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Business

Case Solutions Corporate Finance Ross, Westerfield, and Jaffe 9th edition CHAPTER 2 CASH FLOWS AT WARF COMPUTERS The operating cash flow for the company is: (NOTE: All numbers are in thousands of dollars) OCF = EBIT + Depreciation ??? Current taxes OCF = $1, 332 + 159 ??? 386 OCF = $1, 105 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 |$2, 280 | |?? |??? Beginning net fixed assets | 1, 792 | |?? |+ Depreciation | 159 | |?? | Net capital spending |$ 647 |

And the change in net working capital was: |?? | Change in net working capital | |?? | Ending NWC |$728 | |?? |??? Beginning NWC | 586 | |?? | Change in NWC |$142 | So, the cash flow from assets was: ?? | Cash flow from assets | | |?? | Operating cash flow |$1, 105 | |?? |??? Net capital spending | 647 | |?? |??? Change in NWC | 142 | |?? | Cash flow from assets |$316 |

The cash flow to creditors was: |?? | Cash flow to creditors |?? | |?? | Interest paid | $95 | |?? |??? Net New Borrowing | 20 | |?? | Cash flow to Creditors | $75 | The cash flow to stockholders was: ?? | Cash flow to stockholders |?? | |?? | Dividends paid | $212 | |?? |??? Net new equity raised | ??? 29 | |?? | Cash flow to Stockholders | $241 | The accounting cash flow statement of cash flows for the year was: ?? | Statement of Cash Flows | |?? | Operations | | |?? | Net income |$742 | |?? | Depreciation | 159 | |?? | Deferred taxes | 109 | |?? | Changes in assets and liabilities | | |?? | Accounts receivable |(31) | |?? | Inventories | 14 |?? | Accounts payable | 17 | |?? | Accrued expenses |(99) | |?? | Other |(9) | |?? | Total cash flow from operations |$902 | |?? |?? | | |?? |

Investing activities | | |?? | Acquisition of fixed assets |$(786) | |?? | Sale of fixed assets | 139 | |?? | Total cash flow from investing activities |$(547) | |?? |?? | | |?? | Financing activities | | |?? | Retirement of debt |$(98) | |?? | Proceeds of long-term debt | 118 | |?? | Notes payable | 5 | |?? | Dividends | (212) | |?? | Repurchase of stock |(40) | |?? | Proceeds from new stock issues | 11 | |?? | Total cash flow from financing activities |$(216) | |?? |?? | | |?? | Change in cash (on balance sheet) |$39 | Answers to questions 1. The firm had positive earnings in an accounting sense (NI > 0) and had positive cash flow from operations and a positive cash flow from assets. The firm invested $142 in new net working capital and $647 in new fixed assets.

The firm was able to return $241 to its stockholders and $75 to creditors. 2. The financial cash flows present 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. The company was able to return a significant amount of cash to its shareholders during the year, but a better use of these cash flows may have been to retain them for the expansion. This decision will be discussed in more detail later in the book. CHAPTER 3 RATIOS AND FINANCIAL PLANNING AT EAST COAST YACHTS 1. The calculations for the ratios listed are:

Current ratio = $14, 651, 000 / $19, 539, 000 Current ratio = 0. 75 times Quick ratio = ($14, 651, 000 ??? 6, 136, 000) / $19, 539, 000 Quick ratio = 0. 44 times Total asset turnover = $167, 310, 000 / $108, 615, 000 Total asset turnover = 1. 54 times Inventory turnover = $117, 910, 000 / $6, 136, 000

Inventory turnover = 19. 22 times Receivables turnover = $167, 310, 000 / $5, 473, 000 Receivables turnover = 30. 57 times Total debt ratio = ($108, 615, 000 ??? 55, 341, 000) / $108, 615, 000 Total debt ratio = 0. 49 times Debt-equity ratio = ($19, 539, 000 + 33, 735, 000) / $55, 341, 000 Debt-equity ratio = 0. 96 times Equity multiplier = $108, 615, 000 / $55, 341, 000 Equity multiplier = 1. 96 times

Interest coverage = $23, 946, 000 / $3, 009, 000 Interest coverage = 7. 96 times Profit margin = $12, 562, 200 / $167, 310, 000 Profit margin = 7. 51% Return on assets = $12, 562, 200 / $108, 615, 000 Return on assets = 11. 57% Return on equity = $12, 562, 000 / $55, 341, 000 Return on equity = 22. 70% 2. 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 below the industry median, but above the lower quartile. East Coast Yachts generally has less debt than comparable companies, but is still within the normal range. 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 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 | Could be experiencing inventory shortages. | | | | better procedures. | | | | 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| Increasing the amount of debt can increase | | | | is less likely to experience credit problems. | shareholder returns. Especially notice that it | | | | | will increase ROE. | | | Debt-equity ratio | Less debt than industry median means the company| Increasing the amount of debt can increase | | | | is less likely to experience credit problems. | shareholder returns.

Especially notice that it | | | | | will increase ROE. | | | Equity multiplier | Less debt than industry median means the company| Increasing the amount of debt can increase | | | | is less likely to experience credit problems. |

shareholder returns. Especially notice that it | | | | will increase ROE. | | | Interest coverage | Less debt than industry median means the company| Increasing the amount of debt can increase | | | is less likely to experience credit problems. | shareholder returns.

Especially notice that it | | | | will increase ROE. | | | Profit margin | The PM is slightly above the industry median, so| May be able to better control costs. | | | | it is performing better than many peers. | | | | 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 is below the industry median, while the quick ratio is above the industry median. This implies that East Coast Yachts has less inventory to current liabilities than the industry median. Because the cash ratio is lower than the industry median, East Coast Yachts has less inventory than the industry median, but more accounts receivable. 3.

