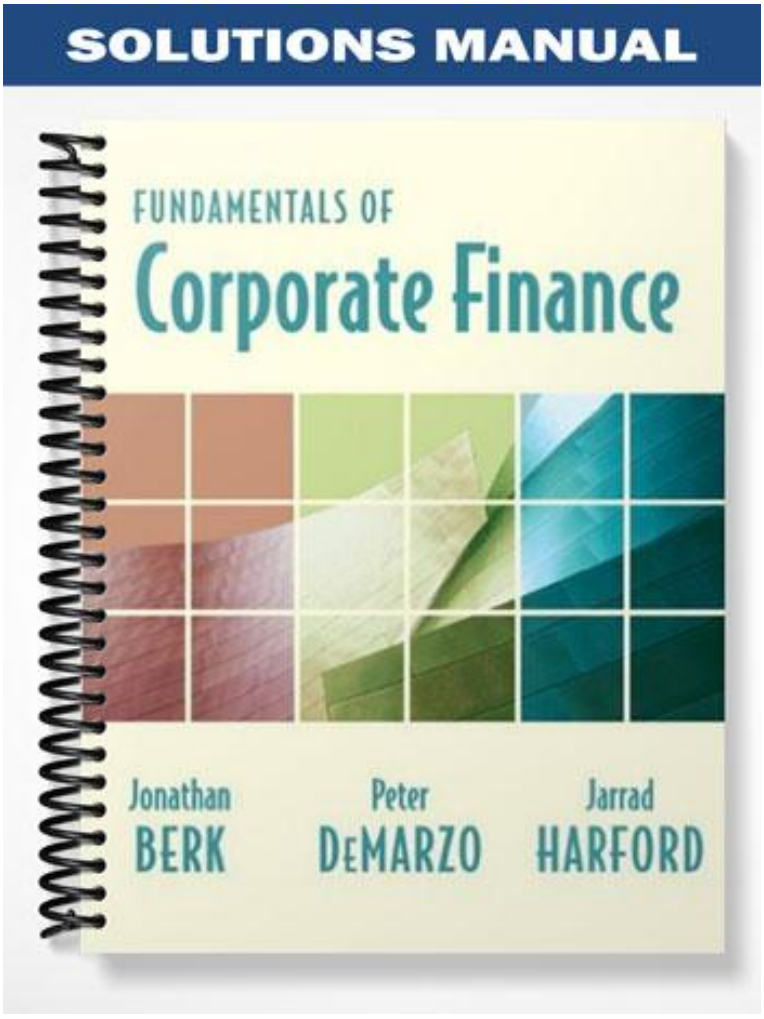
SOLUTIONS MANUAL



Chapter 2
Introduction to Financial Statement Analysis

Note: A box (■) indicates problems available in MyFinanceLab. An asterisk (*) indicates problems with a higher level of difficulty.

1. Each method will help find the same SEC filings. Yahoo! Finance also provides some analysis such as charts and key statistics.

2. 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 affect the balance sheet.
f. This event would not affect the balance sheet.

3. Global Conglomerate's book value of equity increased by $1 million from 2006 to 2007. 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 historical cost of the firm's assets, 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.

4. a. At the start of 2007, Peet's had cash and cash equivalents of $7.692 million.
b. Peet's total assets were $153.005 million.
c. Peet's total liabilities were $25.566 million, and it had no debt.
d. The book value of Peet's equity was $127.439 million.

5. **Plan:** 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 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.

Execute:

a. Market capitalization $= 10.3 \text{ billion} \times \$38 = \$391.4 \text{ billion}$

$$\text{Market-to-book ratio} = \frac{391.4}{117} = 3.35$$

b. $$\text{Book debt-equity ratio} = \frac{467}{117} = 3.99$$

$$\text{Market debt-equity ratio} = \frac{467}{391.4} = 1.19$$

c. $\text{Enterprise value} = 391.4 + 467 - 16 = 842.4$

Evaluate: GE has a market-to-book ratio of 3.35. Overtime equity investors invested $117B in GE; today that equity investment is worth $391.4B (or 3.35 times more). This indicates that GE's management has run the firm well, and equity investors expect excellent results in the future.

