GESTÃO FINANCEIRA I   GESTÃO FINANCEIRA CORPORATE FINANCE I CORPORATE FINANCE

CADERNO DE EXERCÍCIOS 2 – SOLUÇÕES
Capítulo 2
Introduction to Financial Statement Analysis

(de BERK, DEMARZO e HARFORD'S "FUNDAMENTALS OF CORPORATE FINANCE")

LICENCIATURA

2017-2018

Chapter 2
Introduction to Financial Statement Analysis

4. Consider the following potential events that might have taken place at Vodafone Group Plc. on 31 March, 2013. For each one, indicate which line items in Vodafone's balance sheet would be affected and by how much. Also indicate the change to Vodafone's book value of equity. (In all cases, ignore any tax consequences for simplicity.)

a. Vodafone used £20 million of its available cash to repay £20 million of its long-term debt.
b. A warehouse fire destroyed £5 million worth of uninsured inventory.
c. Vodafone used £5 million in cash and £5 million in new long-term debt to purchase a £10 million building.
d. A large customer owing £3 million for products it already received declared bankruptcy, leaving no possibility that Vodafone would ever receive payment.
e. Vodafone's engineers discover a new manufacturing process that will cut the cost of its flagship product by over 50%.
f. A key competitor announces a radical new pricing policy that will drastically undercut Vodafone's prices.

a. Long-term liabilities would decrease by £20 million, and cash would decrease by the same amount. The book value of equity would be unchanged.

b. Inventory would decrease by £5 million, as would the book value of equity.

c. Long-term assets would increase by £10 million, cash would decrease by £5 million, and long-term liabilities would increase by £5 million. There would be no change to the book value of equity.

d. Accounts receivable would decrease by £3 million, as would the book value of equity.

e. This event would not directly affect the balance sheet. It may indirectly affect the book value of equity, as the discovery would increase Vodafone's reported net income.

f. This event would not directly affect the balance sheet. It may indirectly affect the book value of equity, as the new pricing policy would decrease Vodafone's reported net income.

5. What was the change in Global Conglomerate's book value of equity from 2011 to 2012 according to Table 2.1 (END OF THIS PROBLEM SET)? Does this imply that the market price of Global's shares increased in 2012? Explain.

Global Conglomerate's book value of equity increased by $1 million ($22.2 million in 2012 – $21.2 million in 2011) from 2011 to 2012. An increase in book value does not necessarily indicate an increase in Global's share price. The market value of a stock does not depend on the book value of equity, which is an accounting measure of historical performance, but on investors' expectation of the firm's future performance. There are many events that may affect Global's future profitability, and hence its share price, that do not show up on the balance sheet.

9. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp.

a. By what percentage did Mydeco's revenues grow each year from 2010 to 2013?

b. By what percentage did net income grow each year?

c. Why might the growth rates of revenues and net income differ?

a.

Year	2009	2010	2011	2012	2013
Revenue	404.3	363.8	424.6	510.7	604.1
Revenue growth		-10.02%	16.71%	20.28%	18.29%

b.

Year	2009	2010	2011	2012	2013
Net Income	18,0	2,9	6,2	12,7	21,7
Net Income growth		-83,89%	113,79%	104,84%	70,87%

c. Net Income growth rate differs from revenue growth rate because cost of goods sold and other expenses can move at different rates than revenues. For example, revenues declined in 2010 by 10.0%; however, cost of goods sold only declined by 7.7%.

10. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. Suppose Mydeco repurchases 2 million shares each year from 2010 to 2013. What would its earnings per share be in 2013?

A repurchase does not impact earnings directly, so any change to EPS will come from a reduction in shares outstanding. 2013 shares outstanding = $55 - 4 \times 2 = 47$ million, EPS $= \dfrac{21.7}{47} = \$0.46$.

11. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. Suppose Mydeco had purchased additional equipment for \$12 million at the end of 2010, and this equipment was depreciated by \$4 million per year in 2011, 2012, and 2013. Given Mydeco's tax rate of 35%, what impact would this additional purchase have had on Mydeco's net income in years 2010-2013?

