12. *Country and City Data Book* (includes bank deposits, birth and death rates, business firms, education, employment, income of families, manufacturers, population, savings, and wholesale and retail trade)
   13. *Yearbook of International Trade Statistics* (UN)
   14. *Yearbook of National Accounts Statistics* (UN)
   15. *Statistical Yearbook* (UN—covers population, national income, agricultural and industrial production, energy, external trade, and transport)
   16. *Statistics of (Continents): Sources for Market Research* (includes separate books on Africa, America, Europe)

C. Key natural resources:
   1. *Minerals Yearbook, Geological Survey* (Bureau of Mines, Department of the Interior)
   2. *Agricultural Abstract* (Department of Agriculture)
   3. Statistics of electric utilities and gas pipeline companies (Federal Power Commission)
   4. Publications of various institutions: American Petroleum Institute, Atomic Energy Commission, Coal Mining Institute of America, American Steel Institute, and Brookings Institution

EXHIBIT 6.6 Possible Factors for Assessing Sources of Differentiation in Primary and Support Activities

Support Activities

■Capability to identify new-product market opportunities and potential environmental threats ■Quality of the strategic planning system to achieve corporate objectives ■Coordination and integration of all value chain activities among organizational subunits ■Ability to obtain relatively low-cost funds for capital expenditures and working capital ■Level of information systems support in making strategic and routine decisions ■Overall social media strategy and coordination across all value chain activities ■Relationships with public policymakers and interest groups ■Public image and corporate citizenship — **General Administration**				
■Effectiveness of procedures for recruiting, training, and promoting all levels of employees ■Appropriateness of reward systems for motivating and challenging employees ■A work environment that minimizes absenteeism and keeps turnover at desirable levels ■Relations with trade unions ■Active participation by managers and technical personnel in professional organizations ■Levels of employee motivation and job satisfaction — **Human Resource Management**				
■Success of research and development activities in leading to product and process innovations ■Quality of working relationships between R&D personnel and other departments ■Timeliness of technology development activities in meeting critical deadlines ■Quality of laboratories; Qualification of lab technicians and scientists ■Use of social media as an input to technology development activities ■Ability of work environment to encourage creativity and innovation — **Technology Development**				
■Development of alternate sources for inputs to minimize dependence on a single supplier ■Procurement of raw materials (1) on a timely basis, (2) at lowest possible cost, (3) at acceptable levels of quality ■Procedures for procurement of plant, machinery, and buildings ■Development of criteria for lease-versus-purchase decisions ■Good, long-term relationships with reliable suppliers — **Procurement**				
■Soundness of material and inventory control systems ■Efficiency of raw material warehousing activities	■Productivity of equipment compared to that of key competitors ■Appropriate automation of production processes ■Effectiveness of production control systems to improve quality and reduce costs ■Efficiency of plant layout and work-flow design	■Timeliness and efficiency of delivery of finished goods and services ■Efficiency of finished goods warehousing activities	■Effectiveness of market research to identify customer segments and needs ■Innovation in sales promotion and advertising ■Evaluation of alternate distribution channels ■Motivation and competence of sales force ■Development of an image of quality and a favorable reputation ■Extent of brand loyalty among customers ■Vibrant digital-social media platform and connections ■Online sales and support ■Extent of market dominance within the market segment or overall market	■Means to solicit customer input for product improvements ■Promptness of attention to customer complaints ■Appropriateness of warranty and guarantee policies ■Quality of customer education and training ■Ability to provide replacement parts and repair services ■Ease of online connection with customers
Inbound Logistics	**Operations**	**Outbound Logistics**	**Marketing and Sales**	**Service**

Profit Margin

Primary Activities

Source: Based on Michael Porter, *On Competition*, 1998, Harvard Business School Press.

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computerization, cash, etc.) and intangible assets (reputation, brand name awareness, quality-control culture, global business system, etc.). They also felt that Toyota led Ford in several capabilities that made use of those assets effectively—managing distribution globally, influencing labor and supplier relations, managing franchise relations, marketing savvy, and speed of decision making to take quick advantage of changing global conditions are just a few that are frequently mentioned. The combination of capabilities and assets, most analysts concluded, created several competencies that gave Toyota key competitive advantages over Ford that were durable and not easily imitated.

In the last decade, Ford has begun to reverse that view. Capitalizing on an accelerator-sticking series of incidents that uncovered surprising quality-control problems attributed to Toyota's rapid global expansion, Ford found a "glitch" in the Toyota resource base that was a major deficiency. Then Toyota compounded the impact on its quality reputation with its initially poor handling of the PR aspects and response worldwide. That massive series of recalls stymied Toyota for some time, which was happening as the worldwide recession of recent years unfolded, again weakening Toyota's financial strength and Ford's. Fortunately for Ford, that period of time called for a massive turnaround strategy, which saw Ford eliminate outdated production facilities, reduce a bloated organization, sell off or shut down unproductive product lines, and concentrate on identifying several new product offerings that were carefully and methodically conceived, designed, and built to meet valid market concerns about quality, innovative electronics, appearance, and fuel efficiency. The result saw Ford come out of the recession a dramatically changed company, with new tangible assets (manufacturing facilities, improved R&D coordination, financial strength, smaller and stronger dealer networks) and some key, improved intangible assets (reputation, market-driven focus, brand leadership in midrange sedans). Ford executives managed these new assets with considerable skill, taking quick advantage of globally changing conditions to leverage them into a dramatic improvement in Ford's position relative to Toyota by 2012.

resource-based view
A method of analyzing and identifying a firm's strategic advantages based on examining its distinct combination of assets, skills, capabilities, and intangibles as an organization.

The Toyota–Ford situation provides a useful illustration for understanding several concepts central to the **resource-based view** (RBV) of the firm. The RBV is a method of analyzing and identifying a firm's strategic advantages based on examining its distinct combination of assets, skills, capabilities, and intangibles as an organization. The RBV's underlying premise is that firms differ in fundamental ways because each firm possesses a unique "bundle" of resources—tangible and intangible assets and organizational capabilities to make use of those assets. Each firm develops competencies from these resources, and, when developed especially well, these become the source of the firm's competitive advantages. Toyota's decision to enter global markets locally and regularly invest in or build newer factory locations in those global markets gave Toyota a competitive advantage, which it leveraged against Ford and others for over 25 years into the last decade to rise to become the top global car company. Now, after an extended passage of time accompanied by a deterioration in some of Toyota's historical distinctive competencies, Ford was able to build selective resources and capabilities, while it literally sought to survive, in a manner that has made those into several clear core distinctive competencies that may well be sustainable competitive advantages versus Toyota for many years to come.

core competence
A capability or skill that a firm emphasizes and excels in doing while in pursuit of its overall mission.

