**Case Solutions**

***Corporate Finance: Principles and Applications***

**5th edition**

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***CHAPTER 1***

**EAST COAST YACHTS**

**1.** An LLC (limited liability company) is essentially a hybrid form of a partnership (or sole proprietorship) and a corporation. The goal is to operate like a partnership or sole proprietorship, but have limited liability for the owner(s). The advantages to an LLC are: 1) Reduction of personal liability. A sole proprietor has unlimited liability, which can include the potential loss of all personal assets. 2) Taxes. Forming an LLC may mean that more expenses can be considered business expenses and be deducted from the company’s income. 3) Improved credibility. The business may have increased credibility in the business world compared to a sole proprietorship 4) Ability to attract investment. Corporations, even LLCs, can raise capital through the sale of equity. 5) Continuous life. Sole proprietorships have a limited life, while corporations have a potentially perpetual life. 6) Transfer of ownership. It is easier to transfer ownership in a corporation through the sale of stock. 7) Potential for reduced agency problems compared to a corporation.

The biggest disadvantage is the potential cost, although the cost of forming an LLC can be relatively small. Another potential disadvantage is double taxation, which applies to corporations and LLCs, but can be avoided for the LLC if certain specific criteria are met. There are also other potential costs, including more expansive record-keeping.

**2.** Forming a corporation has the same advantages as forming an LLC, but the costs are likely to be higher.

**3.** As a small company, changing to an LLC is probably the most advantageous decision at the current time. If the company grows, and Larissa is willing to sell equity ownership, the company can reorganize as a corporation at a later date. Additionally, forming an LLC is likely to be less expensive than forming a corporation.

***CHAPTER 2***

**CASH FLOWS AT EAST COAST YACHTS**

The operating cash flow for the company is:

OCF = EBIT + Depreciation – Current taxes

OCF = $87,531,900 + 19,958,400 – 30,512,400

OCF = $76,877,900

To calculate the cash flow from assets, we need to find the capital spending and change in net working capital. The capital spending for the year was:

|  |  |  |
| --- | --- | --- |
|  | *Capital spending* |  |
|  | Ending net fixed assets | $350,435,700 |
|  | – Beginning net fixed assets | 317,612,300 |
|  | + Depreciation | 19,958,400 |
|  | Net capital spending | $52,781,800 |

Alternatively, the company purchased $59.5 million in fixed assets and sold $6,718,200, for a total capital spending of $52,781,800.

And the change in net working capital was:

|  |  |  |
| --- | --- | --- |
|  | *Change in net working capital* | |
|  | Ending NWC | $538,300 |
|  | – Beginning NWC | –1,142,400 |
|  | Change in NWC | $1,680,700 |

So, the cash flow from assets was:

|  |  |  |
| --- | --- | --- |
|  | *Cash flow from assets* |  |
|  | Operating cash flow | $76,877,900 |
|  | – Net capital spending | 52,781,800 |
|  | – Change in NWC | 1,680,700 |
|  | Cash flow from assets | $22,415,400 |

The cash flow to creditors was:

|  |  |  |
| --- | --- | --- |
|  | *Cash flow to creditors* |  |
|  | Interest | $11,000,900 |
|  | Retirement of debt | 22,600,000 |
|  | Debt service | $33,600,900 |
|  | – Proceeds from sale of long-term debt | –40,000,000 |
|  | Total | –$6,399,100 |

|  |  |  |
| --- | --- | --- |
|  | *Alternatively* |  |
|  | Beginning long-term debt | $151,860,000 |
|  | Ending long-term debt | 169,260,000 |
|  | Interest | 11,000,900 |
|  | Total | –$6,399,100 |