The equipment purchase does not impact net income directly; however, the increased depreciation expense and tax savings changes net income.

Year	2010	2011	2012	2013
Net Income	2.9	6.2	12.7	21.7
Additional Depreciation		4	4	4
Tax Savings		1.4	1.4	1.4
New Net Income	2.90	3.60	10.10	19.10

12. See Table 2.5 showing financial statement data and stock price data for Mydeco Corp. Suppose Mydeco's costs and expenses had been the same fraction of revenues in 2010–2013 as they were in 2009. What would Mydeco's EPS have been each year in this case?

If Mydeco's costs and expenses had been the same fraction of revenues in 2010–2013 as they were in 2009, then their net profit margins would have been equal.

2009 net profit margin $= \dfrac{18}{404.3} = 4.45\%$.

Year	2009	2010	2011	2012	2013
Revenue	404.3	363.8	424.6	510.7	604.1
Net Profit Margin	4.45%	4.45%	4.45%	4.45%	4.45%
New Net Income	18.0	16.2	18.9	22.7	26.9
Shares Outstanding	55.0	55.0	55.0	55.0	55.0
New EPS	$0.33	$0.29	$0.34	$0.41	$0.49

13. **Suppose a firm's tax rate is 40%.**

  a. What effect would a $5 million operating expense have on this year's earnings? What effect would it have on next year's earnings?

  b. What effect would a $5 million capital expense have on this year's earnings if the capital is depreciated at a rate of $1 million per year for five years? What effect would it have on next year's earnings?

a. A $5 million operating expense would be immediately expensed, increasing operating expenses by $5 million. This would lead to a reduction in taxes of 40% × $5 million = $2 million. Thus, earnings would decline by 5 – 2 = $3 million. There would be no effect on next year's earnings.

b. Capital expenses do not affect earnings directly. However, the depreciation of $1 million would appear each year as an operating expense. With a reduction in taxes of 1 × 40% = $0.4 million, earnings would be lower by 1 – 0.4 = $0.6 million for each of the next 5 years.

*14. Quisco Systems has 6.5 billion shares outstanding and a share price of $18. Quisco is considering developing a new networking product in house at a cost of $500 million. Alternatively, Quisco can acquire a firm that already has the technology for $900 million worth (at the current price) of Quisco stock. Suppose that absent the expense of the new technology, Quisco will have EPS of $0.80.

  a. Suppose Quisco develops the product in house. What impact would the development cost have on Quisco's EPS? Assume all costs are incurred this year and are treated as an R&D expense, Quisco's tax rate is 35%, and the number of shares outstanding is unchanged.

  b. Suppose Quisco does not develop the product in house but instead acquires the technology. What effect would the acquisition have on Quisco's EPS this year? (Note the acquisition expenses do not appear directly on the income statement. Assume the acquired firm has no revenues or expenses of its own, so that the only effect on EPS is due to the change in the number of shares outstanding).

  c. Which method of acquiring the technology has a smaller impact on earnings? Is this method cheaper? Explain.

Quisco Systems wishes to acquire a new networking technology and is confronted with a common business problem: whether to develop the technology itself in-house or to acquire another company that already has the technology. Quisco must perform a comprehensive analysis of each option, not just comparing internal development costs versus acquisition costs, but considering tax implications as well.

a. If Quisco develops the product in-house, its earnings would fall by $500 × (1 – 35%) = $325 million. With no change to the number of shares

outstanding, its EPS would decrease by $0.05 = \$325/6500$ to $0.75. (Assume the new product would not change this year's revenues.)

b. If Quisco acquires the technology for $900 million worth of its stock, it will issue $900/18 = 50$ million new shares. Because earnings without this transaction are 0.80×6.5 billion $= \$5.2$ billion, its EPS with the purchase is $5.2/6.55 = \$0.794$.

c. Acquiring the technology would have a smaller impact on earnings. But this method is not cheaper. Developing it in-house is less costly and provides an immediate tax benefit. The earnings impact is not a good measure of the expense. In addition, note that because the acquisition permanently increases the number of shares outstanding, it will reduce Quisco's earnings per share in future years as well.