GE has a book debt-equity ratio of 3.99. Overtime equity investors invested $117B in GE and debt investors invested $467B (or 3.99 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 $391.4B in today's dollars. A very different picture.

GE has an enterprise value of $842.4B. In today's dollars investors value the entire company GE as having this value. This indicates highly valued company.

6. Apple's current ratio $= \frac{18.75}{6.99} = 2.68$

Apple's quick ratio $= \frac{18.75 - 0.25}{6.99} = 2.65$

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

8. Plan: The above 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.

Execute:

ANF's market-to-book ratio $= \frac{75.01 \times 86.67}{1{,}458} = 4.59$

GPS's market-to-book ratio $= \frac{20.09 \times 798.22}{5{,}194} = 3.09$

Evaluate: The market values in a relative sense the outlook of Abercrombie and Fitch more favorably than Gap. For every dollar of equity invested in ANF the market values that dollar today at $4.59 versus $3.09 for a dollar invested in the GPS. Equity investors are willing to pay relatively more today for shares of ANF than for GPS because they expect ANF to produce superior performance in the future.

9. a. Peet's revenues for 2006 were \$210.493 million.

$$\text{Increase in revenues} = \frac{210,493}{175,198} - 1 = 20.15\%$$

b. $$\text{Operating margin (2006)} = \frac{10,050}{210,493} = 4.77\%$$

$$\text{Operating margin (2005)} = \frac{15,848}{175,198} = 9.05\%$$

$$\text{Net profit margin (2006)} = \frac{7816}{210,493} = 3.71\%$$

$$\text{Net profit margin (2005)} = \frac{10,775}{175,198} = 6.15\%$$

c. Both margins decreased compared with the year before. The diluted earnings per share in 2006 was \$0.55. The number of shares used in calculation of diluted EPS was 14.202 million.

10. **Plan:** We are given some data about Global's financial results in 2006. Global launched a marketing campaign that increased sales but also decreased operating margins. We must calculate the effects of these changes on revenues, net income, and stock price.

Execute:

a. Revenues in 2007 = 1.15 × 186.7 = \$214.705 million.
EBIT in 2007 = 4.50% × 214.705 = \$9.66 million (there is no other income).
EBIT in 2006 = 5.57% × 186.70 = \$10.39 million.

b. Net income in 2006 = EBIT − interest expenses − taxes
= (9.66 − 7.7) × (1 − 26%)
= \$1.45 million.
Net income in 2007 = BEIT − interest expenses − taxes
= (10.39 −7.7) × (1 − 26%)
= \$1.99 million.

c. $$\text{Share price} = (\text{P/E ratio in 2006}) \times (\text{EPS in 2007}) = 25.2 \times \left(\frac{1.45}{3.6}\right) = \$10.15$$

Share price in 2007 = (P/E ratio in 2006) × (EPS in 2006) = 25.2 × (1.99/3.3) = \$13.93.

Evaluate: The new aggressive marketing campaign succeeded in raising revenues by 15%. Unfortunately operating margins fell from 5.57% to 4.50%, which reduced EBIT and net income. As a result the stock price fell from \$13.93 to \$10.15. The new marketing campaign destroyed stockholder value and is therefore a failure.

11. a. A \$10 million operating expense would be immediately expensed, increasing operating expenses by \$10 million. This would lead to a reduction in taxes of 35% × \$10 million = \$3.5 million. Thus, earnings would decline by 10 − 3.5 = \$6.5 million. There would be no effect on next year's earnings.

b. Capital expenses do not affect earnings directly. However, the depreciation of \$2 million would appear each year as an operating expense. With a reduction in taxes of 2 × 35% = \$0.7 million, earnings would be lower by 2 − 0.7 = \$1.3 million for each of the next five years.

12. **Plan:** The above 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.

