

# CHAPTER 1

## OVERVIEW OF FINANCIAL REPORTING, FINANCIAL STATEMENT ANALYSIS, AND VALUATION

### *Solutions to Questions, Exercises, Problems, and Teaching Notes to Cases*

#### 1.1 Porter's Five Forces Applied to the Air Courier Industry.

**Buyer Power.** Air courier services are a commodity. Firms in the industry offer similar overnight or two-day deliveries. Firms also provide opportunities to track shipments. Business customers can negotiate favorable shipping terms based on the volume of shipments. Thus, buyer power among large corporate customers is high.

**Supplier Power.** The principal inputs are labor services, equipment, and information systems. Except for pilots and some information processing specialists, the skill required to offer air courier services is relatively low. Therefore, competition for jobs reduces supplier power. The principal items of equipment are airplanes, trucks, and sorting equipment. The number of suppliers of this equipment is relatively small, but the equipment offered is largely a commodity. Thus, equipment supplier power is relatively low. Information systems are critical to scheduling, tracking, and delivering parcels. Hiring individuals with the education and skills needed to design and maintain this information system is not difficult because these skills and education are not unique. Thus, supplier power is low.

**Rivalry among Existing Firms.** Seven air couriers now carry a 90% market share. Fed Ex and UPS have the largest market shares and compete heavily. Smaller firms compete more in particular geographical or customer markets. Thus, rivalry is relatively high.

**Threat of New Entrants.** The cost of acquiring equipment, developing national and international delivery networks, and overcoming entrenched firms in an already crowded market makes the threat of new entrants low.

**Threat of Substitutes.** The main threat to transportation of letter parcels is digital transmission, and that threat is high. The threat of substitutes for transportation of packages is low.

#### 1.2 Economic Attributes Framework Applied to the Specialty Retailing Apparel Industry.

**Demand.** Firms attempt to compete on design, colors, and other product attributes, but apparel is largely a commodity. Demand is somewhat cyclical with economic

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conditions; customers tend to delay purchases or trade down during economic downturns. Demand is seasonal within the year. Demand grows at the growth rate in population, which suggests that apparel retailing is a relatively mature market. To the extent that retailers can generate customer loyalty, demand is not highly price-sensitive. However, given the similarity of product offerings across firms, firms cannot price their goods too much out of line with those of their competitors.

**Supply.** In most markets, there are many firms selling similar apparel. The barriers to entry are not particularly high because an apparel line and retail space are the most important ingredients.

**Manufacturing.** The manufacturing process is labor-intensive. The manufacturing process is relatively simple, and firms source their apparel from Asia, which has low wages.

**Marketing.** Because of the large number of suppliers selling similar products, apparel-retail firms must stimulate demand with attractive store layouts, colorful product offerings, and various sales promotions.

**Investing and Financing.** Firms must finance inventory, usually with a combination of supplier and bank financing. The risk of inventory obsolescence is somewhat high if the product offerings in a particular season do not sell. Firms tend to rent retail space in shopping malls, so they need to engage in extensive long-term borrowing.

### **1.3 Identification of Commodity Businesses.**

**Dell.** Dell's products—computers, servers and printers—are commodities. Dell tends not to develop the technologies underlying these products. Instead, it purchases the components from firms that develop the technologies (semiconductors and computer software). Dell's direct-to-customer marketing strategy is not unique, but the extent to which Dell performs this strategy better than anyone else in the industry gives it a competitive advantage. Its size, purchasing power, quality control, and efficiency permit it to operate as a low-cost provider.

**Southwest Airlines.** Airline transportation is a commodity service in the sense that seats on one airline cannot be differentiated from seats on another airline. Southwest Airlines' strategy is to be the lowest cost provider of such services, thereby differentiating itself on low prices.

**Microsoft.** The basic idea of a commodity product is that the product offerings of one firm are so similar to those of other firms that customers can easily switch to competitors' products if price becomes an issue. The technological attributes of computer software are duplicated relatively easily, a commodity attribute. However,

Microsoft's size permits it to invest in new technology development and keep it on the leading edge of new technologies. Microsoft also has a huge advantage in terms of installed base, meaning that most customers almost have to purchase its software to be able to use application programs and to communicate with other computer users. Thus, its products are inherently commodities but Microsoft is able to overcome some of the disadvantages of commodity status.

**Johnson & Johnson.** Johnson & Johnson operates in three business segments: consumer health care, pharmaceuticals, and medical equipment. It derives the majority of its revenue and profits from the latter two industries. Patents protect the products of these two industries, which give the firm a degree of market power. Until another firm creates a new product that dominates the patented product of Johnson & Johnson, its product is not a commodity. However, rapid technological change makes most products obsolete before the end of the patent's life. Johnson & Johnson's products probably have fewer commodity attributes than the other three firms in this exercise.

One of the purposes of this exercise is to illustrate that firms can pursue product differentiation strategies and low-cost leadership strategies and, if performed well, can gain "most admired status."

- 1.4 Identification of Company Strategies.** The strategies of Home Depot and Lowe's are marked more by their similarities than by their differences. Both firms sell to the do-it-yourself homeowner and the professional builder, plumber, or electrician at competitively low prices. Their in-store product offerings are similar, roughly evenly split between building materials, electrical and plumbing supplies, hardware, paint, and floor coverings. Their store sizes are approximately the same. Both use sales personnel with expertise in a particular home improvement area to offer advice to customers. Both rely on third-party credit cards for a large portion of their sales to customers. Home Depot is slightly less than twice the size of Lowe's in terms of number of stores. Home Depot's stores span the United States, whereas Lowe's tends to locate in the eastern United States. However, Lowe's is expanding westward.
- 1.5 Researching the FASB Website.** The answer will change over time as the FASB updates its activities. The purpose of the exercise is to familiarize students with the FASB website and the kinds of information they can find there.
- 1.6 Researching the IASB Website.** The answer will change over time as the IASB updates its activities. The purpose of the exercise is to familiarize students with the IASB website and the kinds of information they can find there.

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**1.7 Effect of Industry Economics on Balance Sheets.** Among the three firms, Intel faces the greatest risk of technological change for its products. Although the manufacture of semi-conductors is capital-intensive, Intel does not add financial risk to its already high business risk. Thus, Firm B is Intel. The revenues of American Airlines and Walt Disney change with changes in economic conditions, subjecting them to cyclical risk and, thereby, reducing their use of long-term debt. Besides producing movies and family entertainment, Disney operates theme parks, which the firm does not include in property, plant, and equipment. This will reduce its property, plant, and equipment to total assets percentage. American Airlines has few assets other than its flight and ground support equipment. Thus, Firm A is Disney, and Firm C is American Airlines. It may seem strange that Disney has smaller proportions of long-term debt in its capital structure compared to American Airlines. One possible explanation is that the assets of American Airlines have a more ready market in case a lender repossesses and sells them than does the more unique assets of Disney. The more ready market reduces the borrowing cost. In this case, however, the explanation lies in the fact that American Airlines has operated at a net loss for several years and has negative shareholders' equity. The result is a higher ratio of long-term debt to assets for American Airlines than for Disney.

**1.8 Effect of Business Strategy on Common-Size Income Statements.** Firm A is Dell, and Firm B is Apple Computer. The clues appear next.

**Cost of Goods Sold to Sales Percentages.** One would expect Dell to have a higher cost of goods sold to sales percentage because it adds less value, essentially following an assembly strategy, and competes based on low prices. Apple Computer can obtain a higher markup on its manufacturing costs because it creates more unique products with a somewhat unique consumer following.

**Selling and Administrative Expense to Sales Percentages.** Both Dell and Apple Computer engage in extensive promotion to market their products to consumers, thereby increasing their selling expenses. One might expect Apple Computer to spend more on marketing and advertising than Dell would spend. One also might expect Dell, as a producer of commodities, to be more focused on controlling costs such as administrative expenses. So it is interesting that Apple's selling and administrative expense are considerably smaller than Dell's.

**Research and Development Expense to Sales Percentages.** Apple Computer is more of a technology innovator than Dell, thereby giving Apple Computer a higher R&D (research and development) expense to sales percentage.

**Net Income to Sales Percentages.** These percentages are consistent with the strategies of these firms. Compared to Dell, Apple Computer has a much higher profit margin.

**1.9 Effect of Business Strategy on Common-Size Income Statements.** Firm A is Dollar General, and Firm B is Macy's. Department stores sell branded products for which the stores can obtain a higher markup on their acquisition cost. Discount stores price low in an effort to gain volume. Thus, the cost of goods sold to sales percentage of Macy's should be lower than that of Dollar General. Department stores engage in advertising and other promotions to stimulate demand. Also, their cost for space is higher. These factors should increase their selling and administrative expense to sales percentage. Dollar General maintains a high level of debt, so interest expense (included in all other items) is much higher than it is for Macy's. One would expect that the department stores have a higher net income to sales percentage.

**1.10 Effect of Industry Characteristics on Financial Statement Relations.** There are various strategies for approaching this problem. One strategy begins with a particular company, identifies unique financial characteristics (for example, hotel and casino companies have a high proportion of property, plant, and equipment among their assets), and then searches the common-size data in *Text* Exhibit 1.22 to identify the company with that unique characteristic. Another approach begins with the common-size data in *Text* Exhibit 1.22, identifies unusual financial statement relations [for example, Firm (8) has a high proportion of receivables], and then looks over the list of companies to identify the one most likely to have substantial receivables among its assets. We follow both strategies here. All of the data are scaled by total revenues (except for the final data item, which is cash flow from operations over capital expenditures); so throughout this discussion when we refer to a "percentage," it is a percentage of revenues. The data from *Text* Exhibit 1.22 in the text, with company names as column headings, are presented at the end of this solution in Exhibit 1.B.

The two financial services firms will have balance sheets dominated by cash, securities, and loans receivable. Firms (8) and (1) meet this description. Cash and securities present 2,256% for Firm (1), typical of a securities firm, suggesting that it is Goldman Sachs. Firm (8) also has a high percentage of cash and securities (2,198%), consistent with Citigroup's involvement in a wide range of financial services. In addition, receivables comprise a higher percentage for Firm (8) than for Firm (1) [1,384% for Firm (8) versus 352% for Firm (1)], distinguishing Firm (8) as Citigroup and Firm (1) as Goldman Sachs. Neither firm is fixed-asset-intensive, reporting immaterial amounts of PP&E relative to revenues.

Firms (2), (5), and (7) have high percentages of property, plant, and equipment and are clearly fixed-asset-intensive. These firms are Carnival Corporation (2), Verizon Communications (5), and MGM Mirage (7). These firms are capital-asset-intensive business models—operating cruise ships, telecommunications networks, and hotel and casino chains, respectively. Firm (2) and Firm (7) have similar property, plant, and equipment percentages and depreciation and amortization expense percentages. Firm (5) has the highest depreciation and amortization expense percentage, which implies a shorter depreciable life for its depreciable

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assets compared to Firm (2) and Firm (7). Due to technological obsolescence, the depreciable assets of Verizon likely have a shorter life than the casinos and hotels of MGM or the ships of Carnival. Thus, Firm (5) is Verizon. Note that Verizon does not amortize its wireless licenses, meaning amortization of these licenses will not explain the higher depreciation and amortization expense to revenues percentage for Firm (5). The percentage of accumulated depreciation to the cost of property, plant, and equipment also is much higher for Firm (5) than for Firm (2) or Firm (7), a consequence of Firm (5)'s higher depreciation and amortization expense. Another distinguishing characteristic of Firm (5) is that it has a lower cost of sales percentage than does Firm (2) or Firm (7). Verizon's services are more capital-intensive, not labor-intensive, compared to those of Carnival and MGM, which lowers Verizon's operating expense line. Also, Carnival and MGM sell meals as part of their services, including the cost in cost of sales. Of the three firms, Firm (5) has the highest selling and administrative expense to revenues percentage. Telecommunication services are more competitive than luxury entertainment, which increases marketing expenses and lowers revenues for Verizon.