Core Competencies

Executives charting the strategy of their business have more recently concentrated their thinking on the notion of a "core competence." A **core competence** is a capability or skill that a firm emphasizes and excels in doing while in pursuit of its overall mission. Core

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competencies that differ from those found in competing firms would be considered *distinctive competencies*. Apple's competencies in pulling together available technologies and others' software and combining this with their own product design skills and new-product introduction prowess result in an innovation competence that is different and distinct from any firm against which Apple competes. Toyota's pervasive organizationwide pursuit of quality; Wendy's systemwide emphasis on and ability to provide fresh meat daily; and the University of Phoenix's ability to provide comprehensive educational options for working adults worldwide are all examples of competencies that are unique to these firms and arguably distinctive when compared to their competitors.

Distinctive competencies that are identified and nurtured throughout the firm, allowing it to execute effectively so as to provide products or services to customers that are superior to competitor's offerings, become the basis for a lasting *competitive advantage*. Executives, enthusiastic about the notion that their job as strategists was to identify and leverage core competencies into distinctive ones that create sustainable competitive advantage, encountered difficulty applying the concept because of the generality of its level of analysis. The RBV emerged as a way to make the core competency notion and thought process more focused and measurable—creating a very important, and more meaningful, tool for internal analysis. Let's look at the basic concepts underlying the RBV.

Three Basic Resources: Tangible Assets, Intangible Assets, and Organizational Capabilities

tangible assets
The most easily identified assets, often found on a firm's balance sheet. They include production facilities, raw materials, financial resources, real estate, and computers.

intangible assets
A firm's assets that you cannot touch or see but that are very often critical in creating competitive advantage: brand names, company reputation, organizational morale, technical knowledge, patents and trademarks, and accumulated experience within an organization.

organizational capabilities
Skills (the ability and ways of combining assets, people, and processes) that a company uses to transform inputs into outputs.

The RBV's ability to create a more focused, measurable approach to internal analysis starts with its delineation of three basic types of resources, some of which may become the building blocks for distinctive competencies. These resources are defined below and illustrated in Exhibit 6.7.

Tangible assets are the easiest "resources" to identify and are often found on a firm's balance sheet. They include production facilities, raw materials, financial resources, real estate, and computers. Tangible assets are the physical and financial means a company uses to provide value to its customers.

Intangible assets are "resources" such as brand names, company reputation, organizational morale, technical knowledge, patents and trademarks, and accumulated experience within an organization. While they are not assets that you can touch or see, they are very often critical in creating competitive advantage.

Organizational capabilities are not specific "inputs" like tangible or intangible assets; rather, they are the skills—the ability and ways of combining assets, people, and processes—that a company uses to transform inputs into outputs. Apple pioneered and has subsequently leveraged its iPod, iTunes, iPhone, iPad, and AppStore successes into major leadership positions in digitalized music, entertainment, and communication on a global basis for individual consumers. Microsoft and others have attempted to copy Apple, but remain far behind Apple's diverse organizational capabilities. Apple has subsequently refined or revolutionized these devices and services to automate and individually customize a whole new level of communication and entertainment capability that combines assets, people, and processes throughout and beyond the Apple organization. Finely developed capabilities, such as Apple's Internet-based, customer-friendly iTunes and AppStore systems, can be a source of sustained competitive advantage. They enable a firm to take the same input factors as rivals (such as Microsoft, HP, Google, or Dell) and convert them into products and services, either with greater efficiency in the process or greater quality in the output, or both.

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builds its distinct position in retailing by emphasizing sales and support activities on which they spend twice the retail industry average.

Second, the nature of value chains and the relative importance of the activities within them vary by industry. Lodging firms like Marriott have major costs and concerns that involve operational activities—it provides its service instantaneously at each location—and marketing activities, while having minimal concern for outbound logistics. Yet for a distributor, such as the food distributor PYA, inbound and outbound logistics are the most critical area. Major retailer Walmart has built value advantages focusing on purchasing, inbound logistics, and large full-service outlets. Financial software giant Intuit has built value advantages by program features tied to service—ease of use, year-to-year connection of customers to data accumulated in the software program (e.g., Turbo Tax) that tie the user back to it each year, and exceptional online support with any and every question through multilevel choices (FAQs; Community Answers; Expert Answers; Answers for a charge) for that help.

Third, the relative importance of value activities can vary by a company's position in a broader value system that includes the value chains of its upstream suppliers and downstream customers or partners involved in providing products or services to end users. A producer of roofing shingles depends heavily on the downstream activities of wholesale distributors and building supply retailers to reach roofing contractors and do-it-yourselfers. Maytag manufactures its own appliances, sells them through independent distributors, and provides warranty service to the buyer. Sears outsources the manufacture of its appliances while it promotes its brand name—Kenmore—and handles all sales and service.

Finally, the Internet-driven global revolution in the way people seek information, shop, and communicate is changing the potential sources of advantage in virtually all industries. Amazon.com now challenges Walmart for dominance in mass discount retailing based on advantages derived from a set of value activities that are different in several ways from what led Walmart's rise to global dominance. News availability online; entertainment options online; mobile computing and cloud services are all value-related activities in which competitive advantage can begin to dramatically lessen the importance of traditional sources of value in many industries rather quickly in favor of rapidly changing yet substantial new sources of advantage driven by the connectivity, convenience, and service the Internet-based offerings allow.

As all of these value chain examples suggest, it is important that managers take into account their level of vertical integration when comparing their cost structure for activities on their value chain to those of key competitors. Comparing a fully integrated rival with a partially integrated one requires adjusting for the scope of activities performed to achieve meaningful comparison. It also suggests the need for examining costs associated with activities provided by upstream or downstream companies; these activities ultimately determine comparable, final costs to end users. Said another way, one company's comparative cost disadvantage (or advantage) may emanate more from activities undertaken by upstream or downstream "partners" than from activities under the direct control of that company—therefore suggesting less of a relative advantage or disadvantage within the company's direct value chain.

RESOURCE-BASED VIEW OF THE FIRM

Toyota versus Ford is a competitive situation virtually all of us recognize. Stock analysts for the last two decades have concluded that Toyota was the clear leader. They often cited Toyota's superiority in tangible assets (newer factories worldwide, R&D facilities,

EXHIBIT 6.7
Examples of Different "Resources"

*Adapted from Robert M. Grant and Judith Jordan, *Foundations of Strategy*, John Wiley & Sons (2012). pp. 130–136.