17. **Suppose your firm receives a $5 million order on the last day of the year. You fill the order with $2 million worth of inventory. The customer picks up the entire order the same day and pays $1 million up front in cash; you also issue a bill for the customer to pay the remaining balance of $4 million within 40 days. Suppose your firm's tax rate is 0% (i.e., ignore taxes). Determine the consequences of this transaction for each of the following:**

  a. Revenues
  b. Earnings
  c. Receivables
  d. Inventory
  e. Cash

Even a relatively simple transaction such as receiving an order to sell merchandise on credit and shipping the order promptly creates a series of changes within the firm. Map out the changes that would occur to a firm that engages in a relatively simple business transaction.

a. *Revenues:* increase by $5 million
b. *Earnings:* increase by $3 million
c. *Receivables:* increase by $4 million
d. *Inventory:* decrease by $2 million
e. *Cash:* increase by $3 million (earnings) – $4 million (receivables) + $2 million (inventory) = $1 million (cash)

We can see that even a relatively simple credit sale has impacts on Revenues, Earnings, Accounts Receivable, Inventory, and eventually Cash.

18. **Nokela Industries purchases a $40 million cyclo-converter. The cyclo-converter will be depreciated by $10 million per year over four years, starting this year. Suppose Nokela's tax rate is 40%.**
    a. **What impact will the cost of the purchase have on earnings for each of the next four years?**
    b. **What impact will the cost of the purchase have on the firm's cash flow for the next four years?**

Nokela Industries plans to purchase a capital asset. In this case it is a $40 million cyclo-converter. Any time a firm acquires a capital asset, it is permitted to depreciate the asset for tax purposes. This has Depreciation Expense, Tax Expense, and Cash Flow effects that must be understood and analyzed.

a. Earnings for the next four years would have to deduct the depreciation expense. After taxes, this would lead to a decline of $10 \times (1 - 40\%) = \$6$ million each year for the next four years.

b. Cash flow for the next four years: less $36 million ($-6 + 10 - 40$) this year (possibly -40 immediately and -6+10 at the end of the year), and add $4 million ($-6 + 10$) for the three following years.

For the next four years, the investment in the cyclo-converter will increase Nokela's depreciation expense by $10 million and will reduce after-tax earnings by $6 million per year. Depreciation expense is a non-cash expense (it is an accrual that recognizes that the value of the asset, which has already been paid for, is declining in value) that the firm does not have to pay out. Because every dollar of depreciation expense lowers Nokela's taxable income by a dollar, its tax savings therefore are 40 cents on the dollar. The $10 million in depreciation expense in the next four years will lower Nokela's tax bill (income tax payable) by $4 million ($10 million $\times$ 0.4) per year.

19. In April 2013, General Electric (GE) had a book value of equity of $123 billion, 10.3 billion shares outstanding, and a market price of $23 per share. GE also had cash of $90 billion, and total debt of $397 billion.

a. What was GE's market capitalization? What was GE's market-to-book ratio?

b. What was GE's book debt-equity ratio? What was GE's market debt-equity ratio?

c. What was GE's enterprise value?

The problem presents us with some raw financial information for General Electric. While useful, this raw financial information is not well suited to support financial analysis of General Electric and to answer such questions as: How has the stock market valued GE? How much debt does GE use relative to the equity financing that GE uses? How valuable, in today's dollars, is GE?

To answer these and other questions we must compute key ratios and current market values as opposed to historical cost values.

a. Market capitalization $= 10.3$ billion $\times \$23 = \$236.9$ billion

$$\text{Market-to-book ratio} = \frac{236.9}{123} = 1.93$$

b. Book debt-equity ratio $= \dfrac{397}{123} = 3.23$

$$\text{Market debt-equity ratio} = \frac{397}{236.9} = 1.68$$

c. Enterprise value $= 236.9 + 397 - 90 = 543.9 \, (\text{billion})$

GE has a market-to-book ratio of 1.93. Over time, equity investors invested $123B in GE; today that equity investment is worth $236.9B (or 1.93 times more). This indicates that GE's management has run the firm well, and equity investors expect strong results in the future.