To distinguish Firm (2) (Carnival) from Firm (7) (MGM Mirage), recognize that Firm (7) finances more heavily with long-term debt, consistent with hotel and casino properties supporting higher leverage than cruise ships. Firm (7)'s higher proportion of long-term debt might suggest that compared to ships, hotels and casinos serve as better collateral for loans. Another possibility is that MGM simply chose to use debt more extensively than did Carnival. Firm (7) has a higher selling and administrative expense percentage and thereby a lower net income percentage. Distinguishing these two firms is a close call. The land-based services of MGM are probably more competitive because of the direct competition located nearby and the low switching costs for customers. Once customers commit to a cruise, their switching costs are higher. Thus, one would expect MGM to have higher marketing costs and a lower net income to revenues percentage. This reasoning suggests that Firm (7) is MGM and Firm (2) is Carnival.

Three firms have R&D expenses: Firms (3), (6), and (12). These firms are Johnson & Johnson, Cisco Systems, and eBay, respectively. All three firms have high profit margins; high proportions of cash and marketable securities; low proportions of property, plant, and equipment; and low long-term debt. All are consistent with technology-based firms. These firms differ on their R&D percentages, with Firm (12) having the lowest percentage. Both Johnson & Johnson and Cisco invest in R&D to create new products, whereas eBay invests in technology to support the offering of its online services. The clue suggests that eBay is Firm (12). In addition, Firm (12) differs from Firm (6) and Firm (3) in that it has no inventory, consistent with eBay's business model of being a market-making intermediary rather than a producer. Firm (12) also differs from Firm (6) and Firm (3) in the amount of intangibles. Intangibles dominate the balance sheet of Firm (12). The problem indicates that eBay has grown its network of online services largely by acquiring other firms, which increases goodwill and other intangibles. Thus, Firm (12) is eBay.

It is difficult to distinguish Firm (3) as Johnson & Johnson and Firm (6) as Cisco. A few subtle differences between the percentages for these two firms are as follows: As a high-tech company, Cisco requires more R&D than Johnson & Johnson does, which generates revenues from branded over-the-counter consumer health products, which do not require as much R&D investment. This suggests that Johnson & Johnson is Firm (3) and Cisco is Firm (6). In the same vein, Cisco will turn over inventory faster than Johnson & Johnson will, which is revealed in Cisco's having a lower inventory percentage compared to Johnson & Johnson.

This leaves four firms: Firms (4), (9), (10), and (11). The four remaining firms are Kellogg's, Amazon.com, Molson Coors, and Yum! Brands, respectively. Amazon.com is likely the least fixed-asset-intensive of the firms. It must invest in information systems but does not need manufacturing or retailing assets, as the other three do. In addition, Amazon will require the highest levels of R&D among the four firms. This suggests that Firm (9) is Amazon.com. Firm (9) also has the highest cost of sales percentage of the four firms, consistent with Amazon.com's low value added for its online services. It is interesting to compare the cost of sales to revenues percentages for Amazon.com and eBay [Firm (12)]. Amazon.com includes the full selling price of goods sold in its revenues whenever it takes product risk and the cost of the product sold in the cost of sales. On the other hand, eBay does not assume product risk, so its revenue includes only customer posting and transaction fees and advertising fees. Its cost of sales percentage is quite low because it includes primarily compensation of personnel maintaining its auction sites.

This leaves Firm (4), Firm (10), and Firm (11). Firm (11) has the smallest inventories percentage, consistent with a restaurant selling perishable foods. The cost of sales percentage for Firm (11) is the highest of these three remaining firms. The extent of competition in the restaurant business is likely higher than that for the branded food products of Molson Coors and Kellogg's, consistent with lower value added (higher cost of sales percentage) for Firm (11). Thus, Firm (11) is Yum! Brands.

Firm (10) has a significantly higher intangibles to revenues percentage than does Firm (4). Molson Coors has made significant investments in acquisitions of other beer companies in recent years, which increased its goodwill. Kellogg's has a smaller yet still significant goodwill percentage, consistent with Kellogg's strategy of acquiring other branded foods companies and recognizing goodwill. Firm (10) is Molson Coors, and Firm (4) is Kellogg's.

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**Exhibit 1.B—(Problem 1.10) (Text Exhibit 1.22)**

	Goldman Sachs 1	Carnival Corp 2	J&J 3	Kellogg's 4	Verizon 5	Cisco 6	MGM Mirage 7	Citigroup 8	Amazon .com 9	Molson Coors 10	Yum 11	eBay 12
<b>BALANCE SHEET</b>												
Cash & marketable securities	2,256.1%	4.1%	20.1%	2.0%	10.6%	96.9%	4.1%	2,198.0%	26.0%	4.5%	1.9%	39.3%
Receivables	352.8	2.8	15.2	8.9	12.0	8.8	4.2	1,384.8	4.0	13.3	2.0	5.1
Inventories	—	2.4	7.9	7.0	2.1	3.0	1.5	—	8.9	4.0	1.3	—
Property, plant, and equipment, at cost	—	286.8	43.0	55.4	221.5	33.8	278.8	—	7.8	41.4	61.1	32.9
Accumulated depreciation	—	(59.8)	(20.4)	(32.5)	(132.6)	(22.6)	(52.8)	—	(2.6)	(14.1)	(28.3)	(18.9)
Property, plant, and equipment, net	—%	227.0%	22.5%	22.9%	88.9%	11.2%	226.0%	—%	5.3%	27.3%	32.9%	14.0%
Intangibles	—	36.5	43.4	39.8	75.2	40.5	6.0	101.9	5.0	109.4	8.3	90.9
Other assets	57.3	7.2	24.0	4.8	19.0	28.3	81.0	208.5	7.2	59.7	11.4	33.3
<b>Total assets</b>	<u>2,666.2%</u>	<u>280.0%</u>	<u>133.2%</u>	<u>85.4%</u>	<u>207.9%</u>	<u>188.6%</u>	<u>322.9%</u>	<u>3,893.3%</u>	<u>56.4%</u>	<u>218.2%</u>	<u>57.9%</u>	<u>182.6%</u>
Current liabilities	2,080.8%	37.8%	32.7%	27.7%	26.6%	37.8%	41.7%	2,878.4%	30.0%	20.7%	15.3%	43.4%
Long-term debt	390.9	69.1	12.7	31.7	48.2	28.5	172.2	596.1	0.4	38.4	31.6	—
Other long-term liabilities	92.6	5.6	21.1	14.6	90.2	15.3	53.8	171.3	4.4	33.9	12.0	9.4
Shareholders' equity	101.9	167.5	66.7	11.3	42.8	107.0	55.1	247.5	21.4	125.3	(1.0)	129.8
<b>Total Liabilities and Shareholders' Equity</b>	<u>2,666.2%</u>	<u>280.0%</u>	<u>133.2%</u>	<u>85.4%</u>	<u>207.9%</u>	<u>188.6%</u>	<u>322.9%</u>	<u>3,893.3%</u>	<u>56.4%</u>	<u>218.2%</u>	<u>57.9%</u>	<u>182.6%</u>
<b>INCOME STATEMENT</b>												
Operating revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales (excluding depreciation) or operating expenses	(54.6)	(61.6)	(29.0)	(58.1)	(40.1)	(36.1)	(56.0)	(73.4)	(85.8)	(59.5)	(75.1)	(26.1)
Depreciation and amortization	(2.0)	(9.9)	(4.4)	(2.9)	(15.0)	(1.5)	(10.8)	(5.0)	(1.5)	(5.7)	(4.9)	(2.8)
Selling and administrative	(1.4)	(12.1)	(29.3)	(23.7)	(27.6)	(27.6)	(19.3)	(5.1)	(2.6)	(27.9)	(7.6)	(33.7)
Research and development	(1.6)	—	(12.2)	—	—	(14.6)	—	(7.7)	(5.1)	—	—	(8.5)
Interest (expense)/income	9.5	(2.8)	(0.1)	(2.5)	(1.9)	1.0	(8.5)	78.4	—	(1.8)	(2.0)	1.3
Income taxes	(14.3)	(0.1)	(6.2)	(3.8)	(3.4)	(4.3)	(2.6)	(16.0)	(1.0)	(2.2)	(2.8)	(4.7)
All other items, net	(8.0)	0.1	1.6	—	(5.5)	—	2.3	(28.8)	(0.3)	5.2	0.4	—
<b>Net income</b>	<u>27.6%</u>	<u>13.6%</u>	<u>20.3%</u>	<u>9.0%</u>	<u>6.6%</u>	<u>17.0%</u>	<u>5.3%</u>	<u>42.3%</u>	<u>3.7%</u>	<u>8.0%</u>	<u>8.0%</u>	<u>25.5%</u>
Cash flow from operations/capital expenditures	n.m.	1.0	4.9	2.7	1.5	9.8	1.0	n.m.	8.8	1.8	1.6	5.1

**1.11 Effect of Industry Characteristics on Financial Statement Relations.** There are various strategies for approaching this problem. One strategy begins with a particular company, identifies unique financial characteristics (for example, electric utilities have a high proportion of property, plant, and equipment among their assets), and then searches the common-size data in *Text* Exhibit 1.23 to identify the company with that unique characteristic. Another approach begins with the common-size data in *Text* Exhibit 1.23, identifies unusual financial statement relations [for example, Firm (10) has a high proportion of receivables], and then looks over the list of companies to identify the one most likely to have substantial receivables among its assets. We follow both strategies here. All of the data are scaled by total revenues (except for the final data item, which is cash flow from operations over capital expenditures); so throughout this discussion when we refer to a “percentage,” it is a percentage of revenues. The data from *Text* Exhibit 1.23 in the text, with company names as column headings, are presented at the end of this solution in Exhibit 1.C.

Firm (10) stands out because it has the highest proportion of receivables among its assets and the most substantial borrowing in its capital structure. This balance sheet structure is typical of the finance company, HSBC Finance. We ask students why the capital markets allow a finance company to have such a high proportion of borrowing in its capital structure. The answer is threefold: (1) Finance companies have contractual rights to receive future cash flows from borrowers (the cash flow tends to be highly predictable); (2) finance companies lend to many different individuals, which diversifies their risk; and (3) borrowers often pledge collateral to back up the loan, which provides the finance companies with an alternative for collecting cash if borrowers default on their loans. Thus, the low risk in the asset structure allows the firm to assume high risk on the financing side. We use this opportunity to ask students how this firm can justify recognizing interest revenue on its loans as the revenue accrues each period when it has an uncollectible loan provision of 29.1% of revenues. Two points are noteworthy: (1) The concern with uncollectibles is not with the size of the provision, but with how much uncertainty there is in the amount of the provision (a high mean with a low standard deviation is not a concern, but a high mean with a high standard deviation is a concern) and (2) revenues represent interest revenues on loans, whereas the provision for uncollectibles includes both unpaid principal and interest (thus, the 29.1% provision does not mean that the firm experiences defaults on 29.1% of its customers each year). Given that loans are nearly 700% of revenues and the provision for uncollectible loans is 29% of revenues, it implies a roughly 4% loan loss provision. The cash flow from operations to capital expenditures ratio is high because of the low capital intensity of this firm.