Tangible Assets	Intangible Assets	Organizational Capabilities
Google's Campus Hdqtrs.	Google's Culture	Google's Product Innovation Process
Apple's Cash Reserves	Apple's Reputation	Apple's Supply Chain Coord.
FedEx's Plane Fleet	FedEx Cup PR value	FedEx Transportation Scheduling
Disney Theme Parks	ESPN logo/Ad value	Disney synergy with Pixar & ESPN

Ways to Classify and Measure a Firm's Resources*

Type of Resource	Its Associated Characteristics	Ways to Measure or Gauge
Tangible Resources:		
Physical resources	Physical resources are characteristics that define the firm's operational possibilities and influence its cost position and market reach. Key ones include: • The size, location, technical sophistication, and adaptability of facilities, equipment, and related fixed operational items • Location of and alternative uses for facilities, equipment, and land • Sources of key inputs, raw materials, etc. when needed	Type and age of operational/capital equipment Market value of key operational assets and capital equipment Scale available through facilities/equipment Flexibility in use of assets and equipment Interdependence with suppliers/buyers
Financial resources	The firm's available cash, its borrowing capacity, and its conservative cash flow to support its capacity for investment and sustainability under variable conditions	Short term assets; cash; credit rating Ratios: Debt/Equity; assets/liabilities Operating cash flow/free cash flow
Intangible Resources:		
Technology resources	Intellectual property: trade secrets, copyrights, patents, patent portfolio, trademarks Innovation resources like research facilities, technical personnel, capabilities, talented people, social media connections, and communities strongly linked to firm	Nature of research facilities and location R&D staff as % of total employment Social media/community innovate links # & $$ of patents; licensing; other IP
Reputation	Relationship with customers through social media, distinct virtual communities; through brands, trademarks and image-related means; continued customer relationship and reputation/perception for quality and dependability; nature of relationship with suppliers, banks, employees, investors, and those aspiring to be; with regulatory and government entities; and with communities in which the company operates	Number of social media followers; members of online and digital communities Brand recognition; ranking; equity Level of repeat customer/buyers; Objective comparative performance evaluations; company reputation survey comparisons (J. D. Powers, *Consumer Reports, Fortune;* etc.)

What Makes a Resource Valuable?

Once managers identify their firm's tangible assets, intangible assets, and organizational capabilities, the RBV applies a set of guidelines to determine which of those resources represent strengths or weaknesses—which resources generate core competencies that are sources of sustained competitive advantage. These RBV guidelines derive from the idea that resources are more valuable when they

1. Are *critical to* being able to *meet a customer's need* better than other alternatives.
2. Are *scarce*—few others if any possess that resource or skill to the degree you do.
3. *Drive* a key portion of overall *profits,* in a manner controlled by your firm.
4. Are *durable* or sustainable over time.

Before proceeding to explain each basis for making resources valuable, we suggest that you keep in mind a simple, useful idea: Resources are most valuable when they meet all four of these guidelines. We return to this point after we explain each guideline more thoroughly.

RBV Guideline 1: Is the resource or skill critical to fulfilling a customer's need better than that of the firm's competitors?

Two restaurants offer similar food, at similar prices, but one has a location much more convenient to downtown offices than the other. The tangible asset, location, helps fulfill daytime workers' lunch-eating needs better than its competitor, resulting in greater profitability and sales volume for the conveniently located restaurant. Walmart redefined discount retailing and outperformed the industry in profitability by 4.5 percent of sales—a 200 percent improvement. Four resources—store locations, brand recognition, employee loyalty, and sophisticated inbound logistics—allowed Walmart to fulfill customer needs much better and more cost effectively than Kmart and other discount retailers. In both of these examples, *it is important to recognize that only resources that contributed to competitive superiority were valuable*. At the same time, other resources such as the restaurant's menu and specific products or parking space at Walmart were essential to doing business but contributed little to competitive advantage because they did not help fulfill customer needs better than those of the firm's key competitors.

RBV Guideline 2: Is the resource scarce? Is it in short supply or not easily substituted for or imitated?

Short Supply When a resource is scarce, it is more valuable. When a firm possesses a resource and few if any others do, and it is central to fulfilling customers' needs, then it can become the basis of a competitive advantage for the firm. Literal physical scarcity is perhaps the most obvious way a resource might meet this guideline. Very limited natural resources, a unique location, skills that are truly rare—all represent obvious types of scarce resource situations.

Availability of Substitutes We discussed the threat of substitute products in Chapter 4 as part of the five forces model for examining industry profitability. This basic idea can be taken further and used to gauge the scarcity-based value of particular resources. Whole Foods has been an exciting growth company for several years, focused exclusively on selling wholesome, organic food. The basic idea was to offer food grown organically, without pesticides or manipulation, in a convenient grocery atmosphere. Investors were excited about this concept because of the processed, nonorganic foods offered by virtually every existing grocery chain. Unfortunately for their more recent investors, substitutes for Whole Foods's offerings are becoming easily available from several grocery chains and regional

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organic chains. Publix, Harris-Teeter, and even Walmart are easily adapting their grocery operations to offer organic fare. With little change to their existing facilities and operational resources, these companies are quickly creating alternatives to Whole Foods's offerings if not offering some of the same items, cheaper. So some worry about the long-term impact on Whole Foods. Investors have seen the value of their Whole Foods's stock decline as substitute resources and capabilities are readily created by existing and new entrants into the organic grocery sectors.

Imitation A resource that competitors can readily copy can only generate temporary value. It is "scarce" for only a short time. It cannot generate a long-term competitive advantage. When Wendy's first emerged, it was the only major hamburger chain with a drive-through window. This unique organizational capability was part of a "bundle" of resources that allowed Wendy's to provide unique value to its target customers: young adults seeking convenient food service. But once this resource, or organizational capability, proved valuable to fast-food customers, every fast-food chain copied the feature. Then Wendy's continued success was built on other resources that generated other distinctive competencies.

The scarcity that comes with an absence of imitation seldom lasts forever, as the Wendy's example illustrates. Competitors will match or better any resource as soon as they can. It should be obvious, then, that the firm's ability to forestall this eventuality is very important. So how does a firm create resource scarcity by making resources hard to imitate? The RBV identifies four characteristics, called **isolating mechanisms,** that make resources difficult to imitate:

isolating mechanisms
Characteristics that make resources difficult to imitate. In the RBV context these are physically unique resources, pathdependent resources, causal ambiguity, and economic deterrence.

- *Physically unique resources* are virtually impossible to imitate. A one-of-a-kind real estate location, mineral rights, and patents are examples of resources that cannot be imitated. Disney's Mickey Mouse copyright or Winter Park, Colorado's Aspen resort possess physical uniqueness. While many strategists claim that resources are physically unique, this is seldom true. Rather, other characteristics are typically what make most resources difficult to imitate.
- *"Path-dependent" resources* are very difficult to imitate because of the difficult "path" another firm must follow to create the resource. These are resources that cannot be instantaneously acquired but rather must be created over time in a manner that is frequently very expensive and always difficult to accelerate. Google's creation of proprietary search algorithms; interlocking and directly targeted online advertising; very easy to use, and also interwined, e-mail services; and an extraordinary environment to attract and retain the world's top talent have combined to create a combination of path-dependent resources that are very difficult for even the wealthiest software and Internet companies worldwide to easily emulate, acquire, or accelerate. It will take years for any competitor to develop the expertise, infrastructure, reputation, and capabilities to compete effectively with Google. Coca-Cola's brand name, Gerber Baby Food's reputation for quality, and Steinway's expertise in piano manufacture would take competitors many years and millions of dollars to match. Consumers' many years of experience drinking Coke or using Gerber or playing a Steinway would also need to be matched.
- *Causal ambiguity* is a third way resources can be very difficult to imitate. This refers to situations in which it is difficult for competitors to understand exactly how a firm has created the advantage it enjoys. Competitors can't figure out exactly what the uniquely valuable resource is or how resources are combined to create the competitive advantage. Causally ambiguous resources are often organizational capabilities that arise from subtle combinations of tangible and intangible assets and culture, processes, and organizational attributes the firm possesses. Southwest Airlines has regularly faced competition from major and regional airlines, with some like United and Continental eschewing their traditional approach and attempting to compete by using their own version of the Southwest