GE has a book debt-equity ratio of 3.23. Over time, equity investors invested $123B in GE and debt investors invested $397B (or 3.23 times more). This would indicate that GE is very heavily financed with debt. But remember these are book values. In part (a) above, we calculated that GE's equity is valued at $236.9B in today's dollars. The market debt-equity ratio provides a very different picture.

GE has an enterprise value of $543.9B. In today's dollars, investors value the entire company at this value.

20. **In April 2013, Apple had cash of \$39.14 billion, current assets of \$63.34 billion, and current liabilities of \$35.51. It also had inventories of \$1.25 billion.**

a. **What was Apple's current ratio?**

b. **What was Apple's quick ratio?**

c. **In April 2013, Dell had a quick ratio of 1.13 and a current ratio of 1.19. What can you say about the asset liquidity of Apple relative to Dell?**

a. Apple's current ratio $= \dfrac{63.34}{35.51} = 1.78$

b. Apple's quick ratio $= \dfrac{63.34 - 1.25}{35.51} = 1.75$

c. Apple's higher current and quick ratios demonstrate that it has higher asset liquidity than does Dell. This means that in a pinch, Apple has more liquidity to draw on than does Dell. However, note that these numbers are only looking at the assets side, not taking into account the liabilities of these two companies. They are just one indicator.

21. In mid-2012, the following information was true about Abercrombie and Fitch (ANF) and The GAP (GPS), both clothing retailers.

	Book Equity (millions of dollars)	Price per share (dollars)	Number of Shares (millions)
ANF	1,693	35.48	82.55
GPS	3,017	27.90	489.22

a. **What is the market-to-book ratio of each company?**

b. **What conclusions do you draw from comparing the two ratios?**

The table presents raw data about ANF and GPS. While useful, this information does not easily tell us how the stock market values each of these firms alone and by comparison. To accomplish this, we will compute the market-to-book ratio of each firm and then compare them.

a. ANF's market-to-book ratio $= \dfrac{35.48 \times 82.55}{1,693} = 1.73$

GPS's market-to-book ratio $= \dfrac{27.90 \times 489.22}{3,017} = 4.52$

b. The market looks more favorably on the outlook of The Gap than on Abercrombie & Fitch.

The market values, in a relative sense, the outlook of The Gap more favorably than Abercrombie & Fitch. For every dollar of equity invested in GPS, the market values

that dollar today at \$4.52 versus \$1.73 for a dollar invested in ANF. Equity investors are willing to pay relatively more today for shares of GPS than for ANF because they expect GPS to produce superior performance in the future.

22. **In fiscal year 2011, Starbucks Corporation (SBUX) had revenue of \$11.70 billion, gross profit of \$6.75 billion, and net income of \$1.25 billion. Peet's Coffee and Tea (PEET) had revenue of \$372 million, gross profit of \$72.7 million, and net income of \$17.8 million.**

a. **Compare the gross margins for Starbucks and Peet's.**

b. **Compare the net profit margins for Starbucks and Peet's.**

c. **Which firm was more profitable in 2011?**

   a. Starbucks' gross margin $= \dfrac{6.75}{11.70} = 57.69\%$; Peet's gross margin $= \dfrac{72.7}{372} = 19.54\%$.

   b. Starbucks' net margin $= \dfrac{1.25}{11.70} = 10.68\%$; Peet's net margin $= \dfrac{17.8}{372} = 4.78\%$.

   c. Starbucks was more profitable in 2011.

