CHAPTER 11

Project Analysis and Evaluation

I. DEFINITIONS

FORECASTING RISK

a 1. The possibility that errors in projected cash flows can lead to incorrect estimates of net present value is called _____ risk.
   a. forecasting
   b. projection
   c. scenario
   d. Monte Carlo
   e. accounting

SCENARIO ANALYSIS

b 2. An analysis of what happens to the estimate of the net present value when you consider the best case and the worst case situations is called _____ analysis.
   a. forecasting
   b. scenario
   c. sensitivity
   d. simulation
   e. break-even

SENSITIVITY ANALYSIS

c 3. An analysis of what happens to the estimate of net present value when only one variable is changed is called _____ analysis.
   a. forecasting
   b. scenario
   c. sensitivity
   d. simulation
   e. break-even

SIMULATION ANALYSIS

d 4. An analysis which combines scenario analysis with sensitivity analysis is called _____ analysis.
   a. forecasting
   b. scenario
   c. sensitivity
   d. simulation
   e. break-even

BREAK-EVEN ANALYSIS

e 5. An analysis of the relationship between the sales volume and various measures of profitability is called _____ analysis.
   a. forecasting
   b. scenario
   c. sensitivity
   d. simulation
   e. break-even

VARIABLE COSTS

a 6. Variable costs:
   a. change in direct relationship to the quantity of output produced.
   b. are constant in the short-run regardless of the quantity of output produced.
   c. reflect the change in a variable when one more unit of output is produced.
   d. are subtracted from fixed costs to compute the contribution margin.
   e. form the basis that is used to determine the degree of operating leverage employed by a firm.

FIXED COSTS

b 7. Fixed costs:
   a. change as the quantity of output produced changes.
   b. are constant over the short-run regardless of the quantity of output produced.
   c. reflect the change in a variable when one more unit of output is produced.
   d. are subtracted from sales to compute the contribution margin.
   e. can be ignored in scenario analysis since they are constant over the life of a project.

MARGINAL COSTS

c 8. Marginal costs:
   a. are used solely for accounting and tax purposes.
   b. are equal to the total costs divided by the number of units produced.
   c. reflect changes created by producing one more unit of output.
   d. are the total production expenses of a firm for some stated period of time.
   e. are the variable costs incurred over the entire life of a project.

TOTAL COSTS

d 9. Total costs:
   a. must equal total revenue for a project.
   b. are constant no matter what quantity of output is produced.
   c. plus the change in retained earnings must equal total revenue.
   d. are the summation of all the expenses of a firm for a stated period of time.
   e. are equal to fixed costs plus the marginal cost.

AVERAGE COSTS

e 10. Average total cost:
   a. increases in direct proportion to an increase in output.
   b. is constant no matter what quantity of output is produced.
   c. changes as a function of the next unit of output produced.
   d. is the summation of all the expenses of a firm for a stated period of time.
   e. is equal to the average fixed cost plus the average variable cost.

MARGINAL REVENUE

a 11. The change in revenue that occurs when one more unit of output is sold is called the _____ revenue.
   a. marginal
   b. average
   c. total
   d. fixed
   e. variable

CONTRIBUTION MARGIN

b 12. The difference between the unit sales price and the variable cost per unit is called:
   a. operating leverage.
   b. the contribution margin.
   c. the gross profit.
   d. the net profit.
   e. the marginal revenue.

ACCOUNTING BREAK-EVEN

c 13. The sales level that results in a project's net income exactly equaling zero is called the _____ break-even.
   a. operational
   b. leveraged
   c. accounting
   d. cash
   e. financial

CASH BREAK-EVEN

d 14. The sales level that results in a project's operating cash flow exactly equaling zero is called the _____ break-even.
   a. operational
   b. leveraged
   c. accounting
   d. cash
   e. financial

FINANCIAL BREAK-EVEN

e 15. The sales level that results in a project's net present value exactly equaling zero is called the _____ break-even.
   a. operational
   b. leveraged
   c. accounting
   d. cash
   e. financial

OPERATING LEVERAGE

a 16. The degree to which a firm relies on fixed production costs is called its:
   a. operating leverage.
   b. financial break-even.
   c. contribution margin.
   d. cost sensitivity.
   e. fixed break-even.

DEGREE OF OPERATING LEVERAGE

b 17. The percentage change in operating cash flow relative to the percentage change in quantity sold is called the:
   a. marginal profit.
   b. degree of operating leverage.
   c. gross profit.
   d. net profit.
   e. financial break-even.