The cash flow to stockholders was:

|  |  |  |
| --- | --- | --- |
|  | *Cash flow to stockholders* |  |
|  | Dividends | $17,374,500 |
|  | Repurchase of stock | 35,640,000 |
|  | Cash to stockholders | $53,014,500 |
|  | – Proceeds from new stock issue | 24,200,000 |
|  | Total | $28,814,500 |

|  |  |  |
| --- | --- | --- |
|  | *Alternatively* |  |
|  | Beginning total equity | $164,609,900 |
|  | – Ending total equity | 181,714,000 |
|  | Dividends | 17,374,500 |
|  | Retained earnings | 28,544,100 |
|  | Total | $28,814,500 |

And the cash flow identity was:

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders

$22,415,400 = –$6,399,100 + 28,814,500

The accounting statement of cash flows for the year was:

|  |  |  |
| --- | --- | --- |
|  | Accounting Statement of Cash Flows | |
|  | Operations |  |
|  | Net income | $45,918,600 |
|  | Depreciation | 19,958,400 |
|  | Changes in assets and liabilities |  |
|  | Accounts receivable | 243,300 |
|  | Inventories | –3,059,550 |
|  | Accounts payable | 979,350 |
|  | Accrued expenses | 705,900 |
|  | Other | –74,500 |
|  | Total cash flow from operations | $64,671,500 |
|  |  |  |
|  | Investing activities |  |
|  | Acquisition of fixed assets | –$59,500,000 |
|  | Sale of fixed assets | 6,718,200 |
|  | Total cash flow from investing activities | –$52,781,800 |
|  |  |  |
|  | Financing activities |  |
|  | Retirement of debt | –$22,600,000 |
|  | Proceeds of long-term debt | 40,000,000 |
|  | Dividends | –17,374,500 |
|  | Repurchase of stock | –35,640,000 |
|  | Proceeds from new stock issues | 24,200,000 |
|  | Total cash flow from financing activities | –$11,414,500 |
|  |  |  |
|  | Change in cash (on balance sheet) | $475,200 |

*Answers to questions*

**1.** The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations. The firm invested $1,680,700 in new net working capital and $52,781,800 in new fixed assets. The firm received $6,399,100 from its creditors, and paid $28,814,500 to its stockholders.

**2.** The financial cash flows statement presents a more accurate picture of the company since it accurately reflects interest cash flows as a financing decision rather than an operating decision.

**3.** The expansion plans look like they are probably a good idea since the company appears to have fairly strong operating cash flow, although the company already invested a significant amount in fixed assets during the past year. This decision will be discussed in more detail later in the book.

***CHAPTER 3***

**RATIOS AND FINANCIAL PLANNING AT EAST COAST YACHTS**

**1.** Preferred stock has features of both debt and equity. Preferred shareholders receive a stated dividend, and, if the corporation is liquidated, preferred shareholders get a stated value. Often, preferred stocks carry credit ratings much like those of bonds. Furthermore, preferred stock is sometimes convertible into common stock, and preferred stocks are often callable.

In addition, many issues of preferred stock have obligatory sinking funds. The existence of such a sinking fund effectively creates a final maturity because it means that the entire issue will ultimately be retired. For these reasons, preferred stock seems to be a lot like debt. However, for tax purposes, preferred dividends are treated like common stock dividends.

Whether preferred stock is equity or debt is debatable. Never the less, we will include preferred stock in the company’s total equity. As a practical matter, since preferred stock makes up about one percent of the total equity, it will make little difference in this case.