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Firm (4) also is likely to be a financial services firm because it has a high proportion of cash and marketable securities among its assets and a high proportion of liabilities in its capital structure. This balance sheet structure is typical of the insurance company, Allstate Insurance. Allstate receives cash from policyholders each period as premium revenues. It pays out the cash to policyholders as they make insurance claims. There is a lag between the receipt and disbursement of cash, which for a property and casualty insurance company can span periods up to several years. Allstate invests the cash in the interim to generate a return. The high proportion of current liabilities represents Allstate's estimate of the amount of future claims arising from insurance coverage in force in the current and previous periods. We ask students at this point to comment on the quality of earnings of an insurance company. Our objective is to get students to see the extent of estimates that go into recognizing claims expenses in a particular period. Claims made from accidents or injuries during the current year related to insurance in force during that year require relatively little estimation. However, policyholders may sustain a loss during the current period but not file a claim immediately. Also, estimating the cost of a claim may present difficulties if the claim amount is difficult to estimate (such as with malpractice insurance) or if policyholders contest the amount Allstate is willing to pay and the case goes through adjudication. Thus, the potential for low quality earnings is present with insurance companies. We then point out that the amount shown for other assets represents the unamortized portion of the cost of writing a new policy (costs of investigating new policyholders to assess risk levels, commissions paid to insurance agents for writing the new policy, and filing fees with state insurance regulators). We ask why insurance companies do not write off this amount in the year of initiating the policy. The explanation is one of matching. Insurance companies recognize premium revenues over several future periods and should match both policy initiation costs and claims costs against these revenues. The cash flow from operations to capital expenditures ratio is high because of the low capital intensity of this firm.

Four firms report R&D expenditures: Firm (1), Firm (2), Firm (5), and Firm (12). Dupont, Hewlett-Packard, Merck, and Procter & Gamble will incur costs to discover new technologies or to develop new products. By far, Firm (2) has the highest R&D expense percentage and the highest profit margin. This firm is Merck. Pharmaceutical companies must invest heavily in new drugs to remain competitive. Also, the drug development process is lengthy, which increases R&D costs. Pharmaceutical companies have patents on most of their drugs, providing such firms with a degree of monopoly power. The demand for most pharmaceuticals is relatively price inelastic because customers need the drugs and because the cost of the drugs is often covered by insurance. The manufacturing process for pharmaceuticals is capital-intensive, in part because of the need for precise measurement of ingredients and in part because of the need for purity. Note that Merck has a relatively high selling and administrative expense percentage. This high percentage reflects the cost of maintaining a sales staff to market products to physicians and hospitals and heavy advertising outlays to stimulate demand from consumers.

Hewlett-Packard, on the other hand, outsources the manufacturing of many of its computer components and therefore does not have as much property, plant, and equipment. Thus, Firm (12) is Hewlett-Packard. We ask students why Hewlett-Packard has such a small proportion of long-term debt in its capital structure. Computer firms experience considerable technological risk related to the introduction of new products by competitors. Products life cycles are short at approximately one to two years. Hewlett-Packard does not want to add financial risk to its already high business (asset side) risk. Also, computer firms have relatively few assets (other than property, plant, and equipment) that can serve as collateral for borrowing. Their most important resources, their technologies and their people, do not show up on the balance sheet. The relatively low profit margin evidences the increasingly commodity nature of most computer products and the intense competition in the industry.

This leaves Firm (1) and Firm (5) as being Dupont and Procter & Gamble, respectively. Firm (5) has a lower cost of sales to revenues percentage and a higher selling and administrative expense to revenues percentage. It also has a higher profit margin compared to Firm (1). Firm (5) is Procter & Gamble. The high profit margin reflects the brand names of Procter & Gamble's products. The high selling and administrative expense percentage results from advertising and other expenditures to stimulate demand and to maintain and enhance brand names. The low cost of sales percentage reflects the relatively low cost of ingredients in most of its products and the high selling prices it can charge. One final clue is that investments in R&D are less critical for a consumer products company than for firms in which technology development is important. Note that Procter & Gamble shows a high percentage for intangibles, the result of goodwill and other intangibles from companies it has acquired.

This leaves Firm (1) as Dupont. Its income statement percentages are similar to those for Hewlett-Packard. It carries more debt than Hewlett-Packard does, related to Dupont's borrowing in order to finance its more capital-intensive operations.

We move next to Pacific Gas & Electric. Utilities are very capital-intensive and carry high levels of debt. Firm (3) displays these characteristics. Note that depreciation and amortization as a percentage of revenues is the highest for this firm, reflective of its capital intensity. Also, its interest expense to revenues percentage is the second highest among these firms, which one would expect from the high levels of debt.

We move next to the two professional service firms, Kelly Services and Omnicom Group. Neither firm will have a high proportion of property, plant, and equipment. Thus, Firms (6), (7), and (9) are possibilities. Kelly Services should have no inventories, and inventories for Omnicom Group should be small, representing advertising work in process. This suggests that Firm (7) and Firm (9) are the most likely candidates. One would expect the value added by employees of Kelly (temporary help services) to be less than that of Omnicom (creative advertising services). Thus, Firm (7) is Kelly and Firm (9) is Omnicom. Another clue that Firm (7) is Kelly is that receivables relative to operating revenues indicate a turnover of 6.4 (100.0%/15.7%) times per year and current liabilities relative to

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operating expenses indicate a turnover of 8.0 (82.5%/10.3%) times per year. One would expect faster turnovers for a temporary help business that pays its employees more regularly for temporary work done. The corresponding turnovers for Firm (9) are 2.3 (100.0%/43.2%) and 1.2 (87.4%/73.0%). The turnovers for Omnicom are difficult to interpret because its operating revenues represent the commission and fee earned on advertising work, whereas accounts receivable represent the full amount (media time plus commission or fee) billed to clients and accounts payable represent the full amount payable to various media. The higher percentages for receivables and current liabilities for Firm (9) indicate the agency nature of advertising firms. Firm (9) shows a relatively high proportion for intangibles, consistent with recognizing goodwill in Omnicom's acquisition of other marketing services firms in recent years. The surprising result is that the cash flow from operations to capital expenditures ratio for Kelly is so low. Given its low capital intensity, one would expect a high ratio. The explanation relates to its very low profitability, which leads to low cash flow from operations.

We move next to the fast-food restaurant, McDonald's. The firm should have inventories, but those inventories should turn over rapidly. The remaining firm with the lowest inventory percentage is Firm (11), representing McDonald's. Note that the firm has a high proportion of its assets in property, plant, and equipment. McDonald's owns its company-operated restaurants and owns but leases other restaurants to its franchisees. The relatively high profit margin percentage results from McDonald's dominance in its market and from its brand name.

We are left with two unidentified firms in *Text* Exhibit 1.23, Firm (6) and Firm (8). They are Best Buy and Abercrombie & Fitch, respectively. Both of these firms have inventories. Firm (8) has a substantially lower cost of sales percentage, a substantially higher selling and administrative percentage, and a higher profit margin compared to Firm (6). Abercrombie & Fitch sells brand name clothing products with a degree of fashion emphasis, whereas Best Buy sells electronic products with near-commodity status at low prices. One would expect much greater gross profits on sales of fashion apparel than on commodity-like electronic and appliance products. However, the cost of retail store space for Best Buy should be less than that of Abercrombie & Fitch because the latter firm tends to locate in malls. Thus, Firm (6) is Best Buy and Firm (8) is Abercrombie & Fitch.

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**Exhibit 1.C—(Problem 1.11) (Text Exhibit 1.23)**

	<b>E.I. du Pont de Nemours 1</b>	<b>Merck 2</b>	<b>Pacific Gas &amp; Electric 3</b>	<b>Allstate 4</b>	<b>P&amp;G 5</b>	<b>Best Buy 6</b>	<b>Kelly Services 7</b>	<b>A&amp;F 8</b>	<b>Omnicom Group 9</b>	<b>HSBC Finance 10</b>	<b>McDonald's 11</b>	<b>HP 12</b>
<b>BALANCE SHEET</b>												
Cash & marketable securities	11.6%	23.0%	9.2%	362.6%	6.0%	1.1%	1.6%	14.7%	8.3%	27.3%	8.8%	11.6%
Receivables	18.2	48.4	25.0	47.7	8.9	4.1	15.7	2.7	43.2	697.5	4.0	16.8
Inventories	17.8	9.6	2.9	—	8.7	10.6	—	10.5	5.0	—	0.5	5.3
Property, plant, and equipment, at cost	87.8	101.2	272.3	10.3	46.4	15.4	6.9	66.1	13.1	3.2	132.4	18.3
Accumulated depreciation	<u>(52.8)</u>	<u>(50.9)</u>	<u>(92.8)</u>	<u>(6.7)</u>	<u>(21.8)</u>	<u>(6.1)</u>	<u>(3.7)</u>	<u>(26.6)</u>	<u>(7.7)</u>	<u>(1.3)</u>	<u>(46.3)</u>	<u>(8.5)</u>
Property, plant, and equipment, net	35.0	50.3	179.5	3.6	24.6	9.3	3.1	39.5	5.4	1.9	86.1	9.8
Intangibles	15.2	8.2	—	2.8	112.8	6.0	2.6	—	55.7	40.9	9.5	34.7
Other assets	<u>15.8</u>	<u>58.4</u>	<u>60.5</u>	<u>120.7</u>	<u>9.5</u>	<u>4.1</u>	<u>4.7</u>	<u>12.9</u>	<u>12.0</u>	<u>26.7</u>	<u>12.2</u>	<u>22.0</u>
<b>Total assets</b>	<b><u>113.7%</u></b>	<b><u>197.9%</u></b>	<b><u>277.1%</u></b>	<b><u>537.5%</u></b>	<b><u>170.6%</u></b>	<b><u>35.2%</u></b>	<b><u>27.8%</u></b>	<b><u>80.5%</u></b>	<b><u>129.6%</u></b>	<b><u>794.3%</u></b>	<b><u>121.0%</u></b>	<b><u>100.2%</u></b>
Current liabilities	30.5%	60.0%	51.2%	391.7%	39.1%	18.7%	10.3%	12.7%	73.0%	122.1%	10.8%	37.5%
Long-term debt	24.0	16.5	70.1	19.4	26.1	2.5	0.9	2.8	22.9	565.5	43.3	12.2
Other long-term liabilities	36.9	42.7	88.9	51.3	25.5	3.6	2.7	12.8	7.4	20.2	10.0	15.1
Shareholders' equity	<u>22.4</u>	<u>78.7</u>	<u>66.9</u>	<u>75.1</u>	<u>79.8</u>	<u>10.3</u>	<u>13.9</u>	<u>52.1</u>	<u>26.4</u>	<u>86.5</u>	<u>56.9</u>	<u>35.4</u>
<b>Total Liabilities and Shareholders' Equity</b>	<b><u>113.7%</u></b>	<b><u>197.9%</u></b>	<b><u>277.1%</u></b>	<b><u>537.5%</u></b>	<b><u>170.6%</u></b>	<b><u>35.2%</u></b>	<b><u>27.8%</u></b>	<b><u>80.5%</u></b>	<b><u>129.6%</u></b>	<b><u>794.3%</u></b>	<b><u>121.0%</u></b>	<b><u>100.2%</u></b>
<b>INCOME STATEMENT</b>												
Operating revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales (excluding depreciation) or operating expenses	(75.6)	(23.4)	(60.7)	(91.6)	(49.2)	(75.6)	(82.5)	(33.3)	(87.4)	(29.1)	(63.3)	(76.4)
Depreciation and amortization	(4.5)	(6.8)	(12.6)	(0.9)	(3.9)	(1.8)	(0.8)	(5.1)	(1.8)	(1.7)	(5.1)	(4.2)
Selling and administrative	(6.8)	(24.1)	—	(10.7)	(23.9)	(18.2)	(15.3)	(49.4)	—	(25.0)	(4.9)	(6.0)
Research and development	(4.4)	(20.1)	—	—	(2.6)	—	—	—	—	—	—	(2.5)
Interest (expense)/income	(1.2)	(1.1)	(4.8)	21.0	(1.7)	(0.2)	—	0.3	(0.6)	(32.7)	(2.2)	(0.6)
Income taxes	(1.2)	(8.4)	(3.3)	(6.9)	(5.1)	(1.5)	(0.5)	(5.0)	(4.1)	(3.7)	(7.8)	(1.5)
All other items, net	<u>—</u>	<u>16.7</u>	<u>(10.6)</u>	<u>4.2</u>	<u>0.7</u>	<u>(0.5)</u>	<u>(0.1)</u>	<u>—</u>	<u>1.2</u>	<u>(3.3)</u>	<u>1.7</u>	<u>(2.1)</u>
<b>Net income</b>	<b><u>6.3%</u></b>	<b><u>32.7%</u></b>	<b><u>8.1%</u></b>	<b><u>15.2%</u></b>	<b><u>14.3%</u></b>	<b><u>2.2%</u></b>	<b><u>0.8%</u></b>	<b><u>7.4%</u></b>	<b><u>7.5%</u></b>	<b><u>4.5%</u></b>	<b><u>18.3%</u></b>	<b><u>6.7%</u></b>
Cash flow from operations/capital expenditures	1.6	5.1	0.8	18.7	4.6	1.4	1.6	1.3	6.6	100.9	2.8	3.6

