

Lecture 2: Homework solution

Introduction to Financial Statement Analysis

2-28. See Table 2.5 showing financial statement data and share price data for Mydeco Corp.

- What were Mydeco's gross margins each year?
- Comparing Mydeco's gross margin, EBIT margin, and net profit margin in 2009 and 2013, which margins improved?

a.

Year	2009	2010	2011	2012	2013
Revenue	404.3	363.8	424.6	510.7	604.1
Gross Profit	216.0	190.0	218.4	263.9	310.7
Gross Margin	53.43%	52.23%	51.44%	51.67%	51.43%

b. None of the margins improved from 2009 to 2013

Year	2009	2013
Revenue	404.3	604.1
Gross Profit	216.0	310.7
EBIT	61.4	72.8
Net Income	18.0	21.7
Gross Margin	53.43%	51.43%
EBIT Margin	15.19%	12.05%
Net Profit Margin	4.45%	3.59%

2-30. In mid-2012, Apple had cash and short-term investments of \$27.65 billion, accounts receivable of \$14.30 billion, current assets of \$51.94 billion, and current liabilities of \$33.06 billion.

- What was Apple's current ratio?
- What was Apple's quick ratio?
- What is Apple's cash ratio?
- In mid-2012, Dell had a cash ratio of 0.67, a quick ratio of 1.11 and a current ratio of 1.35. What can you say about the asset liquidity of Apple relative to Dell?

a. Apple's current ratio = $\frac{51.94}{33.06} = 1.57$.

b. Apple's quick ratio = $\frac{27.65 + 14.30}{33.06} = 1.27$.

c. Apple's cash ratio = $\frac{27.65}{33.06} = 0.84$.

d. Apple has significantly more liquid assets than Dell relative to current liabilities.

2-31. See Table 2.5 showing financial statement data and share price data for Mydeco Corp.

- How did Mydeco's accounts receivable days change over this period?
- How did Mydeco's inventory days change over this period?
- Based on your analysis, has Mydeco improved its management of its working capital during this time period?

a. 2009 accounts receivable days = $\frac{88.6}{404.3/365} = 80.0$.

$$\text{2013 accounts receivable days} = \frac{86.1}{604.1/365} = 52.0.$$

b. $\text{2009 inventory days} = \frac{33.7}{188.3/365} = 65.3.$

$$\text{2013 inventory days} = \frac{35.3}{293.4/365} = 43.9.$$

- c. Between 2009 and 2013, Mydeco improved its working capital management by reducing both accounts receivable days and inventory days.

2-32 See Table 2.5 showing financial statement data and share price data for Mydeco Corp.

- a. **Compare accounts payable days in 2009 and 2013.**
 b. **Did this change in accounts payable days improve or worsen Mydeco's cash position in 2013?**

a. $\text{2009 accounts payable days} = \frac{18.7}{188.3/365} = 36.2.$

$$\text{2013 accounts payable days} = \frac{31.7}{293.4/365} = 39.4.$$

- b. Accounts payable days increased from 2009 to 2013, which improved the cash position of Mydeco

2-39. See Table 2.5 showing financial statement data and share price data for Mydeco Corp.

- a. **Compute Mydeco's ROE each year from 2009 to 2013.**
 b. **Compute Mydeco's ROA each year from 2009 to 2013.**
 c. **Which return is more volatile? Why?**

Year	2009	2010	2011	2012	2013
Net Income	18.0	3.0	6.3	12.7	21.7
Shareholders' Equity	252.7	250.3	251.2	258.5	273.7
a. ROE	7.12%	1.20%	2.51%	4.91%	7.93%

Year	2009	2010	2011	2012	2013
Net Income+Interest Expense	51.7	35.9	38.5	50.1	61.1
Book Value of Assets	778.1	774.6	855.2	893.4	915.1
b. ROA	6.64%	4.63%	4.50%	5.61%	6.68%

- c. ROE is more volatile. Mydeco's debt level causes a large portion of EBIT to go to interest expense. This magnifies the volatility of earnings left over for shareholders through net income. ROA adjusts net income by the interest expense, and thus is less sensitive to leverage.

2-41. For fiscal year 2011, Peet's Coffee and Tea (PEET) had a net profit margin of 4.78%, asset turnover of 1.73, and a book equity multiplier of 1.21.

- a. **Use this data to compute Peet's ROE using the DuPont Identity.**
 b. **If Peet's managers wanted to increase its ROE by one percentage point, how much higher would their asset turnover need to be?**
 c. **If Peet's net profit margin fell by one percentage point, by how much would their asset turnover need to increase to maintain their ROE?**

a. Peet's ROE (DuPont) = $4.78\% \times 1.73 \times 1.21 = 10.00\%.$

b. Peet's new asset turnover = $\frac{11.00\%}{4.78\% \times 1.21} = 1.90$ or an increase of $1.90 - 1.73 = 0.17$.

c. Peet's new asset turnover = $\frac{10.00\%}{3.78\% \times 1.21} = 2.19$ or an increase of $2.19 - 1.73 = 0.36$.

2-42. For fiscal year 2011, Starbucks Corporation (SBUX) had total revenues of \$11.70 billion, net income of \$1.25 billion, total assets of \$7.36 billion, and total shareholder's equity of \$4.38 billion.

a. Calculate Starbucks' ROE directly, and using the DuPont Identity.

b. Comparing with the data for Peet's in problem 41, use the DuPont Identity to understand the difference between the two firms' ROEs.

a. Starbucks' ROE = $\frac{1.25}{4.38} = 28.54\%$.

Starbucks' net profit margin = $\frac{1.25}{11.70} = 10.68\%$.

Starbucks' asset turnover = $\frac{11.70}{7.36} = 1.59$.

Starbucks' equity multiplier = $\frac{7.36}{4.38} = 1.68$.

Starbucks's ROE (DuPont) = $10.68\% \times 1.59 \times 1.68 = 28.53\%$ (difference due to rounding).

b. Starbucks has a superior profit margin and a greater equity multiplier (which could represent higher leverage). However, it has a lower asset turnover. Its greater ROE is driven by its profit margin and its leverage.

2-43. Consider a retailing firm with a net profit margin of 3.5%, a total asset turnover of 1.8, total assets of \$44 million, and a book value of equity of \$18 million.

a. What is the firm's current ROE?

b. If the firm increased its net profit margin to 4%, what would be its ROE?

c. If, in addition, the firm increased its revenues by 20% (while maintaining this higher profit margin and without changing its assets or liabilities), what would be its ROE?

a. $3.5 \times 1.8 \times 44/18 = 15.4\%$.

b. $4 \times 1.8 \times 44/18 = 17.6\%$.

c. $4 \times (1.8 \times 1.2) \times 44/18 = 21.1\%$.