To calculate the internal growth rate, we first need to find the ROE and the retention ratio, so: ROE = NI / TE ROE = $12, 562, 200 / $55, 341, 000 ROE = . 2270 or 22. 70% b = Addition to RE / NI b = $5, 024, 800 / $12, 562, 200 b = 0. 40 or 40% So, the sustainable growth rate is: Sustainable growth rate = (ROE ? b) / [1 ??? (ROE ? b)] Sustainable growth rate = [0. 2270(. 40)] / [1 ??? 0. 2270(. 40)] Sustainable growth rate = . 0999 or 9. 99% 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 |$184, 018, 615 |?? |?? |?? | |?? | COGS | 129, 685, 224 |?? |?? |?? | |?? | Other expenses | 21, 990, 725 |?? |?? |?? | |?? | Depreciation | 5, 460, 000 |?? |?? |?? | |?? | EBIT |$26, 882, 666 |?? |?? |?? | |?? | Interest 3, 009, 000 |?? |?? |?? | |?? | Taxable income |$23, 873, 666 |?? |?? |?? | |?? | Taxes (40%) | 9, 549, 466 |?? |?? |?? | |?? | Net income | $14, 324, 199 |?? |?? |?? | |?? |?? | |?? |?? |?? | |?? | Dividends |$8, 594, 520 |?? |?? |?? | |?? | Add to RE | 5, 729, 680 |?? |?? |?? | |?? | Balance sheet | |?? | Assets |?? | Liabilities & Equity | |?? | Current Assets | |?? | Current Liabilities | | |?? | Cash |$3, 345, 793 |?? | Accounts Payable |$7, 106, 236 | |?? | Accounts rec. 6, 019, 568 |?? | Notes Payable | 14, 384, 050 | |?? | Inventory | 6, 748, 779 |?? | Total CL |$21, 490, 286 | |?? | Total CA |$16, 114, 140 |?? |?? | | |?? |?? | |?? | Long-term debt |$33, 735, 000 | |?? | | |?? |?? | | |?? | | |?? | Shareholder Equity | | |?? | |?? | Common stock |$5, 200, 000 | |?? | Fixed assets | |?? | Retained earnings | 55, 870, 680 | |?? | Net PP |$103, 347, 828 |?? | Total Equity |$61, 070, 680 | |?? |?? | |?? |?? | | |?? | Total Assets |$119, 461, 968 |?? | Total L |$116, 295, 966 | So, the EFN is: EFN = Total assets ??? Total liabilities and equity EFN = $119, 461, 968 ??? 116, 295, 966 EFN = $3, 166, 002 The ratios with these pro forma statements are: Current ratio = $16, 114, 140 / $21, 490, 286 Current ratio = 0. 75 times Quick ratio = ($16, 114, 140 ??? 6, 748, 779) / $21, 490, 286 Quick ratio = 0. 44 times Total asset turnover = $184, 018, 615 / $119, 461, 968 Total asset turnover = 1. 54 times Inventory turnover = $129, 685, 224 / $6, 748, 779 Inventory

turnover = 19. 22 times Receivables turnover = $184, 018, 615 / $6, 019, 568 Receivables turnover = 30. 57 times

Total debt ratio = ($116, 295, 966 ??? 61, 070, 680) / $116, 295, 966 Total debt ratio = 0. 49 times Debt-equity ratio = ($21, 490, 286 + 33, 735, 000) / $61, 070, 680 Debt-equity ratio = 0. 90 times Equity multiplier = $119, 460, 968 / $61, 070, 680 Equity multiplier = 1. 96 times Interest coverage = $26, 882, 666 / $3, 009, 000 Interest coverage = 8. 93 times Profit margin = $14, 324, 199 / $184, 018, 615 Profit margin = 7. 78% Return on assets = $14, 324, 199 / $119, 461, 968 Return on assets = 11. 99% Return on equity = $14, 324, 199 / $61, 070, 680 Return on equity = 23. 45% The only ratios that changed are the debt ratio, the interest coverage ratio, profit margin, return on assets, and return on equity.

The debt ratio changes because long-term debt is assumed to remain fixed in the pro forma statements. The other ratios change slightly because interest and depreciation are also assumed to remain constant as well. 4. Pro forma financial statements for next year at a 20 percent growth rate are: |?? | Income statement |?? |?? |?? | |?? | Sales |$200, 772, 000 |?? |?? |?? | |?? | COGS | 141, 492, 000 |?? |?? |?? | |?? | Other xpenses | 23, 992, 800 |?? |?? |?? | |?? | Depreciation | 5, 460, 000 |?? |?? |?? | |?? | EBIT |$29, 827, 200 |?? |?? |?? | |?? | Interest | 3, 009, 000 |?? |?? |?? | |?? | Taxable income |$26, 818, 200 |?? |?? |?? | |?? | Taxes (40%) | 10, 727, 280 |?? |?? |?? | |?? | Net income | $16, 090, 920 |?? |?? |?? | |?? |?? | |?? |?? |?? | |?? | Dividends |$9, 654, 552 |?? |?? |?? | |?? | Add to RE | 6, 436, 368 |?? |?? |?? | ?? | Balance sheet | |?? | Assets |?? | Liabilities & Equity | |?? | Current Assets | |?? | Current Liabilities |

| |?? | Cash |$3, 650, 400 |?? | Accounts Payable |$7, 753, 200 | |?? | Accounts rec. | 6, 567, 600 |?? | Notes Payable | 15, 693, 600 | |?? | Inventory | 7, 363, 200 |?? | Total CL |$23, 446, 800 | |?? | Total CA |$17, 581, 200 |?? |?? | | |?? | |?? | Long-term debt |$33, 735, 000 | |?? | | |?? |?? | | |?? | | |?? | Shareholder Equity | | |?? |?? | |?? | Common stock |$5, 200, 000 | |?? | Fixed assets | |?? | Retained earnings | 56, 577, 368 | |?? | Net PP |$112, 756, 800 |?? | Total Equity |$61, 777, 368 | |?? |?? | |?? |?? | | |?? | Total Assets |$130, 338, 000 |?? | Total L |$118, 959, 168 | So, the EFN is: EFN = Total assets ??? Total liabilities and equity EFN = $130, 338, 000 ??? 118, 959, 168 EFN = $8, 753, 040 5. Now we are assuming the company can only build in amounts of $30 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 = $5, 460, 000 / $93, 964, 000 Depreciation percentage = . 0581 or 5. 81% The new level of fixed assets with the $30 million purchase will be: New fixed assets = $93, 964, 000 + 30, 000, 000 = $123, 964, 000 So, the pro forma depreciation as a percentage of sales will be: Pro forma depreciation = . 0581($123, 964, 000) Pro forma depreciation = $7, 203, 221 We will use this amount in the pro form income statement. So, the pro forma income statement will be: ?? | Income statement |?? |?? |??