**1.12 Effect of Industry Characteristics on Financial Statement Relations: Global Perspective.** There are various approaches to this problem. One approach begins with a particular company, identifies unique financial characteristics (for example, steel companies have a high proportion of property, plant, and equipment among their assets), and then searches the common-size financial data to identify the company with that unique characteristic.

Another approach begins with the common-size data, identifies unusual financial statement relationships [for example, Firm (12) has a high proportion of cash, marketable securities, and receivables among its assets], and then looks over the list of companies to identify the one most likely to have that unusual financial statement relationship. This teaching note employs both approaches. All of the data are scaled by total revenues (except for the final data item, which is cash flow from operations over capital expenditures); so throughout this discussion when we refer to a “percentage,” it is a percentage of revenues. The data from *Text* Exhibit 1.24 in the text, with company names as column headings, are presented at the end of this solution in Exhibit 1.D.

The high proportions of cash, marketable securities, and receivables for Firm (1) suggest that it is Fortis, the Dutch insurance and banking company. Insurance companies receive cash from premiums each year and invest the funds in various investment vehicles until the money is needed to pay insurance claims. They recognize premium revenue from the cash received and investment income from investments each year. They must match against this revenue an appropriate portion of the expected cost of insurance claims from policies in force during the year. Fortis includes this amount in *Text* Exhibit 1.24 on the line labeled “Operating Expenses.” Operating revenues also include interest revenue on loans made. One might ask why Fortis has such a high proportion of financing in the form of current liabilities. This balance sheet category includes the estimated cost of claims not yet paid from insurance in force. It also includes deposits by customers in its banks. One also might ask what types of quality of earnings issues arise for a company such as Fortis. One issue relates to the measurement of insurance claims expense each period. The ultimate cost of claims will not be known with certainty until customers make claims and settlement is made. Prior to that time, Fortis must estimate what that cost will be. The need to make such estimates creates the opportunity to manage earnings and lowers the quality of earnings. Another issue relates to estimated uncollectible loans. Fortis recognizes interest revenue from loans each year and must match against this revenue the cost of any loans that will not be repaid. The need to make such estimates also provides management with an opportunity to manage earnings and, therefore, lowers the quality of earnings.

Firm (6) stands out because it is the only other firm [besides Fortis, Firm (1)] with zero inventory. Firm (6) also has an unusually high proportion of assets in receivables and in current liabilities. The pattern is typical for a professional service firm, such as an advertising agency, which creates and sells advertising copy for clients (for which it has a receivable) and purchasing time and space from various media to display it (for which it has a current liability). Additional evidence that

Firm (6) is Interpublic Group is the high percentage for intangibles, representing goodwill from acquisitions.

Four firms have R&D expenses: Firms (3), (7), (9), and (12). These are Toyota Motor, Sun Microsystems, Roche Holding, and Nestlé, respectively.

Roche Holding and Sun Microsystems are more technology-oriented and, therefore, likely to have higher percentages of R&D compared to Toyota and Nestlé. This suggests that they are Firms (9) and (7) in some combination. Firm (9) has a lower cost of sales percentage than Firm (7), suggesting that Firm (9) is Roche Holdings, because patented pharmaceutical products generally sell at much higher markups and generate higher profit margins than more competitively priced computer networking equipment sold by Sun Microsystems. It is interesting to observe the relatively small cost of goods sold to sales percentage for Roche. The manufacturing cost of pharmaceutical products includes primarily the cost of the chemical raw materials, which machines combine into various drugs. Pharmaceutical firms must price their products significantly above manufacturing costs to recoup their investments in R&D. The inventories of Firm (9) turn over more slowly at 2.3 times per year (28.5/12.2) than those of Firm (7) at 10.9 times per year (53.5/4.9). The inventory turnover of Roche is consistent with the making of fewer production runs on each pharmaceutical product to gain production efficiencies. Firm (9) also is more capital-intensive compared to Firm (7). This suggests that Firm (7) is Sun Microsystems and Firm (9) is Roche Holdings. Sun uses only 11.6 cents in fixed assets for each dollar of sales generated. These ratios are consistent with Sun's strategy of outsourcing most of its manufacturing operations. The manufacture of pharmaceuticals is highly automated, consistent with the slower fixed asset turnover of Roche. Also note that Sun has very little long-term debt in its capital structure. Computer products have short product life cycles. Lenders are reluctant to lend for a long period because of the concern for technological obsolescence. Computer companies that outsource their production also have few assets that can serve as collateral for long-term borrowing.

This leaves Firms (3) and (12) as Nestlé and Toyota Motor in some combination. Firm (3) has a larger amount of receivables relative to sales than Firm (12) does, consistent with Toyota Motor providing financing for its customers' purchases of automobiles. Nestlé will have receivables from wholesalers and distributors of its food products, but not to the extent of the multi-year financing of automobiles. The inventory turnover of Firm (12) is 6.0 times a year (51.3%/8.5%), whereas the inventory turnover of Firm (3) is 11.0 times a year (76.2%/6.9%). At first, one might expect a food processor to have a much higher inventory turnover than an automobile manufacturer, suggesting that Firm (12) is Toyota Motor and Firm (3) is Nestlé. However, Toyota Motor has implemented just-in-time inventory systems, which speeds its inventory turnover. Nestlé tends to manufacture chocolates to meet seasonal demands and therefore carries inventory somewhat longer than one might expect. Firm (12) has a much higher percentage of selling and administrative expense to sales than Firm (3) does. Both of these firms advertise their products heavily. It is difficult to know why one would have a substantially different percentage than the other. The profit margin of Firm (12) is

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substantially higher than that of Firm (3). The auto industry is more competitive than at least the chocolate side of the food industry. However, other food products encounter extensive competition. Firm (3) has a high proportion of intercorporate investments. Japanese companies tend to operate in groups, called *kieretsu*. The members of the group make investments in the securities of other firms in the group. This would suggest that Firm (3) is Toyota Motor. Another characteristic of Japanese companies is a heavier use of debt in their capital structures. One of the members of these Japanese corporate groups is typically a bank, which lends to group members as needed. With this more-or-less assured source of funds, Japanese firms tend to take on more debt. Although the ratios give somewhat confusing signals, Firm (12) is Nestlé and Firm (3) is Toyota Motor.

Firms (2), (4), (5), (8), and (10) are fixed asset-intensive, with net fixed assets exceeding 50% of revenues, but it is difficult to clearly distinguish between them. Among the industries represented, at least six rely extensively on fixed assets to deliver products and services: steel manufacturing (Sumitomo Metal), telecommunications (Deutsche Telekom), hotel chains (Accor), electric utilities (E.ON), retail store chains (Marks & Spencer and Carrefour), and auto manufacturing (Toyota). We have already identified Toyota, so we need to distinguish only between the other five.

Of those five firms, Firms (2), (4), and (8) have made the largest investments in gross fixed assets, all of which exceed 100% of revenues. Electric utilities, steel manufacturers, and telecommunication firms most heavily utilize fixed assets in the delivery of their products and services. Within these three industries, steel manufacturers will likely have the most significant inventories; so Firm (2) is Sumitomo Metal. Firm (8) carries a higher proportion of long-term debt and is depreciating its assets more slowly than Firm (4) is. Electricity-generating plants are likely to support more leverage and are likely to have longer useful lives compared to the more technology-based fixed assets needed for distribution of telecommunication services. This would suggest that Firm (4) is Deutsche Telekom and Firm (8) is E.ON. The difference in the accounts receivable turnovers is somewhat surprising. It is not clear why the accounts receivable turnover for Deutsche Telekom is significantly faster than that of its German counterpart E.ON.

The remaining firms are (5), (10), and (11), and they represent the hotel group Accor and the retail chains Marks & Spencer and Carrefour. Clearly, Firm (5) is not a retailer because it has very little inventory, which indicates it is Accor, the hotel group.

Comparing Firm (10) and Firm (11), Firm (11) is distinguished by its high cost of goods sold percentage and small profit margin percentage. This pattern suggests commodity products with low value added. This characterizes a supermarket/grocery business. Firm (11) is Carrefour. Its combination of a rapid receivables turnover of 15.2 times per year ( $100/6.6$ ) and rapid inventory turnover of 10.0 times per year ( $77.9/7.8$ ) also are consistent with a grocery business. The remaining firm is Firm (10), which is Marks & Spencer, the department store chain. Compared to Firm (11), which is Carrefour, Firm (10) has a lower cost of sales percentage but a higher selling and administrative expense percentage and higher profit margins, consistent with it being a department store chain rather than a grocery chain.