**2.** The calculations for the ratios listed are:

Current ratio = Current assets/Current liabilities

Current ratio = $51,123,050/$50,584,750

Current ratio = 1.01 times

Quick ratio = (Current assets – Inventory)/Current liabilities

Quick ratio = ($51,123,050 – 20,149,650)/$50,584,750

Quick ratio = .61 times

Total asset turnover = Sales/Total assets

Total asset turnover = $611,582,000/$401,558,750

Total asset turnover = 1.52 times

Inventory turnover = COGS/Inventory

Inventory turnover = $431,006,000/$20,149,650

Inventory turnover = 21.39 times

Receivables turnover = Sales/Accounts receivable

Receivables turnover = $611,582,000/$18,681,500

Receivables turnover = 32.74 times

Total debt ratio = (Total assets – Total equity)/Total assets

Total debt ratio = ($401,558,750 – 181,714,000)/$401,558,750

Total debt ratio = .55 times

Debt-equity ratio = (Current liabilities + Long-term debt)/Total equity

Debt-equity ratio = ($50,584,750 + 169,260,000)/$181,714,000

Debt-equity ratio = 1.21 times

Equity multiplier = Total assets/Total equity

Equity multiplier = $401,558,750/$181,714,000

Equity multiplier = 2.21 times

Interest coverage = EBIT/Interest

Interest coverage = $87,531,900/$11,000,900

Interest coverage = 7.96 times

Profit margin = Net income/Sales

Profit margin = $45,918,600/$611,582,000

Profit margin = .0751, or 7.51%

Return on assets = Net income/Total assets

Return on assets = $45,918,600/$401,558,750

Return on assets = .1144, or 11.44%

Return on equity = Net income/Total equity

Return on equity = $45,918,600/$181,714,000

Return on equity = .2527, or 25.27%

**3.** Regarding the liquidity ratios, East Coast Yachts’ current ratio is below the median industry ratio. This implies the company has less liquidity than the industry in general. However, the current ratio is above the lower quartile, so there are companies in the industry with lower liquidity than East Coast Yachts. The company may have more predictable cash flows, or more access to short-term borrowing.

The turnover ratios are all higher than the industry median; in fact, all three turnover ratios are above the upper quartile. This may mean that East Coast Yachts is more efficient than the industry in using its assets to generate sales.

The financial leverage ratios are all at or above the industry median, but below the upper quartile. East Coast Yachts generally has more debt than comparable companies, but is still within the normal range. The exceptions are the interest coverage ratio, which is only slightly below the industry median, and the debt ratio, which is essentially equal to the industry median.

The profit margin for the company is about the same as the industry median, the ROA is slightly higher than the industry median, and the ROE is well above the industry median. East Coast Yachts seems to be performing well in the profitability area.

Overall, East Coast Yachts’ performance seems good, although the liquidity ratios indicate that a closer look may be needed in this area.

Below is a list of possible reasons why it may be good or bad that each ratio is higher or lower than the industry. Note that the list is not exhaustive, but merely one possible explanation for each ratio.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ratio** | **Good** | **Bad** |
|  | Current ratio | Better at managing current accounts. | May be having liquidity problems. |
|  | Quick ratio | Better at managing current accounts. | May be having liquidity problems. |
|  | Total asset turnover | Better at utilizing assets. | Assets may be older and depreciated, requiring extensive investment soon. |
|  | Inventory turnover | Better at inventory management, possibly due to better procedures. | Could be experiencing inventory shortages. |
|  | Receivables turnover | Better at collecting receivables. | May have credit terms that are too strict. Decreasing receivables turnover may increase sales. |
|  | Total debt ratio | Less debt than industry median means the company is less likely to experience credit problems. | Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE. |
|  | Debt-equity ratio | Less debt than industry median means the company is less likely to experience credit problems. | Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE. |
|  | Equity multiplier | Less debt than industry median means the company is less likely to experience credit problems. | Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE. |
|  | Interest coverage | Less debt than industry median means the company is less likely to experience credit problems. | Increasing the amount of debt can increase shareholder returns. Especially notice that it will increase ROE. |
|  | Profit margin | The PM is slightly above the industry median, so it is performing better than many peers. | May be able to better control costs. |
|  | ROA | Company is performing above many of its peers. | Assets may be old and depreciated relative to industry. |
|  | ROE | Company is performing above many of its peers. | Profit margin and EM could still be increased, which would further increase ROE. |

If you created an Inventory to Current liabilities ratio, East Coast Yachts would have a ratio that is lower than the industry median. The current ratio and quick ratio are both below the industry median. This implies that East Coast Yachts also has less inventory to current liabilities than the industry median.