Chapter 6 Appendix A

Key Resources across Functional Areas

MARKETING

Firm's products-services: breadth of product line
Concentration of sales in a few products or to a few customers
Ability to gather needed information about markets
Market share or submarket shares
Product-service mix and expansion potential: life cycle of key products; profit-sales balance in product-service
Channels of distribution: number, coverage, and control
Effective sales organization: knowledge of customer needs
Internet usage; Web presence; e-commerce
Product-service image, reputation, and quality
Imaginativeness, efficiency, and effectiveness of sales promotion and advertising
Pricing strategy and pricing flexibility
Procedures for digesting market feedback and developing new products, services, or markets
After-sale service and follow-up
Goodwill—brand loyalty

FINANCIAL AND ACCOUNTING

Ability to raise short-term capital
Ability to raise long-term capital; debt-equity
Corporate-level resources (multibusiness firm)
Cost of capital relative to that of industry and competitors
Tax considerations
Relations with owners, investors, and stockholders
Leverage position; capacity to utilize alternative financial strategies, such as lease or sale and leaseback
Cost of entry and barriers to entry
Price-earnings ratio
Working capital; flexibility of capital structure
Effective cost control; ability to reduce cost
Financial size
Efficiency and effectiveness of accounting system for cost, budget, and profit planning

PRODUCTION, OPERATIONS, TECHNICAL

Raw materials' cost and availability, supplier relationships
Inventory control systems; inventory turnover
Location of facilities; layout and utilization of facilities
Economies of scale
Technical efficiency of facilities and utilization of capacity
Effectiveness of subcontracting use
Degree of vertical integration; value added and profit margin
Efficiency and cost-benefit of equipment
Effectiveness of operation control procedures: design, scheduling, purchasing, quality control, and efficiency
Costs and technological competencies relative to those of industry and competitors
Research and development—technology—innovation
Patents, trademarks, and similar legal protection

PERSONNEL

Management personnel
Employees' skill and morale
Labor relations costs compared with those of industry and competitors
Efficiency and effectiveness of personnel policies
Effectiveness of incentives used to motivate performance
Ability to level peaks and valleys of employment
Employee turnover and absenteeism
Specialized skills
Experience

QUALITY MANAGEMENT

Relationship with suppliers, customers
Internal practices to enhance quality of products and services
Procedures for monitoring quality

INFORMATION SYSTEMS

Timeliness and accuracy of information about sales, operations, cash, and suppliers
Relevance of information for tactical decisions
Information to manage quality issues: customer service
Ability of people to use the information that is provided
Linkages to suppliers and customers

INTERNET AND WIRELESS CAPABILITIES

Web site quality and functionality
Online sales and marketing
Customer connectivity
Use of social networking
Facebook, Twitter, LinkedIn, etc.
Wireless relevance; apps
Global cultural and language connection via the Web

ORGANIZATION AND GENERAL MANAGEMENT

Organizational structure
Firm's image and prestige
Firm's record in achieving objectives
Organization of communication system
Overall organizational control system (effectiveness and utilization)

Organizational climate; organizational culture
Use of systematic procedures and techniques in decision making
Top-management skill, capabilities, and interest
Strategic planning system
Intraorganizational synergy (multibusiness firms)

Chapter 6 Appendix B

Using Financial Analysis

One of the most important tools for assessing the strength of an organization within its industry is financial analysis. Managers, investors, and creditors all employ some form of this analysis as the beginning point for their financial decision making. Investors use financial analyses in making decisions about whether to buy or sell stock, and creditors use them in deciding whether or not to lend. They provide managers with a measurement of how the company is doing in comparison with its performance in past years and with the performance of competitors in the industry.

Although financial analysis is useful for decision making, some weaknesses should be noted. Any picture that it provides of the company is based on past data. Although trends may be noteworthy, this picture should not automatically be assumed to be applicable to the future. In addition, the analysis is only as good as the accounting procedures that have provided the information. When making comparisons between companies, one should keep in mind the variability of accounting procedures from firm to firm.

There are four basic groups of financial ratios: liquidity, leverage, activity, and profitability.

Depicted in Exhibit 6.B1 are the specific ratios calculated for each of the basic groups. Liquidity and leverage ratios represent an assessment of the risk of the firm. Activity and profitability ratios are measures of the return generated by the assets of the firm. The interaction between certain groups of ratios is indicated by arrows.

Typically, two common financial statements are used in financial analyses: the balance sheet and the income statement. Exhibit 6.B2 is a balance sheet and Exhibit 6.B3 an income statement for the ABC Company. These statements will be used to illustrate the financial analyses.

LIQUIDITY RATIOS

Liquidity ratios are used as indicators of a firm's ability to meet its short-term obligations. These obligations include any current liabilities, including currently maturing long-term debt. Current assets move through a normal cash cycle of inventories—sales—accounts receivable—cash. The firm then uses cash to pay off or reduce its current liabilities. The best-known liquidity ratio is the current ratio: current assets divided by current liabilities. For the ABC Company, the current ratio is calculated as follows:

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$4,125,000}{\$2,512,500} = 1.64 \text{ (2016)}$$

$$= \frac{\$3,618,000}{\$2,242,250} = 1.161 \text{ (2015)}$$

Most analysts suggest a current ratio of 2 to 3. A large current ratio is not necessarily a good sign; it may mean that an organization is not making the most efficient use of its assets. The optimum current ratio will vary from industry to industry, with the more volatile industries requiring higher ratios.

Because slow-moving or obsolescent inventories could overstate a firm's ability to meet short-term demands, the quick ratio is sometimes preferred to assess a firm's liquidity. The quick ratio is current assets minus inventories, divided by current liabilities. The quick ratio for the ABC Company is calculated as follows:

$$\frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}} = \frac{\$1,950,000}{\$2,512,500} = 0.78 \text{ (2016)}$$

$$= \frac{\$1,618,000}{\$2,242,250} = 0.72 \text{ (2015)}$$

A quick ratio of approximately 1 would be typical for American industries. Although there is less variability in the quick ratio than in the current ratio, stable industries would be able to operate safely with a lower ratio.