23. **Local Co. has sales of \$12 million and cost of sales of \$5 million. Its selling, general and administrative expenses are \$850,000, and its research and development is \$1.5 million. It has annual depreciation charges of \$1.2 million and a tax rate of 40%.**

a. **What is Local's gross margin?**

b. **What is Local's operating margin?**

c. **What is Local's net profit margin?**

We can use Eqs. 2.8, 2.9, and 2.10 to compute Local's margins. The problem gives us the necessary inputs.

   a. Gross Margin $= \dfrac{\text{Gross Profit}}{\text{Sales}} = \dfrac{12-5}{12} = 58.33\%$

   b. Operating Margin $= \dfrac{\text{Operating Income}}{\text{Sales}} = \dfrac{12-5-0.85-1.5-1.2}{12} = 28.75\%$

   c. Net Profit Margin $= \dfrac{\text{Net Income}}{\text{Sales}} = \dfrac{(12-5-0.85-1.5-1.2)(1-0.4)}{12} = 17.25\%$

Local is profitable. You can see how the margins decrease as you move down the income statement because each successive margin takes into account more costs.

24. **If Local Co., the company in Problem 23, had an increase in selling expenses of $0.5 million, how would that affect each of its margins?**

Selling expenses do not affect the gross margin, but the increase in such expenses will decrease the other margins.

Gross margin would not change.

$$\text{Operating Margin} = \frac{\text{Operating Income}}{\text{Sales}} = \frac{12 - 5 - 1.35 - 1.5 - 1.2}{12} = 24.58\%$$

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Sales}} = \frac{(12 - 5 - 1.35 - 1.5 - 1.2)(1 - 0.4)}{12} = 14.75\%$$

Gross margin only accounts for cost of good sold. The effect of the additional selling expenses can be seen in the reduced operating and net profit margins.

25. **If Local Co., the company in Problem 23, had an interest expense of $500,000, how would that affect each of its margins?**

Only the net profit margin accounts for interest expense, so both the gross and operating margins will be unaffected.

Gross margin would not change.

Operating margin would not change.

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Sales}} = \frac{(12 - 5 - 0.85 - 1.5 - 1.2 - 0.5)(1 - 0.4)}{12} = 0.1475, \text{ or } 14.75\%$$

If you were focused only on the gross and operating margins, you would not see the impact of the increased interest expense, which shows-up in the net profit margin.

26. **Chutes & Co. has an interest expense of $1.8 million and an operating margin of 15% on total sales of $50 million. What is Chutes' interest coverage ratio?**

Using operating income as a multiple of interest to compute interest coverage, we have: operating income = 0.15 × $50 million = $7.5 million, so its interest coverage is $7.5 million/$1.8 million = 4.17 times.

27. **Ladders, Inc. has a net profit margin of 8% on sales of $70 million. If has book value of equity of $50 million and total liabilities with a book value of $40 million. What is Ladders' ROE? ROA?**

First, we must compute Ladders' net income using the fact that net profit margin is net income/sales. Then we can compute the ROE as net income/book equity and the ROA as net income/book assets.

First, Ladders' net income: 0.08 × $70 million = $5.6 million.

ROE = Net Income/Book Equity = $5.6 million/$50 million = 11.2%

ROA = Net Income/Book Assets = $5.6 million/($40 million + $50 million) = 6.22%

ROE measure the net income (to shareholders) as a percentage of the book value of their investment. ROA measures the net income (to shareholders) as a percentage of the book value of all the assets used to generate the income. A firm with positive book equity and some debt will always have a lower ROA than ROE, except if the firm reports a negative net income (net loss). ROA and ROE will be the same for a firm with no liabilities.

28. **JPJ Corp has sales of $6 million, accounts receivable of $950,000, total assets of $25 million (of which $18 million are fixed assets), inventory of $860,000, and cost of goods sold of $2,200,000. What is JPJ's accounts receivable days? Fixed asset turnover? Total asset turnover? Inventory turnover?**

Using the information provided and Eqs. 2.14 to 2.17, we can compute all the efficiency ratios for JPJ.

$$\text{Accounts Receivable Days} = \frac{\text{Accounts Receivable}}{\text{Average Daily Sales}} = \frac{950,000}{\left(6,000,000/365\right)} = 57.8$$

$$\text{Fixed Asset Turnover} = \frac{\text{Sales}}{\text{Fixed Assets}} = \frac{6,000,000}{18,000,000} = 0.333$$

$$\text{(Total) Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{6,000,000}{25,000,000} = 0.24$$

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Inventory}} = \frac{2,200,000}{860,000} = 2.6$$

These ratios allow you to evaluate how efficiently JPJ is utilizing its assets and how quickly it is collecting its accounts receivables.

