Chapter 9
Financial Statements, Cash Flow, and Taxes
ANSWERS TO END-OF-CHAPTER QUESTIONS

9-1  a. The annual report is a report issued annually by a corporation to its stockholders. It contains basic financial statements, as well as management’s opinion of the past year’s operations and the firm’s future prospects. A firm’s balance sheet is a statement of the firm’s financial position at a specific point in time. It specifically lists the firm’s assets on the left-hand side of the balance sheet, while the right-hand side shows its liabilities and equity, or the claims against these assets. An income statement is a statement summarizing the firm’s revenues and expenses over an accounting period. Net sales are shown at the top of each statement, after which various costs, including income taxes, are subtracted to obtain the net income available to common stockholders. The bottom of the statement reports earnings and dividends per share.

b. Common Stockholders’ Equity (Net Worth) is the capital supplied by common stockholders—capital stock, paid-in capital, retained earnings, and, occasionally, certain reserves. Paid-in capital is the difference between the stock’s par value and what stockholders paid when they bought newly issued shares. Retained earnings is the portion of the firm’s earnings that have been saved rather than paid out as dividends.

c. The statement of retained earnings shows how much of the firm’s earnings were retained in the business rather than paid out in dividends. Note that retained earnings represents a claim against assets, not assets per se. Firms retain earnings primarily to expand the business, not to accumulate cash in a bank account. The statement of cash flows reports the impact of a firm’s operating, investing, and financing activities on cash flows over an accounting period.

d. Depreciation is a non-cash charge against tangible assets, such as buildings or machines. It is taken for the purpose of showing an asset’s estimated dollar cost of the capital equipment used up in the production process. Amortization is a non-cash charge against intangible assets, such as goodwill. EBITDA is earnings before interest, taxes, depreciation, and amortization.
e. Operating current assets are the current assets used to support operations, such as cash, accounts receivable, and inventory. It does not include short-term investments. Operating current liabilities are the current liabilities that are a natural consequence of the firm’s operations, such as accounts payable and accruals. It does not include notes payable or any other short-term debt that charges interest. Net operating working capital is operating current assets minus operating current liabilities. Operating capital is sum of net operating working capital and operating long-term assets, such as net plant and equipment. Operating capital also is equal to the net amount of capital raised from investors. This is the amount of interest-bearing debt plus preferred stock plus common equity minus short-term investments.

f. Accounting profit is a firm’s net income as reported on its income statement. Net cash flow, as opposed to accounting net income, is the sum of net income plus non-cash adjustments. NOPAT, net operating profit after taxes, is the amount of profit a company would generate if it had no debt and no financial assets. Free cash flow is the cash flow actually available for distribution to investors after the company has made all investments in fixed assets and working capital necessary to sustain ongoing operations.

g. Market value added is the difference between the market value of the firm (i.e., the sum of the market value of common equity, the market value of debt, and the market value of preferred stock) and the book value of the firm’s common equity, debt, and preferred stock. If the book values of debt and preferred stock are equal to their market values, then MVA is also equal to the difference between the market value of equity and the amount of equity capital that investors supplied. Economic value added represents the residual income that remains after the cost of all capital, including equity capital, has been deducted.

h. A progressive tax means the higher one’s income, the larger the percentage paid in taxes. Taxable income is defined as gross income less a set of exemptions and deductions which are spelled out in the instructions to the tax forms individuals must file. Marginal tax rate is defined as the tax rate on the last unit of income. Average tax rate is calculated by taking the total amount of tax paid divided by taxable income.

i. Capital gain (loss) is the profit (loss) from the sale of a capital asset for more (less) than its purchase price. Ordinary corporate operating losses can be carried backward for 2 years or forward for 20 years to offset taxable income in a given year.

j. Improper accumulation is the retention of earnings by a business for the purpose of enabling stockholders to avoid personal income taxes on dividends. An S corporation is a small corporation which, under Subchapter S of the Internal Revenue Code, elects to be taxed as a proprietorship or a partnership yet retains limited liability and other benefits of the corporate form of organization.
9-2 The four financial statements contained in most annual reports are the balance sheet, income statement, statement of retained earnings, and statement of cash flows.