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**Exhibit 1.D—(Problem 1.12) (Text Exhibit 1.24)**

	Fortis 1	Sumitomo Metal 2	Toyota Motor 3	Deutsche Telekom 4	Accor 5	Inter- public Group 6	Sun Micro- systems 7	E.ON 8	Roche Holding 9	Marks & Spencer 10	Carrefour 11	Nestlé 12
<b>BALANCE SHEET</b>												
Cash & marketable securities	313.7%	2.2%	21.8%	4.9%	16.2%	32.7%	19.5%	17.9%	43.4%	4.7%	6.0%	6.5%
Receivables	412.9	8.4	48.8	12.0	17.0	69.6	21.8	38.8	20.4	6.9	6.6	12.2
Inventories	—	27.7	6.9	2.1	1.3	—	4.9	5.8	12.2	5.9	7.8	8.5
Property, plant, and equipment, at cost	6.6	186.9	66.2	195.3	92.8	23.2	35.2	134.7	62.9	82.6	34.5	42.0
Accumulated depreciation	<u>(2.8)</u>	<u>(125.4)</u>	<u>(36.5)</u>	<u>(127.9)</u>	<u>(36.9)</u>	<u>(15.2)</u>	<u>(23.6)</u>	<u>(76.0)</u>	<u>(24.9)</u>	<u>(29.3)</u>	<u>(17.7)</u>	<u>(22.8)</u>
Property, plant, and equipment, net	3.8%	61.4%	29.7%	67.4%	55.9%	8.1%	11.6%	58.7%	38.0%	53.3%	16.8%	19.2%
Intangibles	2.4	—	—	87.5	31.6	46.3	27.2	26.5	32.3	4.4	14.1	34.1
Other assets	<u>66.2</u>	<u>33.2</u>	<u>16.2</u>	<u>25.9</u>	<u>25.5</u>	<u>17.5</u>	<u>18.4</u>	<u>28.5</u>	<u>12.7</u>	<u>4.9</u>	<u>7.7</u>	<u>16.1</u>
<b>Total assets</b>	<u>829.8%</u>	<u>133.0%</u>	<u>123.5%</u>	<u>199.7%</u>	<u>147.5%</u>	<u>174.1%</u>	<u>103.3%</u>	<u>176.2%</u>	<u>158.8%</u>	<u>80.1%</u>	<u>59.0%</u>	<u>96.6%</u>
Current liabilities	120.3%	18.3%	45.4%	40.3%	70.2%	98.8%	40.8%	40.6%	25.3%	25.5%	32.2%	30.2%
Long-term debt	630.8	40.9	22.8	8.8	24.9	25.7	9.1	21.3	6.2	23.4	10.8	5.8
Other long-term liabilities	55.6	24.7	10.1	80.7	6.3	14.2	13.1	43.5	15.0	8.1	3.6	10.7
Shareholders' equity	<u>23.1</u>	<u>49.0</u>	<u>45.1</u>	<u>69.9</u>	<u>46.0</u>	<u>35.6</u>	<u>40.3</u>	<u>70.8</u>	<u>112.4</u>	<u>23.2</u>	<u>12.4</u>	<u>50.0</u>
<b>Total Liabilities and Shareholders' Equity</b>	<u>829.8%</u>	<u>133.0%</u>	<u>123.5%</u>	<u>199.7%</u>	<u>147.5%</u>	<u>174.1%</u>	<u>103.3%</u>	<u>176.2%</u>	<u>158.8%</u>	<u>80.1%</u>	<u>59.0%</u>	<u>96.6%</u>
<b>INCOME STATEMENT</b>												
Operating revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales (excluding depreciation) or operating expenses	(18.7)	(80.3)	(76.2)	(56.1)	(70.4)	(62.4)	(53.5)	(64.5)	(28.5)	(62.8)	(77.9)	(51.3)
Depreciation and amortization	(0.6)	(6.0)	(5.7)	(17.8)	(5.8)	(2.5)	(3.4)	(5.1)	(3.5)	(4.5)	(2.1)	(2.4)
Selling and administrative	(4.8)	(1.4)	(5.9)	(15.9)	—	(26.4)	(25.1)	(22.7)	(20.5)	(24.7)	(16.3)	(30.2)
Research and development	—	—	(3.6)	—	—	—	(13.4)	—	(18.5)	—	—	(1.8)
Interest (expense)/income	(69.7)	(0.3)	0.5	(4.0)	(1.1)	(1.7)	1.2	(1.4)	0.5	(1.8)	(0.6)	(1.0)
Income taxes	(1.1)	(5.1)	(3.5)	(2.3)	(3.5)	(2.2)	(1.5)	(0.1)	(6.9)	(2.2)	(0.8)	(3.4)
All other items, net	<u>(0.4)</u>	<u>—</u>	<u>0.9</u>	<u>(0.1)</u>	<u>(11.3)</u>	<u>(0.5)</u>	<u>0.2</u>	<u>1.1</u>	<u>0.1</u>	<u>1.6</u>	<u>0.1</u>	<u>7.6</u>
<b>Net income</b>	<u>4.7%</u>	<u>6.8%</u>	<u>6.5%</u>	<u>3.8%</u>	<u>7.9%</u>	<u>4.2%</u>	<u>4.5%</u>	<u>7.3%</u>	<u>22.6%</u>	<u>5.6%</u>	<u>2.3%</u>	<u>17.3%</u>
Cash flow from operations/capital expenditures	(5.5)	1.1	2.1	2.3	2.0	6.3	3.0	1.7	4.0	2.7	1.8	2.2

**1.13 Value Chain Analysis and Financial Statement Relations.** There are various approaches to this problem. One approach begins with a particular company, identifies unique financial characteristics (for example, profit margin potential), and then searches the common-size financial data to identify the company with that unique characteristic.

Another approach begins with the common-size data, identifies unusual financial statement relationships (for example, R&D intensity), and then looks over the list of companies to identify the one most likely to have that unusual financial statement relationship. This teaching note employs both approaches. All of the data are scaled by total revenues (except for the final data item, which is cash flow from operations over capital expenditures); so throughout this discussion when we refer to a “percentage,” it is a percentage of revenues. The data from *Text* Exhibit 1.25 in the text, with company names as column headings, are presented at the end of this solution in Exhibit 1.E.

Four Firms (1), (3), (4), and (7) incur R&D expenditures, and three do not. Wyeth, Amgen, Mylan, and Johnson & Johnson engage in research to develop new products. Thus, they represent these four numbered firms in some combination. One would expect the firms enjoying patent protection (Wyeth and Amgen) to have the highest profit margins (that is, net income divided by sales). This would suggest that Firm (1) is neither Wyeth nor Amgen. Also, Firm (1) has the highest cost of goods sold percentage of the four companies and its R&D percentage is the lowest, which are inconsistent with this being Wyeth or Amgen. Products with patent protection should have the lowest cost of goods sold percentages (resulting from high markups on cost to arrive at selling prices). Thus, following another line of logic, the need to continually discover new drugs should lead Wyeth and Amgen to have the highest R&D percentages, which would be Firm (3) or Firm (4), as discussed below.

With this being the case, the other two firms—Firm (1) and Firm (7)—are Mylan and Johnson & Johnson in some combination. The brand recognition of Johnson & Johnson’s products should give it a high profit margin. Price competition among generic firms should give Mylan a lower profit margin. This reasoning would suggest that Johnson & Johnson is Firm (7) and Mylan is Firm (1). Firm (7) also has higher selling and administrative expenses versus Firm (1), consistent with Johnson & Johnson. The low profit margin of Mylan is the result of major ethical drug firms now competing aggressively in the generic market.

This leaves Firms (3) and (4) as Wyeth and Amgen in some order. The biotechnology industry is significantly less mature than the ethical drug industry. Few biotechnology drugs have received FDA approval, and research to develop new drugs is intensive. Given the few biotechnology drugs available in the market, Amgen’s profit margin as well as its R&D expense percentage should be higher than those of Wyeth. Thus, Firm (3) is Amgen and Firm (4) is Wyeth. Wyeth’s higher selling and administrative expense percentage results from its need to maintain a sales force. The biotechnology products of Amgen are fewer in number and at this point are essentially pulled through the distribution process by customer demand. Thus, it has less need for a sales force.

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We are now left with Covance, Cardinal Health, and Walgreens and Firms (2), (5), and (6). Covance will have very low inventories, whereas Cardinal Health (wholesaler) and Walgreens (retailer) will have larger inventories. Thus, Firm (5) is Covance. This firm will need property, plant, and equipment to conduct the testing of new drugs. Of the remaining two firms, Cardinal Health and Walgreens, Walgreens will likely have a higher proportion of assets in property, plant, and equipment for retail space. Cardinal Health needs only warehousing facilities for its drug wholesaling activities. Thus, Firm (6) is Walgreens and Firm (2) is Cardinal Health. Advertising expenditures by Walgreens drive up its selling and administrative expense percentage relative to that of Cardinal Health. Walgreens accepts cash and third-party credit cards for sales; therefore, it will have less receivables than Cardinal Health, which sells to businesses on credit. Also notice that Cardinal Health, as a wholesaler, has a very high cost of sales percentage relative to Walgreens and all other firms in this set.

It is interesting to note that the highest profit margins in the pharmaceutical industry occur with the upstream activities (discovery of new drugs) instead of the downstream activities (wholesaling and retailing). It also is interesting that the profit margin of Covance lies between the high profit margins of the creators of new drugs and the low profit margins of those firms involved in distribution. Covance must possess some technical expertise in order to offer drug-testing services, thus providing the rationale for a higher profit margin than those achieved by the wholesalers and retailers. The higher profit margin for Walgreens over Cardinal Health is probably attributable to brand name recognition and the large number of retail stores nationwide. The wholesaling function of Cardinal is low value added. The pharmaceutical benefit management services are somewhat differentiable but quickly copied by competitors.

**Exhibit 1.E—(Problem 1.13) (Text Exhibit 1.25)**

	Mylan Laboratories	Cardinal Health	Amgen	Wyeth	Covance	Walgreens	J&J
	1	2	3	4	5	6	7
<b>BALANCE SHEET</b>							
Cash & marketable securities	12.5%	1.9%	63.7%	63.7%	12.1%	4.1%	20.1%
Receivables	22.7	5.7	13.8	16.0	18.7	3.9	15.2
Inventories	20.7	7.2	13.8	13.1	3.7	10.7	7.9
Property, plant, and equipment, at cost	34.2	3.9	66.6	73.9	74.2	22.6	43.0
Accumulated depreciation	<u>(13.5)</u>	<u>(2.0)</u>	<u>(27.4)</u>	<u>(24.9)</u>	<u>(27.1)</u>	<u>(5.5)</u>	<u>(20.4)</u>
Property, plant, and equipment, net	20.7	1.9	39.2	49.0	47.1	17.1	22.5
Intangibles	109.3	6.1	95.5	20.5	5.8	2.3	43.4
Other assets	<u>16.8</u>	<u>2.5</u>	<u>16.9</u>	<u>30.5</u>	<u>8.5</u>	<u>1.6</u>	<u>24.0</u>
<b>Total assets</b>	<u>202.6%</u>	<u>25.2%</u>	<u>242.9%</u>	<u>192.8%</u>	<u>96.0%</u>	<u>39.7%</u>	<u>133.2%</u>
Current liabilities	30.1%	11.5%	32.6%	30.0%	25.2%	10.7%	32.7%
Long-term debt	100.5	3.3	61.2	47.4	—	3.7	12.7
Other long-term liabilities	19.4	1.7	13.3	31.5	5.4	2.6	21.1
Shareholders' equity	<u>52.6</u>	<u>8.8</u>	<u>135.9</u>	<u>84.0</u>	<u>65.4</u>	<u>22.7</u>	<u>66.7</u>
<b>Total Liabilities and Shareholders' Equity</b>	<u>202.6%</u>	<u>25.2%</u>	<u>242.9%</u>	<u>192.8%</u>	<u>96.0%</u>	<u>39.7%</u>	<u>133.2%</u>
<b>INCOME STATEMENT</b>							
Operating Revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales (excluding depreciation) or operating expenses	(59.7)	(94.4)	(15.3)	(27.4)	(62.5)	(72.2)	(29.0)
Depreciation and amortization	(8.3)	(0.4)	(7.2)	(4.1)	(3.9)	(1.5)	(4.4)
Selling and administrative	(12.2)	(3.1)	(20.1)	(25.9)	(13.7)	(21.1)	(29.3)
Research and development	(6.2)	—	(20.2)	(14.8)	—	—	(12.2)
Interest (expense)/income	(6.9)	(0.2)	0.2	(0.1)	0.4	(0.1)	(0.1)
Income taxes	(2.7)	(0.5)	(7.0)	(8.4)	(4.3)	(1.8)	(6.2)
All other items, net	<u>0.1</u>	<u>—</u>	<u>(2.5)</u>	<u>(0.1)</u>	<u>(5.3)</u>	<u>—</u>	<u>1.6</u>
<b>Net income</b>	<u>4.1%</u>	<u>1.3%</u>	<u>28.0%</u>	<u>19.3%</u>	<u>10.5%</u>	<u>3.2%</u>	<u>20.3%</u>
Cash flow from operations/capital expenditures	2.3	3.0	8.9	4.4	4.0	2.2	4.9