**4.** To calculate the sustainable growth rate, we first need to find the ROE and the retention ratio, so:

ROE = NI/TE

ROE = $45,918,600/$181,714,000

ROE = .2527, or 25.27%

*b* = Addition to RE/NI

*b* = $28,544,100/$45,918,600

*b* = .62, or 62%

So, the sustainable growth rate is:

Sustainable growth rate = (ROE × *b*)/[1 – (ROE × *b*)]

Sustainable growth rate = [.2527(.62)]/[1 – .2527(.62)]

Sustainable growth rate = .1864, or 18.64%

The sustainable growth rate is the growth rate the company can achieve with no external financing while maintaining a constant debt-equity ratio.

At the sustainable growth rate, the pro forma statements next year will be:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Income statement* | |  |  |  |
|  | Sales | $725,553,856 |  |  |  |
|  | COGS | 511,326,470 |  |  |  |
|  | Other expenses | 86,705,644 |  |  |  |
|  | Depreciation | 19,958,400 |  |  |  |
|  | EBIT | $107,563,341 |  |  |  |
|  | Interest | 11,000,900 |  |  |  |
|  | Taxable income | $96,562,441 |  |  |  |
|  | Taxes (40%) | 38,624,977 |  |  |  |
|  | Net income | $57,937,465 |  |  |  |
|  |  |  |  |  |  |
|  | Dividends | $21,922,151 |  |  |  |
|  | Add to RE | $36,015,314 |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Balance Sheet* | | | | |
|  | Assets | |  | Liabilities & Equity | |
|  | Current assets |  |  | Current liabilities |  |
|  | Cash and equivalents | $13,191,921 |  | Accounts payable | $52,747,218 |
|  | Accounts receivable | 22,162,906 |  | Accrued expenses | 6,123,200 |
|  | Inventory | 23,904,654 |  | Total current liabilities | $58,870,418 |
|  | Other | 1,390,646 |  |  |  |
|  | Total current assets | $60,650,127 |  |  |  |
|  |  |  |  | Long-term debt | $169,260,000 |
|  |  |  |  |  |  |
|  |  |  |  | Stockholders’ equity |  |
|  | Fixed assets | $415,741,427 |  | Preferred stock | $1,970,000 |
|  |  |  |  | Common stock | 37,583,700 |
|  |  |  |  | Capital surplus | 28,116,300 |
|  |  |  |  | Accumulated RE | 197,579,314 |
|  |  |  |  | Less treasury stock | (47,520,000) |
|  |  |  |  | Total equity | $217,729,314 |
|  |  |  |  |  |  |
|  |  |  |  | Total liabilities and |  |
|  | Total assets | $476,391,554 |  | shareholders’ equity | $445,859,732 |

So, the EFN is:

EFN = Total assets – Total liabilities and equity

EFN = $476,391,554 – 445,859,732

EFN = $30,531,822

The ratios with these pro forma statements are:

Current ratio = Current assets/Current liabilities

Current ratio = $60,650,127/$58,870,418

Current ratio = 1.03 times

Quick ratio = (Current assets – Inventory)/Current liabilities

Quick ratio = ($60,650,127 – 23,904,654)/$58,870,418

Quick ratio = .62 times

Total asset turnover = Sales/Total assets

Total asset turnover = $725,553,856/$476,391,554

Total asset turnover = 1.52 times

Inventory turnover = COGS/Inventory

Inventory turnover = $511,326,470/$23,904,654

Inventory turnover = 21.39 times

Receivables turnover = Sales/Accounts receivable

Receivables turnover = $725,553,856/$22,162,906

Receivables turnover = 32.74 times

Total debt ratio = (Total assets – Total equity)/Total assets

Total debt ratio = ($476,391,554 – 217,729,314)/$476,391,554

Total debt ratio = .54 times

Debt-equity ratio = (Current liabilities + Long-term debt)/Total equity

Debt-equity ratio = ($58,870,418 + 169,260,000)/$217,729,314

Debt-equity ratio = 1.05 times

Equity multiplier = Total assets/Total equity

Equity multiplier = $476,391,554/$217,729,314

Equity multiplier = 2.19 times

Interest coverage = EBIT/Interest

Interest coverage = $107,563,341/$11,000,900

Interest coverage = 9.78 times

Profit margin = Net income/Sales

Profit margin = $57,937,465/$725,553,856

Profit margin = .0799, or 7.99%

Return on assets = Net income/Total assets

Return on assets = $57,937,465/$476,391,554

Return on assets = .1216, or 12.16%

Return on equity = Net income/Total equity

Return on equity = $57,937,465/$217,729,314

Return on equity = .2661, or 26.61%

The current and quick ratios increase slightly since we are assuming accrued expenses remain constant, while all current assets increase spontaneously with sales. The asset utilization ratios remain constant since all inputs vary directly with sales, and the leverage ratios all change since we are assuming debt and equity do not vary directly with sales. The profitability ratios increase since we are assuming depreciation and interest expense do not increase spontaneously with sales.

It should be noted that the calculation of the ratios in this case is somewhat problematic since the balance sheet does not balance. For example, the equity multiplier is no longer one plus the debt-equity ratio. However, the company can increase both the debt and equity in such a way as to maintain the ratios at the current levels.

**5.** Pro forma financial statements for next year at a 20 percent growth rate are:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Income statement* | |  |  |  |
|  | Sales | $733,898,400 |  |  |  |
|  | COGS | 517,207,200 |  |  |  |
|  | Other expenses | 87,702,840 |  |  |  |
|  | Depreciation | 19,958,400 |  |  |  |
|  | EBIT | $109,029,960 |  |  |  |
|  | Interest | 11,000,900 |  |  |  |
|  | Taxable income | $98,029,060 |  |  |  |
|  | Taxes (40%) | 39,211,624 |  |  |  |
|  | Net income | $58,817,436 |  |  |  |
|  |  |  |  |  |  |
|  | Dividends | $22,255,111 |  |  |  |
|  | Add to RE | $36,562,325 |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Balance Sheet* | | | | |
|  | Assets | |  | Liabilities & Equity | |
|  | Current assets |  |  | Current liabilities |  |
|  | Cash and equivalents | $13,343,640 |  | Accounts payable | $53,353,860 |
|  | Accounts receivable | 22,417,800 |  | Accrued expenses | 6,123,200 |
|  | Inventory | 24,179,580 |  | Total current liabilities | $59,477,060 |
|  | Other | 1,406,640 |  |  |  |
|  | Total current assets | $61,347,660 |  |  |  |
|  |  |  |  | Long-term debt | $169,260,000 |
|  |  |  |  |  |  |
|  |  |  |  | Stockholders’ equity |  |
|  | Fixed assets | $420,522,840 |  | Preferred stock | $1,970,000 |
|  |  |  |  | Common stock | 37,583,700 |
|  |  |  |  | Capital surplus | 28,116,300 |
|  |  |  |  | Accumulated RE | 198,126,325 |
|  |  |  |  | Less treasury stock | (47,520,000) |
|  |  |  |  | Total equity | $218,276,325 |
|  |  |  |  |  |  |
|  |  |  |  | Total liabilities and |  |
|  | Total assets | $481,870,500 |  | shareholders’ equity | $447,013,385 |

So, the EFN is:

EFN = Total assets – Total liabilities and equity

EFN = $481,870,500 – 447,013,385

EFN = $34,857,115

To achieve the 20 percent growth rate without new external equity, the company will need to change its payout ratio or change its capital structure by increasing its long-term debt.