| |?? | Sales |$200, 772, 000 |?? |?? |?? | |?? | COGS | 141, 492, 000 |?? |?? |?? | |?? | Other expenses | 23, 992, 800 |?? |?? |?? | |?? | Depreciation | 7, 203, 221 |?? |?? |?? | |?? | EBIT |$28, 083, 979 |?? |?? |?? | |?? | Interest | 3, 009, 000 |?? |?? |?? | |?? | Taxable income |$25, 074, 979 |?? |?? |?? | |?? | Taxes (40%) | 10, 029, 992 |?? |?? |?? | |?? | Net income |$15, 044, 988 |?? |?? |?? | |?? |?? | |?? |?? |?? | |?? | Dividends |$9, 026, 993 |?? |?? |?? | |?? | Add to RE | 6, 017, 995 |?? |?? |?? | The pro forma balance sheet will remain the same except for the fixed asset and equity accounts.

The fixed asset account will increase by $30 million, rather than the growth rate of sales. |?? | Balance sheet | |?? | Assets |?? | Liabilities & Equity | |?? | Current Assets | |?? | Current Liabilities | | |?? | Cash |$3, 650, 400 |?? | Accounts Payable |$7, 753, 200 | |?? | Accounts rec. 6, 567, 600 |?? | Notes Payable | 15, 693, 600 | |?? | Inventory | 7, 363, 200 |?? | Total CL |$23, 446, 800 | |?? | Total CA |$17, 581, 200 |?? |?? | | |?? |?? | |?? | Long-term debt | $33, 735, 000 | |?? | | |?? |?? | | |?? | | |?? | Shareholder Equity | | |?? |?? | |?? | Common stock |$5, 200, 000 | |?? | Fixed assets | |?? | Retained earnings | 56, 158, 995 | |?? | Net PP |$123, 964, 000 |?? | Total Equity |$61, 358, 995 | |?? | |?? |?? | | |?? | Total Assets |$141, 545, 200 |?? | Total L |$118, 540, 795 | So, the EFN is: EFN = Total assets ??? Total liabilities and equity EFN = $141, 545, 200 ??? 118, 540, 795 EFN = $23, 004, 405 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 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. In this analysis, room and board costs are irrelevant since presumably they will be the same whether he attends college or keeps his current job.

We need to find the aftertax value of each, so: Remain at current job: Aftertax salary = $60, 000(1 ??? . 26) = $44, 400 His salary will grow at 3 percent per year, so the present value of his aftertax salary is: PV = C {[1/(r ??? g)] ??? [1/(r ??? g)] ? [(1 + g)/(1 + r)]t} PV = $44, 400{[1/(. 065 ??? . 03)] ??? [1/(. 065 ??? . 03)] ? [(1 + . 03)/(1 + . 065)]40} PV = $935, 283. 49 Wilton MBA: Costs: The direct costs will occur today and in one year and include tuition, books and supplies, health insurance, and the room and board increase. So the total direct costs are: PV of direct expenses = ($65, 000 + 3, 000 + 3, 000 + 2, 000) + ($65, 000 + 3, 000 + 3, 000 + 2, 500) / 1. 065 PV of direct expenses = $141, 544. 60

The indirect costs are the lost salary, so the value of the indirect costs are: PV of indirect costs (lost salary) = $44, 400 / (1. 065) + $44, 400(1 + . 03) /

(1 + . 065)2 PV of indirect costs (lost salary) = $82, 010. 18 The financial benefits are the bonus to be paid in 2 years and the future salary. PV of aftertax bonus paid in 2 years = $20, 000(1 ??? . 31) / 1. 0652 = $12, 166. 90 Aftertax salary = $10, 000(1 ??? . 31) = $75, 900 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 = C {[1/(r ??? g)] ??? [1/(r ??? g)] ? [(1 + g)/(1 + r)]t} PV = $75, 900{[1/(. 065 ??? . 04)] ??? [1/(. 065 ??? . 04)] ? [(1 + . 04)/(1 + . 065)]38}

PV = $1, 804, 927. 68 Since the first salary payment will be received three years from today, so we need to discount this for two years to find the value today, which will be: PV = $1, 804, 927. 68 / 1. 0652 PV = $1, 591, 331. 25 So, the total value of a Wilton MBA is: Value = ???$141, 544. 60 ??? 82, 010. 18 + 12, 166. 90 + 1, 591, 331. 25 = $1, 379, 943. 36 Mount Perry MBA: The direct costs will occur today and include tuition, books and supplies, health insurance, and the room and board increase. So the total direct costs are: Total direct costs = $80, 000 + 4, 500 + 3, 000 + 2, 000 = $89, 500. Note, this is also the PV of the direct costs since they are all paid today.