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**Integrative Case 1.1: Starbucks**

- I. Objectives
  - A. Identify the economics characteristics of the specialty coffee retail industry and Starbucks' strategy for competing in this industry as background for the integrative case on Starbucks used throughout the book.
  - B. Review the purpose, format, terminology, and accounting principles underlying the balance sheet, income statement, and statement of cash flows.
  - C. Introduce common-size and percentage-change income statements and balance sheets and the insights such statements provide.
  - D. Establish an understanding of Starbucks' business so that it can be used as a case throughout a course to illustrate all of the steps of the six-step analysis and valuation framework. Our experience suggests that Starbucks works well because it is a company that nearly all students easily understand and find interesting.
- II. **Teaching Strategy**—We have taught this case with two approaches. If an opportunity exists to distribute the case prior to the first class, we give students the solutions to the questions involving the balance sheet, income statement, statement of cash flows, and relations between financial statements. We ask them to review these parts on their own and to prepare solutions to the questions under the sections labeled “Industry and Strategy Analysis” and “Interpreting Financial Statement Relationships.” We devote the first class to discussing these two sections of the case. If we cannot distribute the case ahead of time, we devote approximately three hours of class time to discuss the entire case. Alternatively, you can choose to emphasize particular questions based on the amount of time available and refer students to the solution for the remaining parts.

***Note to Instructors:***

Starbucks is a good company to use for classroom discussion and demonstration of the techniques throughout this book. Students generally relate easily and readily to Starbucks because they are familiar with Starbucks' coffee shops and products. As a company and a set of financial statements, Starbucks is a good setting for illustrating the techniques of analysis, accounting quality assessment, forecasting, and valuation because the business model is straightforward and not complex. This case relies on fiscal 2012 data; so in following years, you can easily bring students up to date by distributing more recent financial statements and numbers and types of stores open. These data are readily available from Starbucks' website or from the SEC.

### **Industry and Strategy Analysis**

- a. Porter's five forces applied to the specialty coffee retail industry:
1. **Buyer Power:** Buyer power for specialty coffees is less than that for commodity coffees because consumers view specialty coffees as higher quality and more unique. These characteristics of specialty coffees increase consumers' willingness to pay more for such coffees and make them less price-sensitive. Combining the specialty coffee with a pleasant café or coffee shop setting (the "*Starbucks Experience*") in which consumers purchase and enjoy the coffee decreases consumers' price sensitivity still further. Thus, buyer power appears to be relatively low.
  2. **Supplier Power:** Suppliers of the high-quality Arabica coffee beans used in specialty coffees have a bit more power over their customers because of their customers' need for such coffee beans. Commodity coffee beans are not an attractive alternative for such customers. However, specialty coffee beans are produced by suppliers around the world. Worldwide sourcing means that there are many suppliers of similar specialty coffee beans, which give purchasers such as Starbucks an ability to switch suppliers to gain an advantage. Specialty coffee beans are even traded on commodity market exchanges. Moreover, cooperative or collusive association of green coffee bean growers that controls the supply or the price of beans exists. Thus, supplier power is low.
  3. **Rivalry among Existing Firms:** There are many direct competitors in the specialty coffee retail industry. The competitors span a wide range of sizes and business approaches, including large-scale fast-food chains (for example, McDonald's), doughnut chains (for example, Tim Hortons, Dunkin Donuts, and Krispy Kreme), coffee shop chains (for example, Panera Bread, Caribou Coffee, and Peet's Coffee & Tea), and local coffee shops and cafes. The issue for Starbucks is whether the "*Starbucks Experience*" sufficiently differentiates the firm from competitors whose specialty coffees might be of equal quality. Rivalry among firms appears to be high.
  4. **Threat of New Entrants:** No barriers to entry exist. Opening coffee shops requires very little capital, technology, or expertise. In addition to new coffee shop chains springing up, established retail food chains have the ability to add specialty coffees to their menus, as McDonald's is doing aggressively with the McCafé initiative. In addition, it is now common for gas station chains to offer specialty coffee kiosks in their convenience shops. Starbucks' primary competitive advantage, relative to new entrants, is the advantage of an established brand name. It also has a scale advantage because it has saturated the United States with retail stores and is growing its business in other countries (further evidence of the lack of barriers to entry). Thus, the threat of new entrants appears to be high.

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5. **Threat of Substitutes:** There are numerous beverage substitutes to specialty coffees, which make the threat of substitutes high. Substitute beverages span a wide range, including soft drinks (Coca-Cola and PepsiCo), teas, waters, juices, sports drinks, beer, and wine. However, there are fewer substitutes for the “*Starbucks Experience*,” which is a competitive advantage relative to the threat of substitutes. Nevertheless, the threat of substitutes appears to be high.
- b. Starbucks combines the sale of specialty coffees and other high-quality beverages with friendly and competent service in a unique setting in which customers can enjoy the beverages. This combination has allowed the firm to create the “*Starbucks Experience*,” which differentiates it from direct competitors. Its market saturation in the United States has permitted the firm to establish a brand name, which it is now exporting to other countries. Its use of licensing arrangements has fostered the rapid growth. Starbucks is now leveraging its brand name by selling coffee beans and ground coffees through grocery stores, warehouse clubs, and food distributors. It also is leveraging its brand name by forming partnerships with other established brand name firms to sell various high-quality beverages. Starbucks appears to be aggressively pursuing multiple avenues to maintain its growth, discourage new entrants, and leverage its brand name.

**Balance Sheet**

- c. Cash includes cash on hand and in checking accounts. Cash equivalents include amounts that a firm can easily convert into cash. Cash equivalents usually have a maturity date of less than three months at the time of purchase so that changes in interest rates have an insignificant effect on their market value. Cash equivalents might include investments in U.S. Treasury bills, commercial paper, and money market funds.
- d. Securities that a firm intends to sell within one year of the balance sheet date appear in Short-Term Investments. Securities that a firm expects to hold for more than one year appear in the noncurrent asset Long-Term Investments. You can use this question to introduce the concepts of trading, available-for-sale, and held-to-maturity security categories, but be aware that this discussion usually requires some time to explain how and why accounting differs for each category. You can defer such discussion to later in the course, particularly when discussing investing activities (Chapter 8).

- e. The accounts receivable arise because Starbucks recognizes revenue earlier than the time it collects cash. It is useful to query students on which specific lines of Starbucks' business create accounts receivable. They will quickly realize that the majority of receivables do *not* arise from company-operated retail store revenues, the vast majority of which are in cash (or cash equivalent credit card sales). The receivables arise primarily from Starbucks specialty business, which includes revenues from licensees and revenues from sales to foodservice accounts and distributions to grocery stores. Because Starbucks is not likely to collect 100% of the amount reported as receivables, it must recognize an expense for estimated uncollectible accounts and reduce gross accounts receivable to the amount it expects to collect in cash. Starbucks reports the balance in the allowance for uncollectible accounts as a subtraction from gross accounts receivable on the balance sheet. Starbucks increases the balance in the allowance account for estimated uncollectible accounts arising from credit sales each year. It reduces the balance in the allowance account for actual customers' accounts deemed uncollectible.
  
- f. The Accumulated Depreciation accounts reports the cumulative depreciation recognized since the firm acquired depreciable assets that appear on the balance sheet. Depreciation Expense reports only the amount of depreciation recognized for a particular accounting period.
  
- g. Deferred tax assets arise when a temporary difference between net income and taxable income provides a future tax benefit to the firm. This occurs (1) when a firm recognizes revenue earlier of tax reporting than for financial reporting (subsequent recognition of the revenue for financial reporting will not give rise to a tax payment) or (2) when a firm recognizes expenses earlier for financial reporting than for tax reporting (subsequent recognition of the expense for tax reporting will reduce income tax payments). Deferred tax liabilities arise when a temporary difference will require a firm to make a tax payment in the future. This occurs (1) when a firm recognizes revenue earlier for financial reporting than for tax reporting (subsequent recognition of the revenue for tax reporting will require the firm to pay taxes) or (2) when a firm recognizes an expense earlier for tax reporting than for financial reporting (subsequent recognition of the expense for financial reporting does not give rise to a tax deduction, thereby increasing taxable income and taxes payable). Note that the classification of deferred taxes on the balance sheet for a particular revenue or expense depends on (1) the likelihood of temporary differences giving rise to a deferred tax asset or a deferred tax liability and (2) the timing of the likely reversal of the temporary difference (less than one year or longer than one year).

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- h. U.S. GAAP require firms to report marketable securities and investments in securities at market value at the end of each accounting period. In some circumstances, U.S. GAAP also requires firms to translate the assets and liabilities of their foreign subsidiaries and branches into U.S. dollars using the current exchange rate. Changes in the valuations of assets and liabilities from these accounting principles give rise to unrealized gains and losses that firms will not realize until they convert the assets into cash or settle their liabilities with cash. The ultimate realized gain or loss depends on the market prices of securities and the exchange rate at the time of sale or settlement. U.S. GAAP does not permit firms to include the unrealized gains or losses in net income; instead, the firm must include them in accumulated other comprehensive income. At the time of sale or settlement, the amount of the gains or losses becomes established and realized. At that time, the firm includes the realized gain or loss in net income. The specific determinants of comprehensive income are covered in greater detail in Chapter 2 and Chapter 8.

**Income Statement**

- i. Revenues from company-owned stores represent the revenues from sale of coffee beverages, food, and other products in the retail stores that Starbucks owns and manages. Revenues from licensing represent various fees that Starbucks receives from retail stores that it does not own or manage. Starbucks likely receives a royalty based on revenues of these stores. It also likely receives revenues for inventory and products sold to the licensees and for various services provided. Revenues from foodservice represent amounts received from the sale of products to grocery stores, warehouse clubs, and food service distributors. Note that Starbucks' income from its partnerships and joint ventures with PepsiCo and Unilever and others appears as "Income from Equity Investees," which we discuss in Solution k below.
- j. Cost of sales likely includes the cost of the raw materials, such as coffee beans, teas, dairy products, sugar, paper products, and similar items that make up Starbucks' products. Occupancy costs include rent, property taxes, insurance, utilities, and maintenance costs of its company-owned stores. Store operating expenses include compensation of its employees working in the company-owned stores, as well as advertising and other marketing expenses.
- k. As indicated in Solution i, the Income of Equity Investees represents Starbucks' share of the earnings of partnerships with PepsiCo and Unilever. In addition, Starbucks is involved in numerous joint ventures to own and operate Starbucks' stores in countries outside the United States. Note that Income from Equity Investees represents Starbucks' share of the bottom line of the income statements of the partnerships, not the top line (that is, the partnerships' revenue). Starbucks reports its investments in these partnerships under "Equity and Other Investments" in the noncurrent assets section of the balance sheet.