**6.** Now we are assuming the company can only build in amounts of $95 million. We will assume that the company will go ahead with the fixed asset acquisition. In this case, the pro forma financial statement calculation will change slightly. Before, we made the assumption that depreciation increased proportionally with sales, which makes sense if fixed assets increase proportionally with sales. This is not the case now. To estimate the new depreciation charge, we will find the current depreciation as a percentage of fixed assets, then apply this percentage to the new fixed assets. The depreciation as a percentage of assets this year was:

Depreciation percentage = $19,958,400/$350,435,700

Depreciation percentage = .0570, or 5.70%

The new level of fixed assets with the $95 million purchase will be:

New fixed assets = $350,435,700 + 95,000,000

New fixed assets = $445,435,700

So, the pro forma depreciation as a percentage of sales will be:

Pro forma depreciation = .0570($445,435,700)

Pro forma depreciation = $25,368,945

We will use this amount in the pro forma income statement. So, the pro forma income statement will be:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Income statement* | |  |  |  |
|  | Sales | $733,898,400 |  |  |  |
|  | COGS | 517,207,200 |  |  |  |
|  | Other expenses | 87,702,840 |  |  |  |
|  | Depreciation | 25,368,945 |  |  |  |
|  | EBIT | $103,619,415 |  |  |  |
|  | Interest | 11,000,900 |  |  |  |
|  | Taxable income | $92,618,515 |  |  |  |
|  | Taxes (40%) | 37,047,406 |  |  |  |
|  | Net income | $55,571,109 |  |  |  |
|  |  |  |  |  |  |
|  | Dividends | $21,026,779 |  |  |  |
|  | Add to RE | $34,544,331 |  |  |  |

The pro forma balance sheet will remain the same except for the fixed asset and equity accounts. The fixed asset account will increase by $95 million, rather than the growth rate of sales.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Balance Sheet* | | | | |
|  | Assets | |  | Liabilities & Equity | |
|  | Current assets |  |  | Current liabilities |  |
|  | Cash and equivalents | $13,343,640 |  | Accounts payable | $53,353,860 |
|  | Accounts receivable | 22,417,800 |  | Accrued expenses | 6,123,200 |
|  | Inventory | 24,179,580 |  | Total current liabilities | $59,477,060 |
|  | Other | 1,406,640 |  |  |  |
|  | Total current assets | $61,347,660 |  |  |  |
|  |  |  |  | Long-term debt | $169,260,000 |
|  |  |  |  |  |  |
|  |  |  |  | Stockholders’ equity |  |
|  | Fixed assets | $445,435,700 |  | Preferred stock | $1,970,000 |
|  |  |  |  | Common stock | 37,583,700 |
|  |  |  |  | Capital surplus | 28,116,300 |
|  |  |  |  | Accumulated RE | 196,108,331 |
|  |  |  |  | Less treasury stock | (47,520,000) |
|  |  |  |  | Total equity | $216,258,331 |
|  |  |  |  |  |  |
|  |  |  |  | Total liabilities and |  |
|  | Total assets | $506,783,360 |  | shareholders’ equity | $444,995,391 |

So, the EFN is:

EFN = Total assets – Total liabilities and equity

EFN = $506,783,360 – 444,995,391

EFN = $61,787,969

Since the fixed assets have increased at a faster percentage than sales, the capacity utilization for next year will decrease.

***CHAPTER 4***

**THE MBA DECISION**

**1.** Age is obviously an important factor. The younger an individual is, the more time there is for the (hopefully) increased salary to offset the cost of the decision to return to school for an MBA. The cost includes both the explicit costs such as tuition, as well as the opportunity cost of the lost salary.

**2.** Perhaps the most important nonquantifiable factors would be whether or not he is married and if he has any children. With a spouse and/or children, he may be less inclined to return for an MBA (especially full-time) since his family may be less amenable to the time and money constraints imposed by classes. Other factors would include his willingness and desire to pursue an MBA, job satisfaction, and how important the prestige of a job is to him, regardless of the salary.