Execute:

a. **Firm A:** Market debt-equity ratio $= \frac{500}{400} = 1.25$

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

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

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

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

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

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

13. **Plan:** The above table presents raw data about Sales, Accounts Receivable, and Inventory data for Wal-Mart and Target. While useful, this information does not easily tell us 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.

Execute:

a. Wal-Mart: Accounts Receivable Days $= \frac{2767}{\left(\frac{348{,}650}{365}\right)} = 2.90$

Target: Accounts Receivable Days $= \frac{6397}{\left(\frac{59{,}490}{365}\right)} = 39.25$

b. Wal-Mart: Inventory Turnover $= \frac{348{,}650}{34{,}184} = 10.20$

Target: Inventory Turnover $= \frac{59{,}490}{6645} = 8.95$

Evaluate: Wal-Mart is managing its accounts receivable and inventory more efficiently, as shown by the above ratios. Wal-Mart collects its Accounts Receivable in 2.90 days as opposed to 39.25 days for Target. Likewise Wal-Mart turns over its inventory 10.20 times a year as opposed to 8.95 times for Target.

14. **Plan:** 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.

Execute:

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. Since 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.

Evaluate: 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.

15. **Plan:** A portfolio manager wishes to add some airline shares to the pension plan she is managing. She would like to get a good evaluation of the relative valuations of each airline as a starting point for her investment decision. Her job is to determine the best way to estimate relative values.

Execute:

a. Market capitalization-to-revenue ratio $= \dfrac{6.7}{22.6} = 0.30$ for American Airlines

$= \dfrac{11.7}{14.3} = 0.82$ for British Airways

b. Enterprise value-to-revenue ratio $= \dfrac{(6.7 + 13.4 - 0.12)}{22.6} = 0.88$ for American Airlines

$= \dfrac{(11.7 + 6.9 - 3.0)}{14.3} = 1.09$ for British Airways

Evaluate: The market capitalization-to-revenue ratio cannot be meaningfully compared when the firms have different amounts of leverage, as market capitalization measures only the value of the firm's equity. The enterprise value-to-revenue ratio is therefore more useful when firm's leverage is quite different, as it is here.

***16. Plan:** Peet's Coffee and Tea management uses the well known DuPont identity to measure ROE and the components of ROE. Management wants to know how much of an increase in asset turnover would be needed to raise ROE by a percentage point.

Execute:

a. Peet's net profit margin $= \frac{7816}{210{,}493} = 3.71\%$

Peet's asset turnover $= \frac{210{,}493}{153{,}005} = 1.38$

Peet's asset multiplier $= \frac{153{,}005}{127{,}439} = 1.20$

b. Peet's ROE $= \frac{7816}{127{,}439} = 6.13\%$

Peet's ROE (DuPont) $= 3.71\% \times 1.38 \times 1.20 = 6.14\%$ (difference due to rounding)

c. Peet's Revised ROE = 3.71% × 1.60 × 1.20 = 7.13%.

Evaluate: Peet's current ROE is approximately 6.13% with an asset turnover of 1.38 times. To raise ROE to 7.14%, Peet's would have to increase its asset turnover to 1.60 times.

17. Plan: Starbucks hires a new financial analyst who used to work for Peet's. The analyst would like to perform the same type of DuPont analysis on Starbucks that was used at Peet's.

Execute:

a. Starbucks' net profit margin $= \frac{672{,}638}{9{,}411{,}497} = 7.15\%$

Starbucks' asset turnover $= \frac{9{,}411{,}497}{5{,}343{,}878} = 1.76$

Starbucks' asset multiplier $= \frac{5{,}343{,}878}{2{,}284{,}117} = 2.34$

b. Starbucks' ROE $= \frac{672{,}638}{2{,}284{,}117} = 29.45\%$

Starbucks' ROE (DuPont) $= 7.15\% \times 1.76 \times 2.34 = 29.45\%$

Evaluate: Starbucks has a higher ROE than Peet's. This is because Starbucks has a higher net profit margin, asset turnover, and asset multiplier.