**Statement of Cash Flows**

- l. Firms use the accrual basis of accounting in measuring net income. Firms usually recognize revenue at the time of sale of goods and services, not necessarily when they receive cash from customers. Firms attempt to match expenses with the time periods during which they consume economic resources, regardless of when they expend cash. The accrual basis gives a better indication of a firm's operating performance than the cash basis because of the matching of inputs and outputs. Cash flows from operating activities in the statement of cash flows reports the amount of cash received from customers net of amounts paid to suppliers of goods and services.
  
- m. Depreciation and amortization expenses reduce net income but do not require cash expenditures in the year of their recognition. (The cash effect occurred in the year a firm acquired the depreciable or amortizable asset; the firm classified the cash outflow as an investing activity in the statement of cash flows at that time.) The addition adds back to net income the amount subtracted in calculating earnings for the year, in effect zeroing out its effect on cash flow from operations.
  
- n. Net income on the first line of the statement of cash flows includes a subtraction for the cost of sales during each year. Starbucks likely purchases a different amount of inventory than it uses or sells. An increase in inventories means that Starbucks purchased more than it used or sold. Thus, the cash outflow for purchases potentially exceeds cost of sales and requires a subtraction from net income for the additional cash required. Whether additional cash was in fact required in any year depends on the change in accounts payable, discussed next.
  
- o. Accounts payable reflects amounts owed to suppliers for inventory items purchased. Purchases of inventory items increase this liability, and cash payments reduce it. The adjustment for inventory in Solution n converts cost of sales to purchases. The adjustment for accounts payable converts purchases to cash payments to suppliers. A decrease in accounts payable means that Starbucks' cash payments to suppliers during the year exceeded the amounts purchased. Thus, the adjustments for the change in inventories and the change in accounts payable convert cost of sales included in net income to cash payments to suppliers of inventory items.
  
- p. The FASB requires firms to report most changes in investment securities as an investing activity, not an operating activity. The rationale is that firms derive operating cash flows by selling goods or services to customers, not from selling marketable securities.
  
- q. The FASB requires firms to report changes in short-term borrowing as a financing activity, not an operating activity. The rationale is that firms derive operating cash flows by selling goods or services to customers, not by borrowing cash.

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**Relations between Financial Statements**

r. Retained Earnings, October 2, 2011 .....	\$ 4,297
Net Income for Fiscal 2012 .....	1,384
Cash Dividends.....	(513)
Stock Repurchases in Fiscal 2012 (Plug).....	<u>(122)</u>
Retained Earnings, September 30, 2012 .....	<u>\$ 5,046</u>

The fact that net income does not fully explain the change in retained earnings means that Starbucks distributed capital to common shareholders. Starbucks has a recent history paying dividends, but not of repurchasing stock. The dividends are shown on the statement of cash flows, as is the repurchase of common stock (\$549). Starbucks allocates common stock repurchases to paid-in capital and retained earnings, so we plug the remaining difference in retained earnings to stock repurchases. As it turns out, the statement of equity (not provided) actually indicates cash dividends of \$544 and stock repurchases of \$593, split among additional paid-in capital (\$502) and retained earnings (\$91). The differences between these figures and those included above are due to differences between dividends declared (\$544) versus cash actually paid and shown on the statement of cash flows (\$513), indicating that Starbucks must have dividends payable included in liabilities at year end.

s. Property, Plant and Equipment, October 1, 2011 .....	\$ 6,163
Plus Acquisition of Property, Plant and Equipment during 2012 (See Statement of Cash Flows).....	856
Less Acquisition Cost of Property, Plant and Equipment Sold or Retired during 2012 (Plug) .....	<u>(116)</u>
Property, Plant and Equipment, September 30, 2012.....	<u>\$ 6,903</u>
Accumulated Depreciation, October 1, 2011 .....	\$ 3,808
Plus Depreciation Expense during 2012 (See Statement of Cash Flows) .....	550
Less Accumulated Depreciation on Property, Plant and Equipment Sold or Retired during 2012 (Plug).....	<u>(114)</u>
Accumulated Depreciation, September 30, 2012.....	<u>\$ 4,244</u>

Starbucks does not report separately the cost of the property, plant, and equipment sold or retired, nor the amount of accumulated depreciation on the property, plant, and equipment sold, so we must deduce and plug these amounts. For simplicity, the problem instructs students to assume that the total \$550 million is depreciation expense. Starbucks reports in Note 8 that Amortization Expense in 2008 amounted to only \$4.5 million, so depreciation expense is actually \$545.5.

### **Interpreting Financial Statement Relations**

- t. The difficulty with interpreting common-size percentages is that the amounts for a particular account are not independent of the amounts for all other accounts. Note in *Text* Exhibit 1.29 that cash and cash equivalents increased 3.5% in fiscal 2012, while total assets increased by 11.7% during the same year. Many other assets increased at faster rates, thereby causing the common-size percentages for cash and cash equivalents to decline.
- u. Between fiscal 2009 and 2012, current liabilities increased from \$1,581 million to \$2,210 million, while noncurrent liabilities declined from \$939 million to \$895 million. Total shareholders' equity increased significantly between these years, largely due to the large profits recognized (which more than offset the large dividends paid). The decline in short-term and long-term debt as a percentage of total assets is due to the modest increase in total liabilities being outpaced by higher growth rates for equity (and assets).
- v. The proportion of revenue from company-operated stores declined from 83.7% to 79.2%, and the proportion of revenues from both licensing and foodservice increased (although the dollar amounts of revenue from company-operated retail and foodservice increased.) Starbucks has licensed more new stores than it has opened new company-operated stores in recent years in an effort to expand quickly, leading to an increase in the common-size percentage of revenues for licensing.
- w. The main contributing factors for the increase in the net income to revenues percentage (the net profit margin) are decreases in operating expenses, especially cost of sales and store operating expenses (slightly offset by increases in general and administrative expenses). The costs for these items include variable and fixed elements. (Costs that are somewhat fixed over the short-run include occupancy costs such as rent expense and store operating costs such as wages and salaries.) As Starbucks has grown its revenues, these costs have seemingly increased at slower rates, resulting in a declining expense percentage for these two expense items. This is consistent with the revenue growth coming from licensing, as noted in the percentage change columns, and such revenue streams are less likely to be associated with increases in fixed costs.

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**Case 1.2: Nike: Somewhere between a Swoosh and a Slam Dunk**

- I. Objectives
- A. Review the purpose, format, terminology, and accounting principles underlying the balance sheet, income statement, and statement of cash flows.
  - B. Introduce common-size and percentage-change income statements and balance sheets and the insights that such statements provide.
- II. Teaching Strategy—We have taught this case with two approaches. If an opportunity exists to distribute the case prior to the first class session, we give students the solution to the questions involving the income statement, balance sheet, statement of cash flows, and relations between financial statement items. We ask them to review these parts on their own and to prepare the questions under the section labeled “Interpreting Financial Statement Relationships.” We devote the first class session to discussing this last section of the case. If we cannot distribute the case ahead of time, we devote approximately three hours of class time to discussing the case. Alternatively, you can choose to emphasize particular questions based on the amount of time available and refer students to the solution for the remaining parts.

**Income Statement**

- a. For wholesale and retail customers, Nike apparently recognizes revenues from the sale of products at the time of sale. The criteria for revenue recognition are (1) substantial completion of the revenue-generating process by delivering products or services and (2) receipt of cash or a receivable whose cash-equivalent value a firm can measure with reasonable accuracy. The sale of products to retailers constitutes substantial performance unless Nike is required to take back unsold items. There is no indication that returns are substantial; furthermore, Nike recognizes a reduction for return sales at the time of sales. The “Futures” ordering program likely matches products to specific customer needs. Nike carries substantial accounts receivable from its customers. The allowance for uncollectible accounts had a balance equal to 3.7% of gross accounts receivable [ $\$110.8/(\$2,883.9 + \$110.8)$ ] at the end of 2009 and 2.7% [ $\$78.4/(\$2,795.3 + \$78.4)$ ] at the end of 2008. Thus, Nike’s revenue recognition appears appropriate.
- b. The notes indicate that Nike uses FIFO for domestic and international inventories. Firms are free to select their inventory cost-flow assumption from the set deemed acceptable by standard-setting bodies. These bodies do not provide a set of criteria that firms must apply to determine which inventory cost-flow assumption is “appropriate.” The FASB permits firms in the United States to use FIFO, LIFO, weighted average, and several other methods. Nike probably uses FIFO because the physical flow of its inventory is FIFO. Also, Nike saves record-keeping costs

by using FIFO for reporting to foreign governments and to its shareholders in the United States.

- c. Nike does not conduct any of its manufacturing. Thus, depreciation expense relates to buildings and equipment used in selling and administrative activities. Nike's income statement classifies expenses by their function instead of their nature. Thus, Nike includes depreciation expense in selling and administrative expenses.
- d. The notes indicate that in 2009, income tax expense was \$469.8 million, whereas the current amount of income taxes payable was \$763.9 million, which means that Nike paid \$294.1 million in tax that increased deferred tax assets or reduced deferred tax liabilities. Firms recognize deferred taxes for temporary differences between taxable income and income for financial reporting. The taxable income of Nike for 2009 is greater than its income before taxes for financial reporting. This probably occurred because Nike recognized revenues for financial reporting in 2009 that it will recognize in later years for tax reporting and because it recognized restructuring and impairment charges during 2009 financial reporting that it will not be able to deduct from taxable income until later years. The basis for measuring the amount of income tax *expense* is the amount of revenues and expenses recognized during the year for financial reporting. The basis for measuring income tax *payable* is the amount of revenues and expenses recognized during the year for tax reporting. Because these amounts are usually different, firms are required to recognize deferred tax assets and deferred tax liabilities on their balance sheets. Governmental laws dictate the manner of measuring taxable income. As long as firms apply these laws correctly in measuring their taxable income each year and pay the required taxes, they have no additional obligation to governmental entities at this time. The presence of a deferred tax asset or a deferred tax liability on the balance sheet is not an indication that governmental bodies have permitted firms to delay paying taxes. Rather, it indicates the desire of standard-setters to match income tax expense with income before taxes for financial reporting.

### **Balance Sheet**

- e. The allowance for uncollectible accounts arises because Nike recognizes revenue earlier than the time it collects cash. Because Nike is not likely to collect 100% of the amount reported as sales revenue, it must recognize an expense for estimated uncollectible accounts and reduce gross accounts receivable to the amount it expects to collect in cash. Nike increases the balance in the allowance account for estimated uncollectible accounts arising from sales each year. It reduces the balance in the allowance account for actual customers' accounts deemed uncollectible. Nike reports the balance in the allowance account as a subtraction from gross accounts receivable.