The indirect costs are the lost salary, so the value of the indirect costs are: PV of indirect costs (lost salary) = $44, 400 / (1. 065) = $41, 690. 14 The financial benefits are the bonus to be paid in 1 year and the future salary. PV of aftertax bonus paid in 1 year = $18, 000(1 ??? . 29) / 1. 065 = $12, 000 His aftertax salary at his new job will be: Aftertax salary = $80, 000(1 ??? . 29) = $65, 320 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 = C {[1/(r ??? g)] ??? [1/(r ??? g)] ? [(1 + g)/(1 + r)]t} PV = $65, 320{[1/(. 065 ??? . 035)] ??? [1/(. 065 ??? . 035)] ? [(1 + . 035)/(1 + . 065)]35} PV = $1, 462, 896. 46

Since the first salary payment will be received two years from today, so we need to discount this for one year to find the value today, which will be: PV = $1, 462, 896. 46 / 1. 065 PV = $1, 373, 611. 70 So, the total value of a Mount Perry MBA is: Value = ???$89, 500 ??? 41, 690. 14 + 12, 000 + 1, 373, 611. 70 = $1, 254, 421. 56 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 correct method is wrong since a present value analysis will give the correct answer as well. 5.

To find the salary offer he would need to make the Wilton MBA as financially attractive as the 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. Note, this assumes that the singing bonus is constant. So, the necessary PV to make the Wilton MBA the same as his current job will be: PV = $935, 283. 49 + 1414, 544. 60 + 82, 010. 18 ??? 12, 166. 90 = $1, 146, 671. 37 This PV will make his current job exactly equal to the Wilton MBA on a financial basis. Since the salary will not start for 3 years, we need to find the value in 2 years so that it is the present value of growing annuity. So: Value in 2 years = $1, 146, 671. 37(1. 0652) = $1, 300, 583. 34

Since his salary will still be a growing annuity, the aftertax salary needed is: PV = C {[1/(r ??? g)] ??? [1/(r ??? g)] ? [(1 + g)/(1 + r)]t} $1, 300, 583. 34 = C {[1/(. 065 ??? . 04)] ??? [1/(. 065 ??? . 04)] ? [(1 + . 04)/(1 + . 065)]38} C = $54, 691. 54 This is the aftertax salary. So, the pretax salary must be: Pretax salary = $54, 691. 54 / (1 ??? . 31) = $76, 263. 10 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. CHAPTER 5 BULLOCK GOLD MINING 1.

An example spreadsheet is: [pic] 2. Since the NPV of the mine is positive, the company should open the mine. We should note, it may be advantageous to delay the mine opening because of real options, a topic covered in more detail in a later chapter. 3. There are many possible variations on the VBA code to calculate the payback period. Below is a VBA program from http://www. vbaexpress. com/kb/getarticle. php? kb_id= 252. Function PAYBACK(invest, finflow) Dim x As Double, v As Double Dim c As Integer, i As Integer x = Abs(invest) i = 1 c = finflow. Count Do x = x – v v = finflow. Cells(i). Value If x = v Then PAYBACK = i Exit Function ElseIf x ; v Then P = i – 1

Z = x / v PAYBACK = P + Z Exit Function End If i = i + 1 Loop Until i ; c PAYBACK = “ no payback” End Function CHAPTER 6, Case #1 BETHESDA MINING To analyze this project, we must calculate the incremental cash flows generated by the project. Since net working capital is built up ahead of sales,

the initial cash flow depends in part on this cash outflow. So, we will begin by calculating sales. Each year, the company will sell 500, 000 tons under contract, and the rest on the spot market. The total sales revenue is the price per ton under contract times 500, 000 tons, plus the spot market sales times the spot market price. The sales per year will be: ?? | | Year 1 | Year 2 | Year 3 | Year 4 | |?? | Contract |$47, 500, 000 |$47, 500, 000 |$47, 500, 000 | $47, 500, 000 | |?? | Spot | 10, 800, 000 | 16, 200, 000 | 20, 700, 000 | 8, 100, 000 | |?? | Total |$58, 300, 000 |$63, 700, 000 |$68, 200, 000 |$55, 600, 000 | The current aftertax value of the land is an opportunity cost. The initial outlay for net working capital is the percentage required net working capital times Year 1 sales, or: Initial net working capital = . 05($58, 300, 000) = $2, 915, 000 So, the cash flow today is: ?? | Equipment |???$85, 000, 000 | |?? | Land |??? 7, 000, 000 | |?? | NWC |??? 2, 915, 000 | |?? | Total |???$94, 915, 000 | Now we can calculate the OCF each year. The OCF is: | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | |?? | Sales |$58, 300, 000 |$63, 700, 000 |$68, 200, 000 |$55, 600, 000 | | | |?? | VC | 19, 220, 000 | 21, 080, 000 | 22, 630, 000 | 18, 290, 000 | | | |?? | FC | 4, 300, 000 | 4, 300, 000 | 4, 300, 000 | 4, 300, 000 |$2, 800, 000 |$7, 500, 000 | |?? | Dep. 12, 155, 000 | 20, 825, 000 | 14, 875, 000 | 10, 625, 000 | | | |?? | EBT |$22, 625, 000 |$17, 495, 000 |$26, 395, 000 |$22, 385, 000 |???$2, 800, 000 |???$7, 500, 000 | |?? | Tax | 8, 597, 500 | 6, 648, 100 | 10, 030, 100 | 8, 506, 300 | 1, 064, 000 | 2, 850, 000 | |?? | NI |$14, 027, 500 |$10, 846, 900 |$16, 364, 900 |$13, 878, 700 |???$1, 736, 000 |???$4, 650, 000 | |?? |+ Dep. | 12, 155, 000 | 20, 825, 000 | 14, 875, 000 | 10, 625, 000 | 0 | 0 | |?? | OCF |$26, 182, 500 |$31, 671, 900 | $31, 239, 900 |$24, 503, 700 |???$1, 736, 000 |???$4, 650, 000 | Years 5 and

6 are of particular interest. Year 5 has an expense of $2. 8 million to reclaim the land, and it is the only expense for the year.

Taxes that year are a credit, an assumption given in the case. In Year 6, the charitable donation of the land is an expense, again resulting in a tax credit. The land does have an opportunity cost, but no information on the aftertax salvage value of the land is provided. The implicit assumption in this calculation is that the aftertax salvage value of the land in Year 6 is equal to the $7. 5 million charitable expense. Next, we need to calculate the net working capital cash flow each year. NWC is 5 percent of next year’s sales, so the NWC requirement each year is: |?? | | Year 1 | Year 2 | Year 3 | Year 4 | |?? | Beg.