9-3 No, because the $20 million of retained earnings would probably not be held as cash. The retained earnings figure represents the reinvestment of earnings by the firm. Consequently, the $20 million would be an investment in all of the firm’s assets.

9-5 Operating capital is the amount of interest bearing debt, preferred stock, and common equity used to acquire the company’s net operating assets. Without this capital a firm cannot exist, as there is no source of funds with which to finance operations.

9-6 NOPAT is the amount of net income a company would generate if it had no debt and held no financial assets. NOPAT is a better measure of the performance of a company’s operations because debt lowers income. In order to get a true reflection of a company’s operating performance, one would want to take out debt to get a clearer picture of the situation.

9-7 Free cash flow is the cash flow actually available for distribution to investors after the company has made all the investments in fixed assets and working capital necessary to sustain ongoing operations. It is the most important measure of cash flows because it shows the exact amount available to all investors.

9-8 Double taxation refers to the fact that corporate income is subject to an income tax, and then stockholders are subject to a further personal tax on dividends received.

9-9 If the business were organized as a partnership or a proprietorship, its income could be taken out by the owners without being subject to double taxation. Also, if you expected to have losses for a few years while the company was getting started, if you were not incorporated, and if you had outside income, the business losses could be used to offset your other income and reduce your total tax bill. These factors would lead you to not incorporate the business. An alternative would be to organize as an S Corporation, if requirements are met.
9-1 Corporate yield = 9%; T = 35.5%
AT yield = 9%(1 - T)
= 9%(0.645) = 5.76%.

9-2 Married Taxable Income = $97,000. Federal taxes = ?
Taxes = $6,780 + ($97,000 - $45,200)0.275
= $21,025.

9-3 Corporate bond yields 8%. Municipal bond yields 6%.

Equivalent pretax yield = \( \frac{\text{Yield on muni}}{\text{Yield on taxable bond}} \)\(^{(1 - T)}\)
8% = \( \frac{6\%}{(1 - T)} \)
0.08 - 0.08T = 0.06
- 0.08T = -0.02
T = 25%.

9-4 Income $365,000
Less Interest deduction (50,000)
Plus: Dividends received\(^a\) 4,500
Taxable income $319,500

\(^a\)For a corporation, 70% of dividends received are excluded from taxes; therefore, taxable dividends are calculated as $15,000(1 - 0.70) = $4,500.

Tax = $22,250 + ($319,500 - $100,000)(0.39) = $22,250 + $85,605 = $107,855.

After-tax income:

<table>
<thead>
<tr>
<th>Taxable income</th>
<th>$319,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxes</td>
<td>(107,855)</td>
</tr>
<tr>
<td>Plus Non-taxable dividends received(^b)</td>
<td>10,500</td>
</tr>
<tr>
<td>Net income</td>
<td>$222,145</td>
</tr>
</tbody>
</table>

\(^b\)Non-taxable dividends are calculated as $15,000 x 0.7 = $10,500.

The company’s marginal tax rate is 39 percent. The company’s average tax rate is $107,855/$319,500 = 33.76%.

Mini Case: 9 - 4
9-5  
  a. Tax = $3,400,000 + ($10,500,000 - $10,000,000)(0.35) = $3,575,000. 
  b. Tax = $1,000,000(0.35) = $350,000. 
  c. Tax = ($1,000,000)(0.30)(0.35) = $105,000. 