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- f. The notes indicate that Nike uses the straight-line method for buildings and leasehold improvements, machinery and equipment, and software. As with the inventory cost-flow assumption, standard-setting bodies give firms freedom to select any depreciation method from those deemed acceptable, including accelerated depreciation methods. These bodies do not provide criteria as to which method is more “appropriate” for a particular firm. Nike likely uses accelerated depreciation methods for income tax reporting even though it uses straight-line methods for financial reporting. The accelerated methods that Nike uses for tax reporting are determined by the government’s tax accounting rules, which permit accelerated deductions for depreciation to encourage capital investments. Thus, Nike incurs greater record-keeping costs by using different depreciation methods for financial and tax reporting, but likely defers payment of taxes.
- g. U.S. GAAP require firms to expense in the year incurred any expenditures (for example, advertising, promotion, and quality control) to develop intangibles (for example, patents, trademarks, and goodwill). Thus, expenditures made to develop the Nike name or its trademarks will not appear on the balance sheet as assets. Expenditures made to purchase intangibles from other firms will appear on the balance sheet as assets (in some cases subject to amortization). Most of the identifiable intangible assets and goodwill appearing on Nike’s balance sheet arose from the acquisition of Converse Inc. in 2004 and Umbro in 2008.
- h. Deferred tax assets arise when a temporary difference provides a future tax benefit for a firm. This occurs (1) when a firm recognizes revenue earlier for tax reporting than for financial reporting (subsequent recognition of the revenue for financial reporting will not give rise to a tax payment) or (2) when a firm recognizes expenses earlier for financial reporting than for tax reporting (subsequent recognition of the expense for tax reporting will reduce income tax payments). Deferred tax liabilities arise when a temporary difference requires a firm to make a tax payment in the future. This occurs (1) when a firm recognizes revenue earlier for financial reporting than for tax reporting (subsequent recognition of the revenue for tax reporting will require the firm to pay taxes) or (2) when a firm recognizes an expense earlier for tax reporting than for financial reporting (subsequent recognition of the expense for financial reporting does not give rise to a tax deduction, thereby increasing taxable income and taxes payable). Note that the classification of deferred taxes on the balance sheet depends on (1) the likelihood of temporary differences giving rise to a deferred tax asset or deferred tax liability and (2) the timing of the likely reversal of the temporary difference (less than one year or longer than one year).

- i. The FASB concluded that firms should report changes in assets and liabilities that do not immediately affect net income and retained earnings—but may affect them in the future—as a separate component of shareholders’ equity in the account Accumulated Other Comprehensive Income. In 2009, Nike’s “other comprehensive income” relates to foreign currency translation losses [(\$335.3 million)] and net unrealized gains on cash flow and net investment hedges (\$451.4 million).

**Statement of Cash Flows**

- j. Under U.S. GAAP and IFRS, firms must use the accrual basis of accounting when measuring net income. Firms usually recognize revenue at the time of sale of goods and services, not necessarily when they receive cash from customers. Regardless of when they expend cash, firms attempt to match expenses with associated revenues. The accrual basis gives a better indication of a firm’s operating performance than the cash basis does because of the matching of inputs and outputs. The statement of cash flows reports the amount of cash received from customers net of amounts paid to suppliers of goods and services.
- k. Depreciation expense reduces net income but does not require a cash expenditure in the year of the expense recognition. The cash effect occurred in the year a firm acquired the property, plant, and equipment; the firm classified the cash outflow as an investing activity in the statement of cash flows at that time. The addition adds back to net income the amount subtracted in calculating earnings for the year.
- l. Requirement d in the text says that Nike paid more income taxes during 2009 than it recognized as income tax expense. Net income on the first line of the statement of cash flows reflects a subtraction for income tax expense, whereas an additional portion was paid in cash in 2009. The additional amount paid in cash but not yet expensed is subtracted from net income in calculating cash from operations.
- m. Net income on the first line of the statement of cash flows includes revenues recognized each year. Nike does not necessarily collect cash each year in an amount exactly equal to revenues. It may collect cash during 2009 from sales made in prior years, and it may not collect cash on some sales made in 2009 until later years. The subtraction for the increase in accounts receivable means that Nike received less cash than it recognized as sales revenue.
- n. Net income on the first line of the statement of cash flows includes a subtraction for the cost of goods sold during each year. Nike will likely purchase a different amount of inventory than it sells. An increase in inventories means that Nike purchased more than it sold. Thus, the cash outflow for purchases potentially exceeds cost of goods sold and requires a subtraction from net income for the additional cash required. Whether additional cash was in fact required in any year depends on the change in accounts payable, discussed next.

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- o. Accounts payable reflects amounts owed to suppliers for inventory items purchased. Purchases of inventory items increase this liability, and cash payments reduce it. The adjustment for inventory in Solution n converted cost of goods sold to purchases. The adjustment for accounts payable converts purchases to cash payments to suppliers. An increase in accounts payable means that Nike purchased more than its cash expenditure for purchases. Thus, the adjustments for the change in inventories and the change in accounts payable convert cost of goods sold included in net income to cash payments to suppliers for inventory items. The accrued liabilities accounts reflect amounts owed to suppliers of various services. Purchases of these services increase these liabilities, and cash payments reduce them. Net income on the first line of the statement of cash flows includes an expense for the cost of these services consumed during the year. An increase in the liability for these items means that the cash expenditure during the year was less than the amount recognized as an expense. The addition to net income indicates that the cash outflow was less than the expense. Cash flow from operations did not decrease by the full amount of the expense.
- p. The FASB requires firms to report the proceeds from selling property, plant, and equipment or divesting a subsidiary as an investing activity. Their rationale for this classification is twofold: (1) Selling such noncurrent assets is not the primary operating activity of most companies and (2) cash expenditures to purchase these assets appear as investing activities. If a firm sells such assets at a gain or loss, it must subtract the gain from net income or add back the loss to net income when computing cash flow from operations. This subtraction or addition nets the effect of the gain or loss to zero in the operating section of the statement of cash flows and shows the full cash proceeds as an investing activity. Therefore, Nike subtracted \$60.6 million for the gain from the divestiture of the Bauer subsidiary in 2008 from operating activities and added proceeds of \$246.0 million as an investing activity.
- q. The FASB requires firms to report changes in short-term bank borrowing as a financing activity. Their rationale for not including such borrowing as an operating activity, which is the classification of changes in other current liabilities, is that a firm does not generate operating cash flows by borrowing from banks. Operating cash flows come from selling goods and services to customers. On the other hand, changes in other current liabilities relate directly to purchases of goods and services used in operations, justifying their inclusion in the operating section of the statement of cash flows.

**Relations between Financial Statement Items (amounts in millions):**

r. Sales Revenue.....	\$ 19,176.1
Increase in Accounts Receivable* .....	<u>(238.0)</u>
Cash Collected from Customers.....	<u>\$ 18,938.1</u>

\*Amount taken from the Consolidated Statement of Cash Flows.

s. Cost of Goods Sold.....	\$ 10,571.7
Decrease in Inventories* .....	<u>(32.2)</u>
Cost of Inventories Purchased.....	\$ 10,539.5
Decrease in Accounts Payable** .....	<u>255.7</u>
Cash Paid for Purchases of Inventory .....	<u>\$ 10,795.2</u>

\*Amount taken from the Consolidated Statement of Cash Flows.

\*\*Amount taken from the Consolidated Balance Sheet. It represents the change in Accounts Payable during the year.

t. Property, Plant and Equipment (at Cost):	
Balance, May 31, 2008.....	\$ 4,103.0
Purchases of Property, Plant and Equipment .....	423.7
Property, Plant and Equipment Disposed/Impaired (Plug) .....	<u>(271.0)</u>
Balance, May 31, 2009.....	<u>\$ 4,255.7</u>

Accumulated Depreciation:

Balance, May 31, 2008.....	\$ 2,211.9
Depreciation Expense for fiscal 2009 .....	335.0
Accumulated Depreciation of Property, Plant and Equipment Disposed/Impaired for fiscal 2009 (Plug).....	<u>(248.9)</u>
Balance, May 31, 2009.....	<u>\$ 2,298.0</u>

u. Retained Earnings:	
Balance, May 31, 2008.....	\$ 5,073.3
Net Income in fiscal 2009 .....	1,486.7
Dividends in fiscal 2009.....	(466.7)
Stock Repurchases in fiscal 2009.....	(632.7)
Other Adjustments (Plug).....	<u>(9.2)</u>
Balance, May 31, 2009.....	<u>\$ 5,451.4</u>

Retained earnings increased during 2009 by \$378.1 million (\$5,451.4 – \$5,073.3). Net income increased retained earnings by \$1,486.7 million, dividends reduced retained earnings by \$466.7 million, and share repurchases reduced retained earnings by \$632.7 million, for a net increase of \$387.3 million (\$1,486.7 – \$466.7 – \$632.7). The repurchase and retirement of Nike common stock must have resulted in an additional charge against retained earnings of \$9.2 million (\$387.3 – \$378.1). Note that most companies report the cost of treasury stock purchased on a

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separate line in the shareholders' equity section of the balance sheet. Nike chooses to report such repurchases as the retirement of the stock. The charge against retained earnings reflects the increases in the stock price in previous years resulting from the retention of earnings.

**Interpreting Financial Statement Relationships**

- v. The improved net income/sales percentage in 2008 reflects the net result of a decrease in the cost of sales percentage, an increase in the selling and administrative expense percentage, and a decline in the income tax percentage. The primary reasons the net income/sales percentage dropped can be seen in the restructuring charges and impairment charges in 2009.
- w. The move to apparel changes the product mix and may result in sales of more higher-margin products. The move to Europe and other countries also may result in higher-margin sales. The introduction of more upscale shoes also is likely to increase the gross margin, although there is no evidence that this occurred. Another factor may be favorable exchange rate changes. This in fact occurred, but most students do not have the background to understand this explanation. During this period, the euro increased in value relative to the U.S. dollar. Nike denominates its purchases in U.S. dollars. It denominates sales in Europe in euros. A higher gross margin results from an increase in the value of the euro.
- x. The increase in selling and administrative expense to sales percentages between 2007 and 2009 likely results from the need to increase marketing efforts (advertising and celebrity endorsements) in a period of slower growth in sales.
- y. Nike outsources its manufacturing and most of the retailing of its products. Thus, the principal fixed assets are corporate headquarters, research facilities, warehouses, and transportation equipment. One might think of Nike as serving essentially a wholesaling function along with product development and promotion.
- z. Nike has few fixed assets to serve as collateral for borrowing. Also, Nike generates more than sufficient cash flow from operations to finance the small amount of investments in fixed assets. Thus, Nike does not need significant notes payable or long-term debt financing.
- aa. As discussed in Solution y, Nike outsources the production of its products to manufacturers located in Asia. The property, plant, and equipment needs of Nike are minimal, and probably represent warehouses and distribution facilities. As such, one might expect minimal increases or even decreases in property, plant, and equipment each year. Also, compared to property, plant, and equipment, total assets are growing faster, causing the percentages to decline relative to total assets.

- bb. In each year, Nike reported a significant addback for depreciation. Although depreciation is not a source of cash, it is deducted as an expense on the income statement to arrive at net income. For firms that have depreciation charges, cash flows from operations are typically greater than net income because net income includes this expense, whereas it is excluded (added back) as a cash flow from operations.
- cc. Cash flow from operations exceeded expenditures on property, plant, and equipment each year, so Nike did not need to rely on external financing for its capital expenditures. Indeed, Nike uses excess cash flows each year to pay dividends and repurchases common shares.
- dd. The repurchases of common stock substantially exceeded the issue of new stock under stock option plans and other stock issues in all three years. Thus, Nike is not repurchasing shares to maintain a level number of shares outstanding to avoid dilution. Nike likely had excess cash and believed that its stock price was undervalued. Such stock repurchases often result in an increase in the market price of the stock.
- ee. In fact, Nike increased its dividend payout rate (dividends as a percentage of net income) during this three-year period. The total amount of dividends paid out each year increased relative to net income. Nike may be using dividend payout together with common share repurchases to signal its ability to generate cash flows that can be distributed to shareholders, which should cause the share price to increase.

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