NWC |$2, 915, 000 |$3, 185, 000 |$3, 410, 000 |$2, 780, 000 | |?? | End NWC | 3, 185, 000 | 3, 410, 000 | 2, 780, 000 | | |?? | NWC CF |???$270, 000 |??? $225, 000 |$630, 000 |$2, 780, 000 | The last cash flow we need to account for is the salvage value. The fact that the company is keeping the equipment for another project is irrelevant. The aftertax salvage value of the equipment should be used as the cost of equipment for the new project. In other words, the equipment could be sold after this project. Keeping the equipment is an opportunity cost associated with that project. The book value of the equipment is the original cost, minus the accumulated depreciation, or: Book value of equipment = $85, 000, 000 ??? 12, 155, 000 ??? 20, 825, 000 ??? 14, 875, 000 ??? 10, 625, 000 Book value of equipment = $26, 520, 000

Since the market value of the equipment is $51 million, the equipment is sold at a gain to book value, so the sale will incur the taxes of: Taxes on sale

of equipment = ($26, 520, 000 ??? 51, 000, 000)(. 38) = ???$9, 302, 400 And the aftertax salvage value of the equipment is: Aftertax salvage value = $51, 000, 000 ??? 9, 302, 400 Aftertax salvage value = $41, 697, 600 So, the net cash flows each year, including the operating cash flow, net working capital, and aftertax salvage value, are: |?? | Time | Cash flow | |?? | 0 |???$94, 915, 000 | |?? | 1 | 25, 912, 500 | |?? | 2 | 31, 446, 900 | ?? | 3 | 31, 869, 900 | |?? | 4 | 68, 981, 300 | |?? | 5 |??? 1, 736, 000 | |?? | 6 |??? 4, 650, 000 | So, the capital budgeting analysis for the project is: Payback period = 3 + $5, 685, 700/$68, 981, 300 Payback period = 3. 08 years Profitability index = ($25, 912, 500/1. 12 + $31, 446, 900/1. 122 + $31, 869, 900/1. 123 + $68, 981, 300/1. 124 ??? $1, 736, 000/1. 125 ??? $4, 650, 000/1. 126) / $94, 915, 000 Profitability index = 1. 174 To calculate the AAR, we divide the average net income by the average book value.

Since the cash flows from the project extend for two years past the end of mining operation, we will include an average book value of zero for the last two years. So, the AAR is: AAR = [($14, 027, 500 + 10, 846, 900 + 16, 364, 900 + 13, 878, 000 ??? 1, 736, 000 ??? 4, 650, 000) / 6] / [(85, 000, 000 + 72, 845, 000 + 52, 020, 000 + 37, 145, 000 + 26, 520, 000 + 0) / 7] AAR = . 1485 or 14. 85% The equation for IRR is: 0 = ???$94, 915, 000 + $25, 912, 500/(1 + IRR) + $31, 446, 900/(1 + IRR)2 + $31, 869, 900/(1 + IRR)3 + $68, 981, 300/(1 + IRR)4 ??? $1, 736, 000/(1 + IRR)5 ??? $4, 650, 000/(1 + IRR)6 Using a spreadsheet or financial calculator, the IRRs for the project are: IRR = 19. 1%, ??? 74. 64% MIRR = 12. 94% NPV = ???$94, 915, 000 + $25, 912, 500/1. 12 + $31, 446, 900/1. 122 + $31, 869, 900/1. 123 + $68, 981, 300/1. 124 ??? $1, 736, 000/1. 125 ??? $4, 650, 000/1. 126 NPV = $16, 472, 777. 67

In the final analysis, the company should accept the project since the NPV is positive. CHAPTER 6, Case #2 GOODWEEK TIRES, INC. The cash flow to start the project is the $120 million equipment cost and the $11 million required for net working capital, yielding a total cash outflow today of $131 million. The research and development costs and the marketing test are sunk costs. We can calculate the future cash flows on a nominal basis or a real basis.

Since the depreciation is given in nominal values, we will calculate the cash flows in nominal terms. The same solution can be found using real cash flows. Since the price and variable costs increase by 1 percent, and the inflation rate is 3. 5 percent, the nominal growth in both variables is: (1 + R) = (1 + r)(1 + h) R = [(1. 01)(1. 0325)] ??? 1 R = . 0428 or 4. 28% To analyze this project, we must calculate the incremental cash flows generated by the project. We will calculate the real cash flows, although using nominal cash flows will result in the same NPV. The sales of new automobiles will grow by 2. 5 percent per year, and there are four tires per car.

Since the company expects to capture 11 percent of the market, the number of tires sold in the OEM market will be: |?? | | Year 1 | Year 2 | Year 3 | Year 4 | | | Automobiles sold | 5, 600, 000 | 5, 740, 000 | 5, 883, 500 | 6, 030, 588 | |?? | Tires for automobiles sold | 22, 400, 000 | 22, 960, 000 | 23, 534, 000 | 24, 122, 350 | |?? | SuperTread tires sold | 2, 464, 000 | 2, 525, 600 | 2, 588, 740 | 2, 653, 459 |