LEVERAGE RATIOS

Leverage ratios identify the source of a firm's capital—owners or outside creditors. The term *leverage* refers to the fact that using capital with a fixed interest charge will "amplify" either profits or losses in relation to the equity of holders of common stock. The most commonly used ratio is total debt divided by total assets. Total debt includes current liabilities and long-term liabilities. This ratio is a measure of the percentage of total funds provided by debt. A total debt–total assets ratio higher than 0.5 is usually considered safe only for firms in stable industries.

$$\frac{\text{Total debt}}{\text{Total assets}} = \frac{\$3,862,500}{\$7,105,000} = 0.54 \text{ (2016)}$$

$$= \frac{\$3,667,250}{\$6,393,000} = 0.57 \text{ (2015)]}$$

Organizational climate; organizational culture
Use of systematic procedures and techniques in decision making
Top-management skill, capabilities, and interest
Strategic planning system
Intraorganizational synergy (multibusiness firms)

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EXHIBIT 6.B1 Financial Ratios

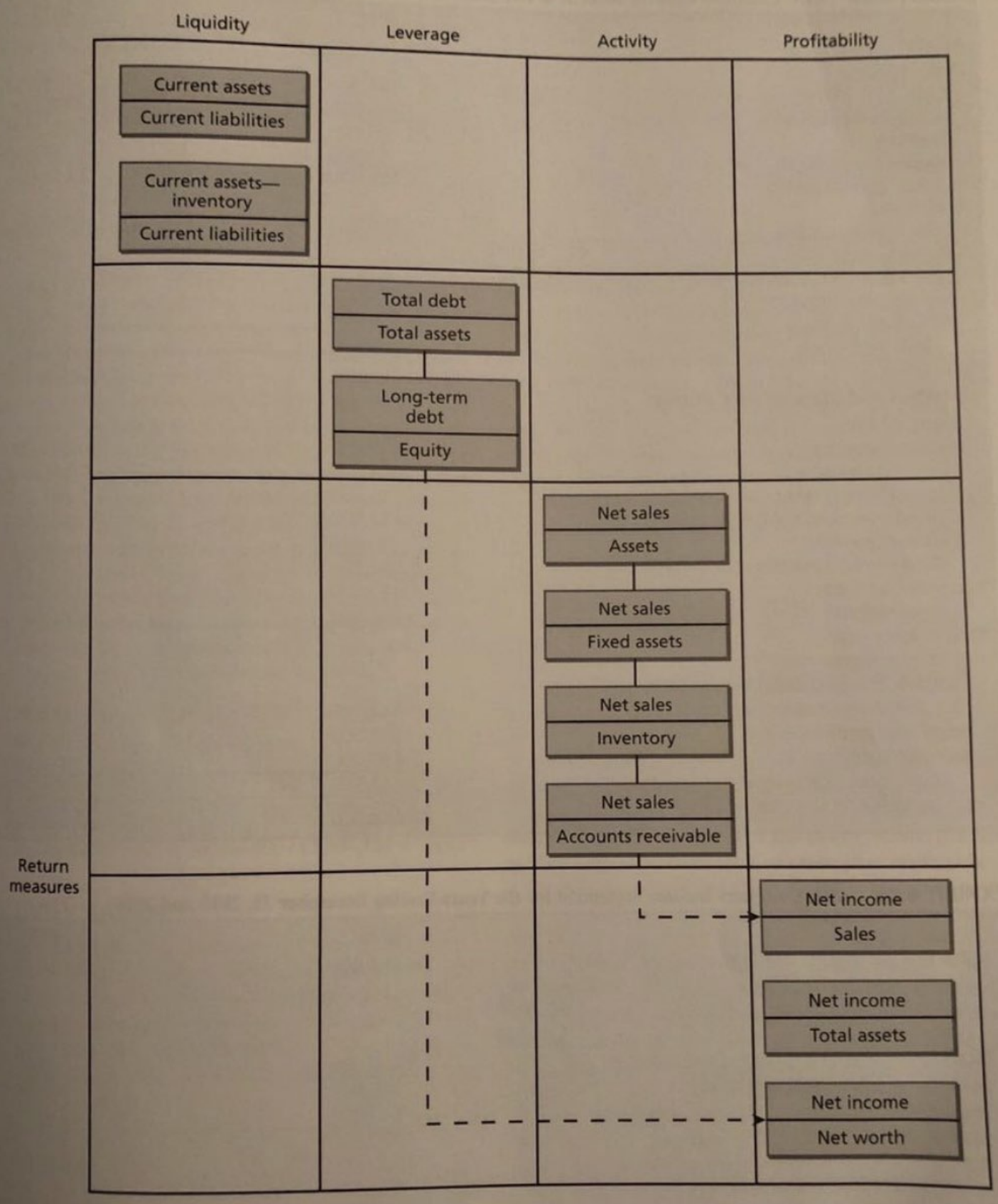


EXHIBIT 6.B2 ABC Company Balance Sheet as of December 31, 2015 and 2016

		2016		2015
Assets				
Current assets:				
Cash		$ 140,000		$ 115,000
Accounts receivable		1,760,000		1,440,000
Inventory		2,175,000		2,000,000
Prepaid expenses		50,000		63,000
Total current assets		4,125,000		3,618,000
Fixed assets:		1,255,000		1,090,000
Long-term receivable	$2,037,000		$2,015,000	
Property and plant	862,000		860,000	
Less: Accumulated depreciation		1,175,000		1,155,000
Net property and plant		550,000		530,000
Other fixed assets		2,980,000		2,775,000
Total fixed assets		$7,105,000		$6,393,000
Total assets				
Liabilities and Stockholders' Equity				
Current liabilities:				
Accounts payable		$1,325,000		$1,225,000
Bank loans payable		475,000		550,000
Accrued federal taxes		675,000		425,000
Current maturities (long-term debt)		17,500		26,000
Dividends payable		20,000		16,250
Total current liabilities		2,512,500		2,242,250
Long-term liabilities		1,350,000		1,425,000
Total liabilities		3,862,500		3,667,250
Stockholders' equity:				
Common stock (104,046 shares outstanding in 2016; 101,204 shares outstanding in 2015)		44,500		43,300
Additional paid-in-capital		568,000		372,450
Retained earnings		2,630,000		2,310,000
Total stockholders' equity		3,242,500		2,725,750
Total liabilities and stockholders' equity		$7,105,000		$6,393,000

EXHIBIT 6.B3 ABC Company Income Statement for the Years Ending December 31, 2015 and 2016

		2016		2015
Net sales		$8,250,000		$8,000,000
Cost of goods sold	$5,100,000		$5,000,000	
Administrative expenses	1,750,000		1,680,000	
Other expenses	420,000		390,000	
Total		7,270,000		7,070,000
Earnings before interest and taxes		980,000		930,000
Less: Interest expense		210,000		210,000
Earnings before taxes		770,000		720,000
Less: Federal income taxes		360,000		325,000
Earnings after taxes (net income)		$ 410,000		$ 395,000
Common stock cash dividends		$ 90,000		$ 84,000
Addition to retained earnings		$ 320,000		$ 311,000
Earnings per common share		$ 3.940		$ 3.90
Dividends per common share		$ 0.865		$ 0.83

6.B2

The ratio of long-term debt to equity is a measure of the extent to which sources of long-term financing are provided by creditors. It is computed by dividing long-term debt by the stockholders' equity:

$$\frac{\text{Long-term debt}}{\text{Stockholder's Equity}} = \frac{\$1{,}350{,}000}{\$3{,}242{,}500} = 0.42 \text{ (2016)}$$

$$= \frac{\$1{,}425{,}000}{\$2{,}725{,}750} = 0.52 \text{ (2015)}$$

Another ratio helpful in examining a company's use of leverage is the ratio of total assets to stockholder's equity, known as the *equity multiplier ratio.* Total assets is the sum of assets financed through stockholder's equity, and debt. So this equity multiplier ratio is another way of looking at the use of debt versus equity financing, in this case by calculating the multiple of equity being used to create the company's total asset base. The higher the equity multiplier ratio, the more a company is using debt relative to equity to finance its asset base.