29. **If JPJ Corp. (the company form the previous question) is able to increase sales by 12% but keep its total and fixed asset growth to only 8%, what will its new asset turnover ratios be?**

Using the 12% growth rate, we can compute the new sales number and then the 8% growth rate will give us the new assets number. We can then recompute the asset turnover ratios.

Sales = 6,000,000(1.12) = 6,720,000

Assets = 25,000,000(1.08) = 27,000,000

Fixed assets = 18,000,000(1.08) = 19,440,000

$$\text{Fixed Asset Turnover} = \frac{\text{Sales}}{\text{Fixed Assets}} = \frac{6,720,000}{19,440,000} = 0.35$$

$$\text{(Total) Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{6,720,000}{27,000,000} = 0.25$$

Because sales are growing faster than assets, we see that efficiency of asset utilization is increasing—the turnover ratios are higher.

30. **You are analyzing the leverage of two firms and you note the following (all values in millions of dollars):**

	Debt	Book Equity	Market Equity	Operating Income	Interest Expense
Firm A	500	300	400	100	50
Firm B	80	35	40	8	7

a. **What is the market debt-to-equity ratio of each firm?**

b. **What is the book debt-to-equity ratio of each firm?**

c. **What is the interest coverage ratio of each firm?**

d. **Which firm may have more difficulty meeting its debt obligations?**

The table presents raw data about Debt, Equity, Operating Income, and Interest Expense. While useful, this information does not easily tell us how much financial leverage each of these firms alone and by comparison is using. It also does not tell us how well each firm is able to support its debt. To accomplish this, we will compute various leverage ratios of each firm and then compare them.

a. **FirmA:** Market debt-equity ratio $= \dfrac{500}{400} = 1.25$

   Firm B: Market debt-equity ratio $= \dfrac{80}{40} = 2.00$

b. **Firm A:** Book debt-equity ratio $= \dfrac{500}{300} = 1.67$

   Firm B: Book debt-equity ratio $= \dfrac{80}{35} = 2.29$

c. **Firm A:** Interest coverage ratio $= \dfrac{100}{50} = 2.00$

   Firm B: Interest coverage ratio $= \dfrac{8}{7} = 1.14$

Firm B has a lower coverage ratio and will have slightly more difficulty meeting its debt obligations than Firm A.

31. **For 2012, Walmart and Target had the following information (all values are in millions of dollars):**

	Sales (Income Statement)	Cost of Goods Sold (Income Statement)	Accounts Receivable (Balance Sheet)	Inventory (Balance Sheet)
Walmart	469,162	352,488	6,768	43,803
Target	73,301	50,568	6,857	7,903

    a. **What is each company's accounts receivable days?**

    b. **What is each company's inventory turnover?**

    c. **Which company is managing its accounts receivable and inventory more efficiently?**

The table presents raw data about Sales, Accounts Receivable, and Inventory data for Walmart and Target. While useful, this information does not tell us easily how well each firm is managing its Accounts Receivable and Inventory in general and in comparison with each other. To accomplish this, we will compute the relevant ratios of each firm and then compare them.

a. Walmart: Accounts Receivable Days $= \dfrac{6,768}{\left(\dfrac{469,162}{365}\right)} = 5.27$

   Target: Accounts Receivable Days $= \dfrac{6,857}{\left(\dfrac{73,301}{365}\right)} = 34.14$

b. Walmart: Inventory Turnover $= \dfrac{352,488}{43,803} = 8.05$

   Target: Inventory Turnover $= \dfrac{50,568}{7,903} = 6.40$

d. Walmart is managing its accounts receivable and inventory more efficiently, as shown by the above ratios (shorter AR days and more Inventory turnover). Walmart collects its accounts receivable in 5.27 days as opposed to 34.14 days for Target. Likewise Walmart turns over its inventory 8.05 times a year, as opposed to 6.40 times for Target.