9-6  
  A-T yield on FLA bond = 5%. 
  A-T yield on AT&T bond = 7.5% - Taxes = 7.5% - 7.5%(0.35) = 4.875%. 
  Check: Invest $10,000 @ 7.5% = $750 interest. 
  Pay 35% tax, so A-T income = $750(1 - T) = $750(0.65) = $487.50. 
  A-T rate of return = $487.50/$10,000 = 4.875%. 
  A-T yield on AT&T preferred stock: 
  A-T yield = 6% - Taxes = 6% - 0.3(6%)(0.35) = 6% - 0.63% = 5.37%. 
  Therefore, invest in AT&T preferred stock. We could make this a harder 
  problem by asking for the tax rate that would cause the company to 
  prefer the Florida bond or the AT&T bond. 

9-7  
  EBIT = $750,000; DEP = $200,000; 100% Equity; T = 40% 
  NI = ?; NCF = ?; OCF = ? 
  First, determine net income by setting up an income statement: 
  
  | EBIT        | $750,000 |
  | Interest    | 0        |
  | EBT         | $750,000 |
  | Taxes (40%) | 300,000  |
  | NI          | $450,000 |

  NCF = NI + DEP = $450,000 + $200,000 = $650,000.
Mini Case: 9 - 6

9-8  a.  

<table>
<thead>
<tr>
<th></th>
<th>Income Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales revenues</td>
<td>$12,000,000</td>
</tr>
<tr>
<td>Costs except</td>
<td></td>
</tr>
<tr>
<td>depreciation</td>
<td>9,000,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>1,500,000</td>
</tr>
<tr>
<td>EBT</td>
<td>$ 1,500,000</td>
</tr>
<tr>
<td>Taxes (40%)</td>
<td>600,000</td>
</tr>
<tr>
<td>Net income</td>
<td>$  900,000</td>
</tr>
<tr>
<td>Add back depreciation</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Net cash flow</td>
<td>$ 2,400,000</td>
</tr>
</tbody>
</table>

b. If depreciation doubled, taxable income would fall to zero and taxes would be zero. Thus, net income would decrease to zero, but net cash flow would rise to $3,000,000. Menendez would save $600,000 in taxes, thus increasing its cash flow:

$$\Delta CF = T(\Delta \text{Depreciation}) = 0.4(\$1,500,000) = $600,000.$$ 

c. If depreciation were halved, taxable income would rise to $2,250,000 and taxes to $900,000. Therefore, net income would rise to $1,350,000, but net cash flow would fall to $2,100,000.

d. You should prefer to have higher depreciation charges and higher cash flows. Net cash flows are the funds that are available to the owners to withdraw from the firm and, therefore, cash flows should be more important to them than net income.
a. NOPAT = EBIT(1 - Tax rate)
   = $150,000,000(0.6)
   = $90,000,000.

b. NOWC_{01} = Operating CA - operating CL
   = $360,000,000 - ($90,000,000 + $60,000,000)
   = $210,000,000.

   NOWC_{02} = $372,000,000 - $180,000,000 = $192,000,000.

c. Operating capital_{01} = Net plant and equipment + Net operating working capital
   = $250,000,000 + $210,000,000
   = $460,000,000.

   Operating capital_{02} = $300,000,000 + $192,000,000
   = $492,000,000.

d. FCF = NOPAT - Net investment in operating capital
   = $90,000,000 - ($492,000,000 - $460,000,000)
   = $58,000,000.

e. The large increase in dividends for 2002 can most likely be attributed to a large increase in free cash flow from 2001 to 2002, since FCF represents the amount of cash available to be paid out to stockholders after the company has made all investments in fixed assets and working capital necessary to sustain the business.