Typically, the equity multiplier ratio is calculated by dividing a company's *average total assets* by its *average stockholder's equity* for a specific year. *Average total assets* would be determined by dividing the sum of total assets at the beginning of the year plus total assets at the end of the year by two (2). *Average stockholder's equity* would similarly be determined by dividing the sum of total stockholder's equity at the beginning of the year plus total stockholder's equity at the end of the year by two (2). The calculations to determine ABC Company's equity multiplier ratio would be as follows:

$$\text{Average total assets} = (\$7{,}105{,}000 + \$6{,}393{,}000)/2$$
$$= \$6{,}749{,}000$$

$$\text{Average stockholder's equity} = (\$3{,}242{,}000 + \$2{,}725{,}750)/2$$
$$= \$2{,}984{,}125$$

$$\text{Equity multiplier ratio} = \$6{,}749{,}000 / \$2{,}984{,}125 = 2.262$$

ACTIVITY RATIOS

Activity ratios indicate how effectively a firm is using its resources. By comparing revenues with the resources used to generate them, it is possible to establish an efficiency of operation. The asset turnover ratio indicates how efficiently management is employing total assets. Asset turnover is calculated by dividing sales by total assets. For the ABC Company, asset turnover is calculated as follows:

$$\text{Asset turnover} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

$$= \frac{\$8{,}250{,}000}{\$7{,}105{,}000} = 1.16 \text{ (2016)}$$

$$= \frac{\$8{,}000{,}000}{\$6{,}393{,}000} = 1.25 \text{ (2015)}$$

The ratio of sales to fixed assets is a measure of the turnover on plant and equipment. It is calculated by dividing sales by net fixed assets.

$$\text{Fixed asset turnover} = \frac{\text{Sales}}{\text{Net fixed assets}} = \frac{\$8{,}250{,}000}{\$2{,}980{,}000} = 2.77 \text{ (2016)}$$

$$= \frac{\$8{,}000{,}000}{\$2{,}775{,}000} = 2.88 \text{ (2015)}$$

Industry figures for asset turnover will vary with capital-intensive industries, and those requiring large inventories will have much smaller ratios.

Another activity ratio is inventory turnover, estimated by dividing sales by average inventory. The norm for U.S. industries is 9, but whether the ratio for a particular firm is higher or lower normally depends on the product sold. Small, inexpensive items usually turn over at a much higher rate than larger, expensive ones. Because inventories normally are carried at cost, it would be more accurate to use the cost of goods sold in place of sales in the numerator of this ratio. Established compilers of industry ratios, such as Dun & Bradstreet, however, use the ratio of sales to inventory.

$$\text{Inventory turnover} = \frac{\text{Sales}}{\text{Inventory}} = \frac{\$8{,}250{,}000}{\$2{,}175{,}000} = 3.79 \text{ (2016)}$$

$$= \frac{\$8{,}000{,}000}{\$2{,}000{,}000} = 4.00 \text{ (2015)}$$

The accounts receivable turnover is a measure of the average collection period on sales. If the average number of days varies widely from the industry norm, it may be an indication of poor management. A too-low ratio could indicate the loss of sales because of a too-restrictive credit policy. If the ratio is too high, too much capital is being tied up in accounts receivable, and management may be increasing the chance of bad debts. Because of varying industry credit policies, a comparison for the firm over time or within an industry is the only useful analysis. Because information on credit sales for other firms generally is unavailable, total sales must be used. Because not all firms have the same percentage of credit sales, there is only approximate comparability among firms:

$$\text{Accounts receivable turnover} = \frac{\text{Sales}}{\text{Accounts receivable}}$$

$$= \frac{\$8{,}250{,}000}{\$1{,}760{,}000} = 4.69 \text{ (2016)}$$

$$= \frac{\$8{,}000{,}000}{\$1{,}440{,}000} = 5.56 \text{ (2015)}$$

EX 6-B2

$$\text{Average collection period} = \frac{360}{\text{Accounts receivable turnover}}$$

$$= \frac{360}{4.69} = 77 \text{ days (2016)}$$

$$= \frac{360}{5.56} = 65 \text{ days (2015)}$$

PROFITABILITY RATIOS

Profitability is the net result of a large number of policies and decisions chosen by an organization's management. Profitability ratios indicate how effectively the total firm is being managed. The profit margin for a firm is calculated by dividing net earnings by sales. This ratio is often called *return on sales* (ROS). There is wide variation among industries, but the average for U.S. firms is approximately 5 percent.

$$\frac{\text{Net income}}{\text{Sales}} = \frac{\$410{,}000}{\$8{,}250{,}000} = 0.0497 \text{ (2016)}$$

$$= \frac{\$395{,}000}{\$8{,}000{,}000} = 0.0494 \text{ (2015)}$$

A second useful ratio for evaluating profitability is the return on total assets—or ROA, as it is frequently called—found by dividing net earnings by average total assets. The ABC Company's ROA is calculated as follows:

$$\frac{\text{Net income}}{\text{Average total assets}} = \frac{\$410{,}000}{\$7{,}105{,}000} = 0.0577 \text{ (2016)}$$

$$= \frac{\$395{,}000}{\$6{,}393{,}000} = 0.0618 \text{ (2015)}$$

ROA is sometimes calculated for a given year where the denominator, total assets, is measured as *average* total assets for that year. *Average total assets* would be determined by dividing the sum of total assets at the beginning of the year plus total assets at the end of the year by two. The DuPont Financial Analysis approach employs *average total assets* in its calculations of asset turnover and equity multiplier as shown in Exhibit 6.B4 and explained in the next section. The calculation of the average total assets at ABC Company would be:

$$\text{Average total assets} = (\$7{,}105{,}000 + \$6{,}393{,}000) / 2$$

$$= \$6{,}749{,}000$$

The ratio of net earnings to net worth is a measure of the rate of return or profitability of the stockholders' investment. It is calculated by dividing net earnings by net worth, the common stock equity and retained earnings account. ABC Company's *return on net worth or return on equity*, also called ROE, is calculated as follows:

$$\frac{\text{Net income}}{\text{Stockholder's Equity}} = \frac{\$410{,}000}{\$3{,}242{,}500} = 0.1264 \text{ (2016)}$$

$$= \frac{\$395{,}000}{\$2{,}725{,}750} = 0.1449 \text{ (2015)}$$

DuPont Financial Analysis. It is often difficult to determine causes for low ROE and/or a lack of profitability. The DuPont system of financial analysis provides management with clues to the lack of success of a firm. This financial tool brings together activity, profitability, and leverage measures and shows how these ratios interact to determine the overall profitability of the firm. A depiction of the system is set forth in Exhibit 6.B4.