33. **Consider a retail firm with a net profit margin of 5.5%, a total asset turnover of 2.4, total assets of $53 million, and a book value of equity of $25 million.**

   a. **What is the firm's current ROE?**

   b. **If the firm increased its net profit margin to 6%, what would its ROE be?**

   c. **If, in addition, the firm increased its revenues by 25% (while maintaining this higher profit margin and without changing its assets or liabilities), what would its ROE be?**

Use the DuPont Identity to perform the analysis:
Net Profit Margin × Total Asset Turnover × Total Assets/Equity

a. $5.5\% \times 2.4 \times 53/25 = 27.98\%$

b. $6\% \times 2.4 \times 53/25 = 30.53\%$

c. $6\% \times (2.4 \times 1.25) \times 53/25 = 38.16\%$

The analysis demonstrates different ways that a company can increase its overall ROE—by increasing its net profit margin or its asset turnover.

34. **Find online the annual report for EDP for its 2014 fiscal year, filed in December 2014.**

   a. **Compute EDP's net profit margin, total asset turnover, and equity multiplier.**

   b. **Verify the DuPont Identity for EDP's ROE.**

   c. **If EDP's managers wanted to increase its ROE by 1 percentage point, how much higher would their asset turnover need to be?**

a. EDP's Net Profit Margin $= \dfrac{1,040.4}{16,293.9} = 6.385\%$

EDP's Asset Turnover $= \dfrac{16,293.9}{42,873.0} = 0.380$

EDP's Equity Multiplier $= \dfrac{42,873.0}{8,681.5} = 4.938$

   Note: the Net Income and Total Equity considered in this example exclude the remuneration of minority interests. We also accept answers in which students consider profit before minority interests, and total equity. In that case you'd find:

$$\text{EDP's Net Profit Margin} = \frac{1,263.8}{16,293.9} = 7.756\%$$

$$\text{EDP's Asset Turnover} = \frac{16,293.9}{42,873.0} = 0.380$$

$$\text{EDP's Equity Multiplier} = \frac{42,873.0}{11,969.1} = 3.582$$

b. EDP's ROE (DuPont) = 6.385% × 0.380 × 4.938 = 11.98% (using the first set of ratios above)

c. EDP's revised ROE = 12.98%. 12.98% = 6.385% × AT× 4.938. So AT = 0.412. EDP's would need to increase asset turnover to more than 0.412 times.

Table 2.1 Global Conglomerate Corporation Balance Sheet for 2012 and 2011

GLOBAL CONGLOMERATE CORPORATION

Consolidated Balance Sheet
Year Ended December 31 (in $ million)

Assets	2012	2011	Liabilities and Stockholders' Equity	2012	2011
Current Assets					
Cash	21.2	19.5	**Current Liabilities**		
Accounts receivable	18.5	13.2	Accounts payable	29.2	24.5
Inventories	15.3	14.3	Notes payable/short-term debt	3.5	3.2
Other current assets	2.0	1.0	Current maturities of long-term debt	13.3	12.3
Total current assets	57.0	48.0	Other current liabilities	2.0	4.0
Long-Term Assets			Total current liabilities	48.0	44.0
Land	22.2	20.7	**Long-Term Liabilities**		
Buildings	36.5	30.5	Long-term debt	99.9	76.3
Equipment	39.7	33.2	Capital lease obligations	—	—
Less accumulated depreciation	(18.7)	(17.5)	Total debt	99.9	76.3
Net property, plant, and equipment	79.7	66.9	Deferred taxes	7.6	7.4
Goodwill and intangible assets	20.0	20.0	Other long-term liabilities	—	—
Other long-term assets	21.0	14.0	Total long-term liabilities	107.5	83.7
Total long-term assets	120.7	100.9	**Total Liabilities**	155.5	127.7
			Stockholders' Equity	22.2	21.2
Total Assets	177.7	148.9	**Total Liabilities and Stockholders' Equity**	177.7	148.9

Table 2.5 2009–2013 Financial Statement Data and Stock Price Data for Mydeco Corp.