**3.** He has three choices: remain at his current job, pursue a Wilton MBA, or pursue a Mt. Perry MBA. We need to find the aftertax value of each, so:

*Remain at current job*:

Aftertax salary = $57,000(1 – .26) = $42,180

His salary will grow at 3 percent per year, so the present value of his aftertax salary is:

PV = *C*

PV = $945,099.73

*Wilton MBA:*

The direct costs of attending Wilton are the costs of tuition, books and other supplies, health insurance costs, and the increased room and board expenses. The present value of the direct costs are:

PV of direct expenses = ($63,000 + 2,500 + 3,000 + 2,000)

+ ($63,000 + 2,500 + 3,000 + 2,000)/1.061

PV of direct costs = $136,946.75

We also need to account for the gain, that is the present value of his future salary, plus bonus, so:

PV of aftertax bonus paid in two years = $18,000(1 – .31)/1.0612 = $11,032.93

His aftertax salary will be:

Aftertax salary = $105,000(1 – .31) = $72,450

His salary will grow at 4 percent per year. We must also remember that he will now only work for 38 years, so the present value of his aftertax salary is:

PV = $1,836,007.92

Since the first salary payment will be received three years from today, we need to discount this for two years to find the value today, which will be:

PV = $1,836,007.92/1.0612

PV = $1,630,961.77

So, the total value of a Wilton MBA is:

Value = –$136,946.75 + 11,032.93 + 1,630,961.77 = $1,505,047.95

*Mount Perry MBA*:

Costs:

Total direct costs = $75,000 + 3,500 + 3,000 + 2,000 = $83,500

Note, this is also the PV of the direct costs since they are all paid today.

Salary:

PV of aftertax bonus paid in 1 year = $15,000(1 – .29)/1.061 = $10,037.70

Aftertax salary = $88,000(1 – .29) = $62,480

His salary will grow at 3.5 percent per year. We must also remember that he will now only work for 39 years, so the present value of his aftertax salary is:

PV = $1,489,928.56

This is the value of his salary in one year since the first salary payment will be received two years from today. We need to discount this for one year to find the value today, which will be:

PV = $1,489,928.56/1.061

PV = $1,404,268.20

So, the total value of a Mount Perry MBA is:

Value = –$83,500 + 10,037.70 + 1,404,268.20 = $1,330,805.90

**4.** He is somewhat correct. Calculating the future value of each decision will result in the option with the highest present value having the highest future value. Thus, a future value analysis will result in the same decision. However, his statement that a future value analysis is the appropriate method is wrong since a present value analysis will give the same correct answer as well.

**5.** To find the salary offer he would need to make the Wilton MBA as financially attractive as the current job, we need to take the PV of his current job, add the costs of attending Wilton, and the PV of the bonus on an aftertax basis. So, the necessary PV to make the Wilton MBA the same as his current job will be:

PV = $945,099.73 = –$136,946.75 + 11,032.93 + PV of salary

PV of salary = $1,071,013.55

This PV will make his current job exactly equal to the Wilton MBA on a financial basis. So, the present value of the salary in two years when he graduates must be:

Value in 2 years = Value today(1 + *r*)2

Value in 2 years = $1,071,013.55(1 + .061)2

Value in 2 years = $1,205,662.44

Now, we solve for the first salary payment using the growing annuity equation. Doing so, we find:

*C* = $47,576.18

This is the aftertax salary. So, the pretax salary must be:

Pretax salary = $47,576.18/(1 – .31)

Pretax salary = $68,950.99

**6.** The cost (interest rate) of the decision depends on the riskiness of the use of funds, not the source of the funds. Therefore, whether he can pay cash or must borrow is irrelevant. This is an important concept which will be discussed further in capital budgeting and the cost of capital in later chapters.

**SAMPLE**