<table>
<thead>
<tr>
<th>9-10</th>
<th>Prior Years</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit earned</td>
<td>$150,000</td>
<td>$150,000</td>
<td></td>
</tr>
<tr>
<td>Carry-back credit</td>
<td>150,000</td>
<td>150,000</td>
<td></td>
</tr>
<tr>
<td>Adjusted profit</td>
<td>$ 0</td>
<td>$ 0</td>
<td></td>
</tr>
<tr>
<td>Tax previously paid (40%)</td>
<td>$60,000</td>
<td>$60,000</td>
<td></td>
</tr>
<tr>
<td>Tax refund: Taxes previously paid</td>
<td>$60,000</td>
<td>$60,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total check from U.S. Treasury</strong></td>
<td>$60,000 + $60,000 = $120,000.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9-10</th>
<th>Future Years</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated profit</td>
<td>$150,000</td>
<td>$150,000</td>
<td>$150,000</td>
<td>$150,000</td>
<td>$150,000</td>
<td></td>
</tr>
<tr>
<td>Carry-forward credit</td>
<td>150,000</td>
<td>150,000</td>
<td>50,000</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Adjusted profit</td>
<td>$ 0</td>
<td>$ 0</td>
<td>$100,000</td>
<td>$150,000</td>
<td>$150,000</td>
<td></td>
</tr>
<tr>
<td>Tax (at 40%)</td>
<td>$ 0</td>
<td>$ 0</td>
<td>$40,000</td>
<td>$60,000</td>
<td>$60,000</td>
<td></td>
</tr>
</tbody>
</table>

*Mini Case: 9 - 7*
9-11  a. Calculation of gross income:

   | Salary              | $82,000 |
   | Dividend Income     | $12,000 |
   | Interest Income     | $5,000  |
   | ST capital gains    | $1,000  |

   Gross Income = $100,000

   LT capital gains** = $13,000

   **Applicable tax rate = 20%.

Calculation of taxable income:

   Gross income = $100,000
   Exemption and deductions = (10,000)
   Taxable income = $90,000
   (excluding LT capital gains)

   Tax = $14,645 + ($90,000 - $65,550)(0.305) + $13,000(0.20)
   = $22,102.25 + $2,600 = $24,702.25.

b. On the basis of these figures, Visscher should incorporate, since her expected tax liability is less each year as a corporation and since she plans to retain all income in excess of her salary in the business. However, if Visscher planned to withdraw earnings in the future, she would have to consider the effects of double taxation on dividends she would receive when she withdrew earnings. Of course, Visscher could avoid double taxation simply by raising her salary.

9-12 a. Calculation of gross income:

   | Income Source         |         |
   | Salary               | $82,000 |
   | Dividend Income      | $12,000 |
   | Interest Income      | $5,000  |
   | ST capital gains     | $1,000  |

   Gross Income (excluding LT capital gains) = $100,000

   LT capital gains** = $13,000

   **Applicable tax rate = 20%.

Calculation of taxable income:

   Gross income = $100,000
   Exemption and deductions = (10,000)
   Taxable income = $90,000
   (excluding LT capital gains)

   Tax = $14,645 + ($90,000 - $65,550)(0.305) + $13,000(0.20)
   = $22,102.25 + $2,600 = $24,702.25.
b. Marginal tax rate = 30.5%.

Average tax rate = $24,702.25/$103,000 = 24.0%.

*Includes $13,000 long-term capital gain; ($100,000 + $13,000 = $113,000).

c. After-tax returns:

Disney = (0.08)($5,000) - (0.305)($5,000)(0.08) = $278.
FLA = (0.06)($5,000) - 0 = $300.

Viewed another way, the Disney bonds provide an after-tax yield of

8%(1 - T) = 8%(1 - 0.305) = 8%(0.695) = 5.56%.

The Florida bonds provide an after-tax yield of 6 percent; hence they are better for her.

d. 6% = 8%(1 - T). Now solve for T:

6 = 8 - 8T
8T = 2
T = 2/8 = 25%.

At a tax rate less than 25%, Mary would be better off holding 8% taxable bonds, but at a tax rate over 25%, she would be better off holding tax-exempt municipal bonds. Given our progressive tax rate system, it makes sense for wealthy people to hold tax-exempt bonds, but not for those with lower incomes and consequently lower tax rates.