Mydeco Corp. 2009–2013	(All data as of fiscal year end; $ in millions)				
Income Statement	2009	2010	2011	2012	2013
Revenue	404.3	363.8	424.6	510.7	604.1
Cost of Goods Sold	(188.3)	(173.8)	(206.2)	(246.8)	(293.4)
Gross Profit	215.9	190.0	218.3	263.9	310.7
Sales and Marketing	(66.7)	(66.4)	(82.8)	(102.1)	(120.8)
Administration	(60.6)	(59.1)	(59.4)	(66.4)	(78.5)
Depreciation & Amortization	(27.3)	(27.0)	(34.3)	(38.4)	(38.6)
EBIT	61.3	37.4	41.8	57.0	72.8
Interest Income (Expense)	(33.7)	(32.9)	(32.2)	(37.4)	(39.4)
Pretax Income	27.7	4.5	9.6	19.6	33.4
Income Tax	(9.7)	(1.6)	(3.4)	(6.9)	(11.7)
Net Income	18.0	2.9	6.2	12.7	21.7
Shares Outstanding (millions)	55.0	55.0	55.0	55.0	55.0
Earnings per Share	$0.33	$0.05	$0.11	$0.23	$0.39
Balance Sheet	2009	2010	2011	2012	2013
Assets					
Cash	48.8	68.8	86.2	77.4	84.9
Accounts Receivable	88.6	69.8	69.8	76.9	86.1
Inventory	33.7	30.9	28.4	31.7	35.3
Total Current Assets	171.1	169.4	184.4	186.1	206.3
Net Property, Plant, & Equipment	245.3	243.2	308.9	345.5	347.0
Goodwill & Intangibles	361.7	361.7	361.7	361.7	361.7
Total Assets	778.1	774.3	855.0	893.3	914.9

(*Continued*)

Mydeco Corp. 2009–2013	(All data as of fiscal year end; $ in millions)				
Balance Sheet (continued)	2009	2010	2011	2012	2013
Liabilities & Stockholders' Equity					
Accounts Payable	18.7	17.9	22.0	26.8	31.7
Accrued Compensation	6.7	6.4	7.0	8.1	9.7
Total Current Liabilities	25.5	24.2	29.0	34.9	41.4
Long-Term Debt	500.0	500.0	575.0	600.0	600.0
Total Liabilities	525.5	524.2	604.0	634.9	641.4
Stockholders' Equity	252.6	250.1	251.0	258.3	273.5
Total Liabilities & Stock-holders' Equity	778.1	774.3	855.0	893.3	914.9
Statement of Cash Flows	2009	2010	2011	2012	2013
Net Income	18.0	2.9	6.2	12.7	21.7
Depreciation & Amortization	27.3	27.0	34.3	38.4	38.6
Change in Accounts Receivable	3.9	18.8	(0.0)	(7.2)	(9.1)
Change in Inventory	(2.9)	2.9	2.5	(3.3)	(3.6)
Change in Payables & Accrued Compensation	2.2	(1.3)	4.8	5.9	6.5
Cash from Operations	48.4	50.4	47.8	46.6	54.0
Capital Expenditures	(25.0)	(25.0)	(100.0)	(75.0)	(40.0)
Cash from Investing Activities	(25.0)	(25.0)	(100.0)	(75.0)	(40.0)
Dividends Paid	(5.4)	(5.4)	(5.4)	(5.4)	(6.5)
Sale (or Purchase) of Stock	—	—	—	—	-
Debt Issuance (Pay Down)	—	—	75.0	25.0	-
Cash from Financing Activities	(5.4)	(5.4)	69.6	19.6	(6.5)
Change in Cash	18.0	20.0	17.4	(8.8)	7.5
Mydeco Stock Price	*$7.90*	*$3.29*	*$5.23*	*$8.70*	*$10.87*