The right side of the exhibit develops the turnover ratio. This section breaks down total assets into current assets (cash, marketable securities, accounts receivable, and inventories) and fixed assets. Sales divided by these total assets gives the turnover on assets.

The left side of the exhibit develops the profit margin on sales. The individual expense items plus income taxes are subtracted from sales to produce net profits after taxes. Net profits divided by sales gives the profit margin on sales. When the asset turnover ratio on the right side of Exhibit 6.B4 is multiplied by the profit margin on sales developed on the left side of the exhibit, the product is the return on assets (ROA) for the firm. This can be shown by the following formula:

$$\frac{\text{Sales}}{\text{Average total assets}} \times \frac{\text{Net income}}{\text{Sales}}$$

$$= \frac{\text{Net income}}{\text{Avg. total assets}} = \text{ROA}$$

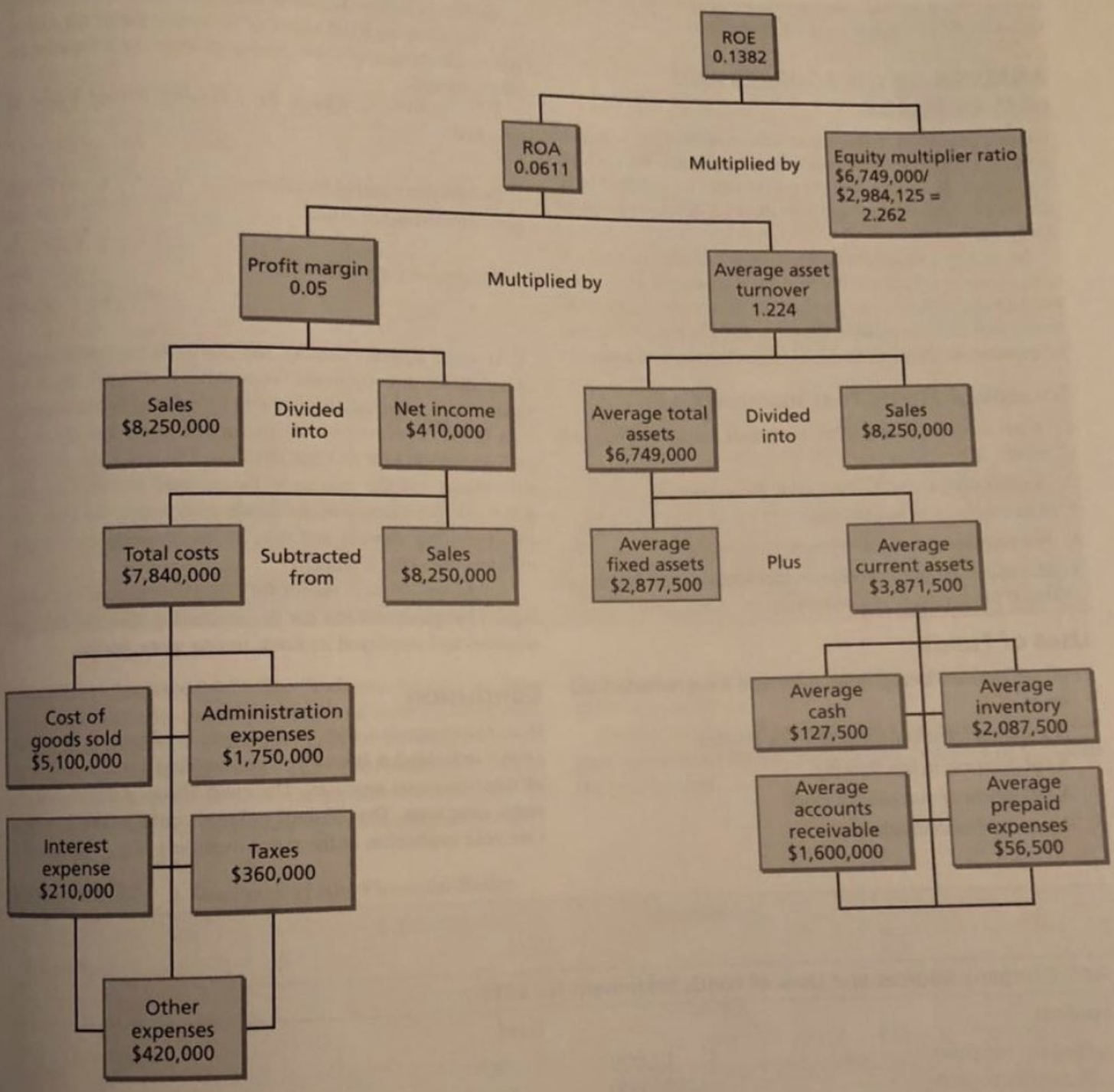
The last step in the DuPont analysis is to multiply the rate of return on assets (ROA) by the equity multiplier, which is the ratio of assets to common equity, to obtain the rate of return on equity (ROE). This percentage rate of return, of course, could be calculated directly by dividing net income by common equity. However, the DuPont analysis demonstrates how the return on assets and the use of debt interact to determine the return on equity.

The DuPont system can be used to analyze and improve the performance of a firm. On the left, or profit, side of the exhibit, attempts to increase profits and sales could be investigated. The possibilities of raising prices to improve profits (or lowering prices to improve volume) or seeking new products or markets, for example, could be studied. Cost accountants and production engineers could investigate ways to reduce costs. On the right, or turnover, side, financial officers could analyze the effect of reducing investment in various assets as well as the effect of using alternative financial structures.

There are two basic approaches to using financial ratios. One approach is to evaluate the corporation's performance over several years. Financial ratios are computed for different years, and then an assessment is made about whether there has been an improvement or deterioration over time. Financial ratios also can be computed for projected, pro forma, statements and compared with present and past ratios.

The other approach is to evaluate a firm's financial condition and compare it with the financial conditions of similar firms or with industry averages in the same period. Such

EXHIBIT 6.B4 DuPont's Financial Analysis



a comparison gives insight into the firm's relative financial condition and performance. Financial ratios for industries are provided by Robert Morris Associates, Dun & Bradstreet, Prentice Hall, and various trade association publications. (Associations and their addresses are listed in the *Encyclopedia of Associations* and in the *Directory of National Trade Associations*.) Information about individual firms is available through *Moody's Manual*, Standard & Poor's manuals and surveys, annual reports to stockholders, and the major brokerage houses.

To the extent possible, accounting data from different companies must be so standardized that companies can be compared or so a specific company can be compared with an industry average. It is important to read any footnotes of financial statements, because various accounting or management practices can have an effect on the financial picture of

EX 6.B4

the company. For example, firms using sale-leaseback methods may have leverage pictures quite different from what is shown as debts or assets on the balance sheet.

ANALYSIS OF THE SOURCES AND USES OF FUNDS

The purpose of this analysis is to determine how the company is using its financial resources from year to year. By comparing balance sheets from one year to the next, we can determine how funds were obtained and how these funds were employed during the year.

To prepare a statement of the sources and uses of funds, it is necessary to (1) classify balance sheet changes that increase and decrease cash, (2) classify from the income statement those factors that increase or decrease cash, and (3) consolidate this information on a sources and uses of funds statement form.