The number of tires sold in the replacement market will grow at 2 percent per year, and Goodweek will capture 8 percent of the market. So, the number of tires sold in the replacement market will be: |?? | | Year 1 | Year 2

| Year 3 | Year 4 | |?? | Total tires sold in market | 14, 000, 000 | 14, 280, 000 | 14, 565, 600 | 14, 856, 912 | |?? | SuperTread tires sold | 1, 120, 000 | 1, 142, 400 | 1, 165, 248 | 1, 188, 553 | The tires will be sold in each market at a different price. The price will increase each year at the inflation rate, so the price each year will be: ?? | | Year 1 | Year 2 | Year 3 | Year 4 | |?? | OEM |$38. 00 |$39. 24 |$40. 51 |$41. 83 | |?? | Replacement |$59. 00 |$60. 92 |$62. 90 | $64. 94 | Multiplying the number of tires sold in each market by the respective price in that market, the revenue each year will be: |?? | | Year 1 | Year 2 | Year 3 | Year 4 | |?? | OEM market |$93, 632, 000 |$99, 091, 916 $104, 870, 213 |$110, 985, 458 | |?? | Replacement market | 66, 080, 000 | 69, 592, 152 | 73, 290, 975 | 77, 186, 390 | |?? | Total |$159, 712, 000 |$168, 684, 068 |$178, 161, 188 |$188, 171, 848 | Now we can calculate the incremental cash flows each year. We will calculate the nominal cash flows. Doing so, we find: |?? | | Year 1 | Year 2 | Year 3 | Year 4 | |?? | Revenue | $159, 712, 000 |$168, 684, 068 |$178, 161, 188 |$188, 171, 848 | |?? | Variable costs | 78, 848, 000 | 84, 151, 806 | 85, 026, 717 | 87, 024, 208 | |?? | Mkt. nd general costs | 26, 000, 000 | 26, 845, 000 | 27, 717, 463 | 28, 618, 280 | |?? | Depreciation | 20, 020, 000 | 34, 300, 000 | 24, 500, 000 | 17, 500, 000 | |?? | EBT |$34, 844, 000 |$23, 387, 262 |$40, 917, 008 |$55, 029, 360 | |?? | Tax | 13, 937, 600 | 9, 354, 905 | 16, 366, 803 | 22, 011, 744 | |?? | Net income |$20, 906, 400 |$14, 032, 357 |$24, 550, 205 |$33, 017, 616 | |?? | OCF |$40, 926, 400 |$48, 332, 357 |$49, 050, 205 |$50, 517, 616 | Net working capital is a percentage of sales, so the net working capital requirements will change every year. The net working capital cash flows will be: ?? | | Year 1 | Year 2 | Year 3 | Year 4 | |?? | Beginning |$9, 000, 000 |$23,

956, 800 |$25, 302, 610 |$26, 724, 178 | |?? | Ending | 23, 956, 800 | 25, 302, 610 | 26, 724, 178 | 0 | |?? | NWC cash flow |???$14, 956, 800 |???$1, 345, 810 |???$1, 421, 568 |$26, 724, 178 | The book value of the equipment is the original cost minus the accumulated depreciation. The book value of equipment each year will be: ?? |?? | Year 1 | Year 2 | Year 3 | Year 4 | |?? | Book value of equipment |$119, 980, 000 |$85, 680, 000 |$61, 180, 000 | $43, 680, 000 | Since the market value of the equipment is $54 million, the equipment is sold at a gain to book value, so the sale will incur the taxes of: Taxes on sale of equipment = ($46, 680, 000 ??? 54, 000, 000)(. 40) = $4, 128, 000 And the aftertax salvage value of the equipment is: Aftertax salvage value = $54, 000, 000 ??? 4, 128, 000 Aftertax salvage value = $89, 872, 000 So, the net cash flows each year, including the operating cash flow, net working capital, and aftertax salvage value, are: ?? | Time | Cash flow | | |?? | 0 |???$149, 000, 000 | | |?? | 1 | 25, 969, 600 | | |?? | 2 | 49, 986, 547 | | |?? | 3 | 47, 628, 637 | | |?? | 4 | 127, 113, 794 | | So, the capital budgeting analysis for the project is: Payback period = 3 + $28, 415, 213 / $127, 113, 794 Payback period = 3. 22 years The discounted cash flows are: ?? | Time | Discounted cash flow | |?? | 0 |???$149, 000, 000 | |?? | 1 | 22, 406, 903 | |?? | 2 | 34, 978, 941 | |?? | 3 | 30, 592, 703 | |?? | 4 | 70, 446, 422 | Discounted payback period = 3 + $61, 021, 454 / $70, 446, 422 Discounted payback period = 3. 27 years The required return for the project is in nominal terms, so the profitability index is: Profitability index = ($25, 969, 600/1. 15 + $49, 986, 547/1. 152 + $47, 628, 637/1. 153 + $96, 714, 733/1. 154) / $149, 000, 000 Profitability index = 1. 63 The equation for IRR is: 0 = ???$149, 000, 000 + $25, 969, 600/(1 + IRR) + $49, 986, 547/(1 + IRR)2 + $47, 628, 637/(1 +

IRR)3 + $96, 714, 733/(1 + IRR)4 Using a spreadsheet or financial calculator, the IRR for the project is: IRR = 18. 35% AAR = [(20, 926, 400 + 14, 032, 357 + 24, 550, 205 + 33, 017, 606)/4] / [($140, 000, 000 + 119, 980, 000 + 85, 860, 000 + 61, 1180, 000 + 43, 680, 000)/5} AAR = 25. 67% NPV = ??? $149, 000, 000 + $25, 696, 600/(1. 15) + $46, 986, 547/(1. 15)2 + $47, 628, 637/(1. 15)3 + $127, 113, 794/(1. 15)4 NPV = $9, 424, 967. 81 In the final analysis, the company should accept the project since the NPV is positive. CHAPTER 7 BUNYAN LUMBER, LLC

The company is faced with the option of when to harvest the lumber. Whatever harvest cycle the company chooses, it will follow that cycle in perpetuity. Since the forest was planted 20 years ago, the options available in the case are 40-, 45-, 50, and 55-year harvest cycles. No matter what harvest cycle the company chooses, it will always thin the timber 20 years after harvests and replants. The cash flows will grow at the inflation rate, so we can use the real or nominal cash flows. In this case, it is simpler to use real cash flows, although nominal cash flows would yield the same result. So, the real required return on the project is: (1 + R) = (1 + r)(1 + h) 1. 10 = (1 + r)(1. 37) r = . 0608 or 6. 08% The conservation funds are expected to grow at a slower rate than inflation, so the real return for the conservation fund will be: (1 + R) = (1 + r)(1 + h) 1. 10 = (1 + r)(1. 032) r = . 0659 or 6. 59% The company will thin the forest today regardless of the harvest schedule, so this first thinning is not an incremental cash flow, but future thinning is part of the analysis since the thinning schedule is determined by the harvest schedule. The cash flow from the thinning process is: Cash flow from thinning