18. a. Net cash provided by operating activities was $17.774 million in 2006.

b. Depreciation and amortization expenses were $10.244 million in 2006.

c. Net cash used in new property and equipment was $44.415 million in 2006.

d. Net cash used by financing activities was $11.322 million, and $12.046 million was used to repurchase the stock (net of new sales of stock).

19. a. Heinz's cumulative earnings over these four quarters was $796.90 million. Its cumulative cash flows from operating activities was $1.03 billion.

b. Fraction of cash from operating activities used for investment over the four quarters:

	1-Aug-07	2-May-07	31-Jan-07	1-Nov-06	4 Quarters
Operating Activities	9,166	672,623	125,137	219,893	1,026,769
Investing Activities	–101,216	–99,353	–97,921	–115,348	–413,838
CFI/CFO	1110.31%	14.77%	78.25%	52.46%	40.30%

c. Fraction of cash from operating activities used for financing over the four quarters:

	1-Aug-07	2-May-07	31-Jan-07	1-Nov-06	4 Quarters
Operating Activities	9,166	672,623	125,137	219,893	1,026,769
Financing Activities	–224,347	–384,502	–858	–93,206	–702,913
CFF/CFO	2447.60%	57.16%	0.69%	42.39%	68.46%

20. **Plan:** 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.

Execute:

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)

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

21. **Plan:** 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.

Execute:

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, and add $4 million (−6 + 10) for three following years.

Evaluate: 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 which recognizes that the value of the asset, which has already been paid for, is declining in value) which the firm does not have to pay out. Since 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 4 years will lower Nokela's tax bill by $4 million ($10 million × 0.4) per year.

22. **Plan:** You are presented with a large amount of financial information over several years about Clorox Company. You are asked to analyze this information around issues of profitability, and book and market values of equity for your boss.

Execute:

a. The book value of Clorox's equity decreased by $2.101 billion compared with that at the end of previous quarter, and was negative.
b. Because the book value of equity is negative in this case, Clorox's market-to-book ratio and its book debt-equity ratio are not meaningful. Its market debt-equity ratio may be used in comparison.
c. Information from the statement of cash flows helped explain that the decrease of book value of equity resulted from an increase in debt that was used to repurchase $2.110 billion worth of the firm's shares.
d. Negative book value of equity does not necessarily mean the firm is unprofitable. Loss in gross profit is only one possible cause. If a firm borrows to repurchase shares or invest in intangible assets (such as R&D), it can have a negative book value of equity.

Evaluate: Clorox issued debt to buy back $2.11 billion in equity. Obviously that resulted in a large increase in outstanding debt and a large decline in outstanding equity. This resulted in the book value of Clorox's equity being negative. On the surface a negative book value of equity would suggest an unprofitable if not failed firm. The reality in this case is much more complicated.

23. a. Deloitte and Touche LLP audited these financial statements.
b. Peet's chief executive officer, chief financial officer, and board of directors certified the financial statements.

24. **Plan:** When a business firm spends money for business activities, some of the money spent is for operating expenses that are expensed for the current period and some is for capital assets that are capitalized and written off (depreciated in future periods) over the life of the asset. What is the tax benefit of a dollar of expense this year versus a dollar of depreciation expense in some future period.

Execute: If a firm can spend $1.00 and have it classified as an expense in the current year, it can deduct it as a tax-deductible expense. If the firm is in the 35% income tax bracket, it will save $0.35 in taxes in the current year. If a firm can spend $1.00 and have it classified as an investment in a capital asset it gets no tax deduction in the current year. It can deduct it as a tax-deductible expense in a future year. If the firm is in the 35% income tax bracket, it will save $0.35 in taxes in that future year. Any firm would want to reduce its tax payments by $0.35 in the current year as opposed to $0.35 in some future year.

Evaluate: By reclassifying $3.85 billion operating expenses as capital expenditures, Worldcom increased its net income but lowered its cash flow for that period. If a firm could legitimately choose how to classify an expense, expensing as much as possible in a profitable period rather than capitalizing them will save more on taxes, which results in higher cash flow and thus is better for the firm's investors.