Sources of Funds That Increase Cash

1. A net decrease in any other asset than a depreciable fixed asset.
2. A gross decrease in a depreciable fixed asset.
3. A net increase in any liability.
4. Proceeds from the sale of stock.
5. The operation of the company (net income, and depreciation if the company is profitable).

Uses of Funds

1. A net increase in any other asset than a depreciable fixed asset.
2. A gross increase in depreciable fixed assets.
3. A net decrease in any liability.
4. A retirement or purchase of stock.
5. Payment of cash dividends.

We compute gross changes to depreciable fixed assets by adding depreciation from the income statement for the period to net fixed assets at the end of the period and then subtracting from the total net fixed assets at the beginning of the period. The residual represents the change in depreciable fixed assets for the period.

For the ABC Company, the following change would be calculated:

Net property and plant (2016)	$ 1,175,000
Depreciation for 2016	+80,000
	$ 1,255,000
Net property and plant (2015)	−1,155,000
	$ 100,000

To avoid double counting, the change in retained earnings is not shown directly in the funds statement. When the funds statement is prepared, this account is replaced by the earnings after taxes, or net income, as a source of funds, and dividends paid during the year as a use of funds. The difference between net income and the change in the retained earnings account will equal the amount of dividends paid during the year. The accompanying sources and uses of funds statement was prepared for the ABC Company.

A funds analysis is useful for determining trends in working-capital positions and for demonstrating how the firm has acquired and employed its funds during some period.

Conclusion

It is recommended that you prepare a chart, such as that shown in Exhibit 6.B5, so you can develop a useful portrayal of these financial analyses. The chart allows a display of the ratios over time. The "Trend" column could be used to indicate your evaluation of the ratios over time (e.g., "favorable,"

ABC Company Sources and Uses of Funds Statement for 2016

Sources		Uses	
Prepaid expenses	$ 13,000	Cash	$ 25,000
Accounts payable	100,000	Accounts receivable	320,000
Accrued federal taxes	250,000	Inventory	175,000
Dividends payable	3,750	Long-term receivables	165,000
Common stock	1,200	Property and plant	100,000
Additional paid-in capital	195,550	Other fixed assets	20,000
Earnings after taxes (net income)	410,000	Bank loans payable	75,000
Depreciation	80,000	Current maturities of long-term debt	8,500
Total sources	$1,053,500	Long-term liabilities	75,000
		Dividends paid	90,000
		Total uses	$1,053,500

EXHIBIT 6.B6 *(continued)*

Ratio	Calculation	Meaning
Times-interest-earned ratio	$\frac{\text{Profits before interest and taxes}}{\text{Total interest charges}}$	The extent to which earnings can decline without the firm becoming unable to meet its annual interest costs.
Equity Multiplier Ratio	$\frac{\text{Average total assets}}{\text{Avg. stockholders' equity}}$	The use of debt financing to leverage a company's stockholders equity.
Activity Ratios:		
Inventory turnover	$\frac{\text{Sales}}{\text{Inventory of finished goods}}$	Whether a firm holds excessive stocks of inventories and whether a firm is selling its inventories slowly compared to the industry average.
Fixed assets turnover	$\frac{\text{Average sales}}{\text{Fixed assets}}$	Sales productivity and plant equipment utilization.
Total assets turnover	$\frac{\text{Sales}}{\text{Average total assets}}$	Whether a firm is generating a sufficient volume of business for the size of its assets investment.
Accounts receivable turnover	$\frac{\text{Annual credit sales}}{\text{Accounts receivable}}$	In percentage terms, the average length of time it takes a firm to collect on credit sales.
Average collection period	$\frac{\text{Accounts receivable}}{\text{Total sales/365 days}}$	In days, the average length of time it takes a firm to collect on credit sales.
Profitability Ratios:		
Gross profit margin	$\frac{\text{Sales} - \text{Cost of goods sold}}{\text{Sales}}$	The total margin available to cover operating expenses and yield a profit.
Operating profit margin	$\frac{\text{Earnings before interest and taxes (EBIT)}}{\text{Sales}}$	Profitability without concern for taxes and interest.
Net profit margin	$\frac{\text{Net income}}{\text{Sales}}$	After-tax profits per dollar of sales.
Return on total assets (ROA)	$\frac{\text{Net income}}{\text{Avg. total assets}}$	Ratio of annual net income to average total assets during a financial year—indicator of profitable use assets.
Return on stockholders' equity (ROE)	$\frac{\text{Net income}}{\text{Total stockholders' equity}}$	After-tax profits per dollar of stock-holders' investment in the firm.
Earnings per share (EPS)	$\frac{\text{Net income}}{\text{Number of shares of common stock outstanding}}$	Earnings available to the owners of common stock.
Growth Ratios:		
Sales	Annual percentage growth in total sales	Firm's growth rate in sales.
Income	Annual percentage growth in profits	Firm's growth rate in profits.
Earnings per share	Annual percentage growth in EPS	Firm's growth rate in EPS.
Dividends per share	Annual percentage growth in dividends per share	Firm's growth rate in dividends per share.
Price-earnings ratio	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Faster-growing and less risky firms tend to have higher price-earnings ratios.

EXHIBIT 6.B5 A Summary of the Financial Position of a Firm

Ratios and Working Capital	2012	2013	2014	2015	2016	Trend	Industry Average	Interpre-tation
Liquidity: Current								
Quick								
Leverage: Debt-assets								
Debt-equity								
Equity Multiplier								
Activity: Asset turnover								
Fixed asset ratio								
Inventory turnover								
Accounts receivable turnover								
Average collection period								
Profitability: ROS								
ROI								
ROE								
Working-capital position								

"neutral," or "unfavorable"). The "Industry Average" column could include recent industry averages on these ratios or those of key competitors. These would provide information to aid interpretation of the analyses. The "Interpretation" column could be used to describe your interpretation of the ratios for this firm. Overall, this chart gives a basic display of the ratios that provides a convenient format for examining the firm's financial condition.

Finally, Exhibit 6.B6 is included to provide a quick reference summary of the calculations and meanings of the ratios discussed earlier.

EXHIBIT 6.B6 A Summary of Key Financial Ratios

Ratio	Calculation	Meaning
Liquidity Ratios:		
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	The extent to which a firm can meet its short-term obligations.
Quick ratio	$\frac{\text{Current assets–inventory}}{\text{Current liabilities}}$	The extent to which a firm can meet its short-term obligations without relying on the sale of inventories.
Leverage Ratios:		
Debt-to-total-assets ratio	$\frac{\text{Total debt}}{\text{Total assets}}$	The percentage of total funds that are provided by creditors.
Debt-to-equity ratio	$\frac{\text{Total debt}}{\text{Total stockholders' equity}}$	The percentage of total funds provided by creditors versus the percentage provided by owners.
Long-term-debt-to-equity ratio	$\frac{\text{Long-term debt}}{\text{Total stockholders' equity}}$	The balance between debt and equity in a firm's long-term capital structure.

(continued)