= Acres thinned ? Cash flow per acre Cash flow from thinning = 5, 000($1, 000) Cash flow from thinning = $5, 000, 000

The real cost of the conservation fund is constant, but the expense will be tax deductible, so the aftertax cost of the conservation fund will be: Aftertax conservation fund cost = (1 ??? . 35)($250, 000) Aftertax conservation fund cost = $162, 500 For each analysis, the revenue and costs are: Revenue = [? (% of grade)(harvest per acre)(value of board grade)](acres harvested)(1 ??? defect rate) Tractor cost = (Cost MBF)(MBF per acre)(acres) Road cost = (Cost MBF)(MBF per acre)(acres) Sale preparation and administration = (Cost MBF)(MBF acre)(acres) Excavator piling, broadcast burning, site preparation, and planting costs are the cost of each per acre times the number of acres.

These costs are the same no matter what the harvest schedule since they are based on acres, not MBF. Now we can calculate the cash flow for each harvest schedule. One important note is that no depreciation is given in the case. Since the harvest time is likely to be short, the assumption is that no depreciation is attributable to the harvest. This implies that operating cash flow is equal to net income. Now we can calculate the NPV of each harvest schedule. The NPV of each harvest schedule is the NPV of the first harvest, the NPV of the thinning, the NPV of all future harvests, minus the present value of the conservation fund costs. 40-year harvest schedule: ?? | Revenue |$42, 194, 250 | |?? | Tractor cost | 9, 870, 000 | |?? | Road | 3, 525, 000 | |?? | Sale preparation & admin | 1, 269, 000 | |?? | Excavator piling | 750, 000 | |?? | Broadcast burning | 1, 500, 000 | |?? | Site preparation | 725, 000 | |?? | Planting costs | 1, 125, 000 | |?? | EBIT |$23, 430, 250 | |?? | Taxes | 8, 200,

588 | |?? | Net income (OCF) |$15, 229, 663 | The PV of the first harvest in 20 years is: PVFirst = $15, 229, 663/(1 + . 0608)20 PVFirst = $4, 681, 788

Thinning will also occur on a 40-year schedule, with the next thinning 40 years from today. The effective 40-year interest rate for the project is: 40-year project interest rate = [(1 + . 0608)40] ??? 1 40-year project interest rate = 958. 17% We also need the 40-year interest rate for the conservation fund, which will be: 40-year conservation interest rate = [(1 + . 0659)40] ??? 1 40-year conservation interest rate = 1, 183. 87% Since we have the cash flows from each thinning, and the next thinning will occur in 40 years, we can find the present value of future thinning on this schedule, which will be: PVThinning = $5, 000, 000/9. 5817 PVThinning = $521, 825. 80

The operating cash flow from each harvest on the 40-year schedule is $15, 229, 663, so the present value of the cash flows from the harvest are: PVHarvest = [($15, 229, 663/9. 5817)] / (1 + . 0608)20 PVHarvest = $488, 615. 51 Now we can find the present value of the conservation fund deposits. The present value of these deposits is at Year 20 is: PVConservation = ???$162, 500 ??? $162, 500/11. 8387 PVConservation = ???$176, 226. 22 And the value today is: PVConservation = ???$175, 226. 22/(1 + . 0659)20 PVConservation = ???$49, 182. 52 So, the NPV of a 40-year harvest schedule is: NPV = $4, 681, 788 + 521, 825. 80 + 488, 615. 51 ??? 49, 182. 52 NPV = $5, 643, 046. 36 45-year harvest schedule: ?? | Revenue |$49, 232, 800 | |?? | Tractor cost | 11, 480, 000 | |?? | Road | 4, 100, 000 | |?? | Sale preparation & admin | 1, 476, 000 | |?? | Excavator piling | 750, 000 | |?? | Broadcast burning | 1, 500, 000 | |?? | Site preparation |

725, 000 | |?? | Planting costs | 1, 125, 000 | |?? | EBIT |$28, 076, 800 | |?? | Taxes | 9, 826, 880 | | | Net income (OCF) |$18, 249, 920 | The PV of the first harvest in 25 years is: PVFirst = $18, 249, 920/(1 + . 0608)25 PVFirst = $4, 177, 464

Thinning will also occur on a 45-year schedule, with the next thinning 45 years from today. The effective 45-year interest rate for the project is: 45-year project interest rate = [(1 + . 0608)45] ??? 1 45-year project interest rate = 1, 321. 11% We also need the 45-year interest rate for the conservation fund, which will be: 45-year conservation interest rate = [(1 + . 0659)45] ??? 1 45-year conservation interest rate = 1, 666. 38% Since we have the cash flows from each thinning, and the next thinning will occur in 45 years, we can find the present value of future thinning on this schedule, which will be: PVThinning = $5, 000, 000/13. 2111 PVThinning = $378, 470. 46

The operating cash flow from each harvest on the 45-year schedule is $18, 249, 920, so the present value of the cash flows from the harvest are: PVHarvest = [($18, 249, 920/13. 21111)] / (1 + . 0608)25 PVHarvest = $316, 209. 37 Now we can find the present value of the conservation fund deposits. The present value of these deposits is at Year 25 is: PVConservation = ???$162, 500 ??? $162, 500/16. 6638 PVConservation = ???$174, 800. 29 And the value today is: PVConservation = ???$174, 800. 29/(1 + . 0659)25 PVConservation = ???$35, 458. 26 So, the NPV of a 45-year harvest schedule is: NPV = $4, 177, 464 + 378, 470. 46 + 316, 209. 37 ??? 35, 458. 26 NPV = $4, 836, 685. 86 50-year harvest schedule: ?? |

Revenue |$52, 024, 993 | |?? | Tractor cost | 12, 110, 000 | |?? | Road | 4, 325, 000 | |?? | Sale preparation & admin | 1, 557, 000 | |?? | Excavator piling | 750, 000 | |?? | Broadcast burning | 1, 500, 000 | |?? | Site preparation | 725, 000 | |?? | Planting costs | 1, 125, 000 | |?? | EBIT |$29, 932, 993 | |?? | Taxes | 10, 476, 547 | |?? | Net income (OCF) |$19, 456, 445 | The PV of the first harvest in 30 years is: PVFirst = $19, 456, 445/(1 + . 0608)30 PVFirst = $3, 316, 238

Thinning will also occur on a 50-year schedule, with the next thinning 50 years from today. The effective 50-year interest rate for the project is: 50-year project interest rate = [(1 + . 0608)50] ??? 1 50-year project interest rate = 1, 808. 52% We also need the 50-year interest rate for the conservation fund, which will be: 50-year conservation interest rate = [(1 + . 0659)50] ??? 1 50-year conservation interest rate = 2, 330. 24% Since we have the cash flows from each thinning, and the next thinning will occur in 50 years, we can find the present value of future thinning on this schedule, which will be: PVThinning = $5, 000, 000/18. 0852 PVThinning = $276, 468. 34

The operating cash flow from each harvest on the 50-year schedule is $19, 456, 445, so the present value of the cash flows from the harvest are: PVHarvest = [($19, 456, 445/18. 0852] / (1 + . 0608)30 PVHarvest = $183, 367. 60 Now we can find the present value of the conservation fund deposits. The present value of these deposits is at Year 30 is: PVConservation = ???$162, 500 ??? $162, 500/23. 3024 PVConservation = ???$171, 485. 25 And the value today is: PVConservation = ???$171, 485.

25/(1 + . 0659)30 PVConservation = ???$25, 283. 50 So, the NPV of a 50-year harvest schedule is: NPV = $3, 316, 238 + 276, 469. 34 + 183, 367. 60 ??? 25, 283. 50 NPV = $3, 750, 790. 98 55-year harvest schedule: ?? | Revenue |$54, 516, 748 | |?? | Tractor cost | 12, 670, 000 | |?? | Road | 4, 525, 000 | |?? | Sale preparation & admin | 1, 629, 000 | |?? | Excavator piling | 750, 000 | |?? | Broadcast burning | 1, 500, 000 | |?? | Site preparation | 725, 000 | |?? | Planting costs | 1, 125, 000 | |?? | EBIT |$31, 592, 748 | |?? | Taxes | 11, 057, 462 | |?? | Net income (OCF) |$20, 535, 286 | The PV of the first harvest in 35 years is: PVFirst = $20, 535, 286/(1 + . 0608)35 PVFirst = $2, 606, 233 Thinning will also occur on a 55-year schedule, with the next thinning 55 years from today. The effective 55-year interest rate for the project is: 55-year project interest rate = [(1 + . 0608)55] ??? 1 55-year project interest rate = 2, 463. 10 We also need the 55-year interest rate for the conservation fund, which will be: 55-year conservation interest rate = [(1 + . 0659)55] ??? 1 55-year conservation interest rate = 3, 243. 60%

Since we have the cash flows from each thinning, and the next thinning will occur in 55 years, we can find the present value of future thinning on this schedule, which will be: PVThinning = $5, 000, 000/24. 6310 PVThinning = $202, 995. 97 The operating cash flow from each harvest on the 55-year schedule is $20, 535, 286, so the present value of the cash flows from the harvest are: PVHarvest = [($20, 535, 286/24. 6310] / (1 + . 0608)35 PVHarvest = $105, 810. 96 Now we can find the present value of the conservation fund deposits. The present value of these deposits is at Year 35 is: PVConservation = ???$162, 500 ??? $162, 500/32. 4360 PVConservation = ???$169, 097. 37 And the value today is: PVConservation = ???$169, 097.

37/(1 + . 0659)35 PVConservation = ???$18, 121. 00 So, the NPV of a 55-year harvest schedule is:

NPV = $2, 606, 233 + 202, 995. 97 + 105, 810. 96 ??? 18, 121. 00 NPV = $2, 896, 918. 96 The company should use a 40-year harvest schedule since it has the highest NPV. Notice that when the NPV began to decline, it continued declining. This is expected since the growth in the trees increases at a decreasing rate. So, once we reach a point where the increased growth cannot overcome the increased effects of compounding, harvesting should take place. There is no point further in the future which will provide a higher NPV. CHAPTER 8 FINANCING EAST COAST YACHT'S EXPANSION PLANS WITH A BOND ISSUE 1. A rule of thumb with bond provisions is to determine who the provisions benefit.

If the company benefits, the bond will have a higher coupon rate. If the bondholders benefit, the bond will have a lower coupon rate. a. A bond with collateral will have a lower coupon rate. Bondholders have the claim on the collateral, even in bankruptcy. Collateral provides an asset that bondholders can claim, which lowers their risk in default. The downside of collateral is that the company generally cannot sell the asset used as collateral, and they will generally have to keep the asset in good working order. b. The more senior the bond is, the lower the coupon rate. Senior bonds get full payment in bankruptcy proceedings before subordinated bonds receive any payment.

A potential problem may arise in that the bond covenant may restrict the company from issuing any future bonds senior to the current bonds. c. A sinking fund will reduce the coupon rate because it is a partial guarantee to

bondholders. The problem with a sinking fund is that the company must make the interim payments into a sinking fund or face default. This means the company must be able to generate these cash flows. d. A provision with a specific call date and prices would increase the coupon rate. The call provision would only be used when it is to the company’s advantage, thus the bondholder’s disadvantage. The downside is the higher coupon rate.

The company b