SOFT RATIONING

c 18. The procedure of allocating a fixed amount of funds for capital spending to each business unit is called:
   a. marginal spending.
   b. average spending.
   c. soft rationing.
   d. hard rationing.
   e. marginal rationing.

HARD RATIONING

e 19. The situation that exists when a firm has no means of financing any of its positive net present value projects is referred to as:
   a. financial stop-loss.
   b. contingency planning.
   c. marginal loss planning.
   d. soft rationing.
   e. hard rationing.

CAPITAL RATIONING

e 20. When firms do not have sufficient available financing to invest in all of the positive net present value projects they have identified, _____ is (are) said to exist.
   a. excess financing
   b. contingency options
   c. strategic options
   d. managerial options
   e. capital rationing

II. CONCEPTS

FORECASTING RISK

a 21. Forecasting risk emphasizes the point that the soundness of any management decision based on the net present value of a proposed project is highly dependent upon the:
   a. accuracy of the cash flow projections used in the analysis.
   b. the time frame in which the project is implemented.
   c. amount of the net present value in relation to the length of the project's life.
   d. level of capital spending in relation to the dollar amount of the net present value.
   e. frequency and duration of the project's cash flows.

SCENARIO ANALYSIS

d 22. The Better Bilt Co. is fairly cautious when considering new projects and therefore analyzes each project using the most optimistic, the most realistic, and the most pessimistic value for each variable. The company is conducting:
   a. forecasting research.
   b. sensitivity analysis.
   c. break-even analysis.
   d. scenario analysis.
   e. competitive analysis.

SCENARIO ANALYSIS

b 23. Conducting scenario analysis helps managers see the:
   a. impact of an individual variable on the outcome of a project.
   b. potential range of outcomes from a proposed project.
   c. changes in long-term debt over the course of a proposed project.
   d. possible range of market prices for their stock over the life of a project.
   e. allocation distribution of funds for capital projects under conditions of hard rationing.

SCENARIO ANALYSIS

d 24. When conducting a worst case scenario analysis, you should assume that:
   a. the sales quantity is at the upper end of your expectations.
   b. the highest sales price obtainable in the marketplace can be charged.
   c. no competition exists in the marketplace.
   d. your variable costs per unit are at the high end of the spectrum of possible prices.
   e. your fixed costs are constant and at the low end of your cost range.

SCENARIO ANALYSIS

e 25. The base case values used in scenario analysis are the ones considered the most:
   a. optimistic.
   b. desired by management.
   c. pessimistic.
   d. conducive to creating a positive net present value.
   e. likely to occur.

SCENARIO ANALYSIS

a 26. When you apply the highest sales price and the lowest costs in a project analysis, you are constructing:
   a. a best case scenario.
   b. a base case scenario.
   c. a worst case scenario.
   d. a sensitivity to fixed costs.
   e. a sensitivity to sales quantity.

SCENARIO ANALYSIS

d 27. Which one of the following statements concerning scenario analysis of a proposed project is correct?
   a. The worst case scenario determines the net present value of a project given that a natural disaster occurs.
   b. Scenario analysis assures a firm that the actual results of a project will lie within the range of returns as computed under the best and the worst case scenarios.
   c. Scenario analysis provides a clear signal to management to either accept or reject a project.
   d. Scenario analysis only provides management with a glimpse of the possible range of outcomes that could result should a project be accepted.
   e. When the base case scenario results in a positive net present value, management can be assured that the proposed project will meet or exceed their expectations.

SENSITIVITY ANALYSIS

b 28. Sensitivity analysis helps you determine the:
   a. range of possible outcomes given possible ranges for every variable.
   b. degree to which the net present value reacts to changes in a single variable.
   c. net present value given the best and the worst possible situations.
   d. degree to which a project is reliant upon the fixed costs.
   e. level of variable costs in relation to the fixed costs of a project.

SENSITIVITY ANALYSIS

e 29. Assume that you graph the changes in net present value against the changes in the value of a single variable used in a project. The steepness of the resulting function illustrates the:
   a. degree of operating leverage within the project.
   b. trade-off of variable versus fixed costs utilized by the project.
   c. range of total outcomes possible from accepting a proposed project.
   d. contribution margin of the project at various levels of output.
   e. degree of sensitivity of a project's outcome to a single variable of the project.

SENSITIVITY ANALYSIS

c 30. As the degree of sensitivity of a project to a single variable rises, the:
   a. lower the forecasting risk of the project.
   b. smaller the range of possible outcomes given a pre-defined range of values for the input.
   c. more attention management should place on accurately forecasting the future value of that variable.
   d. lower the maximum potential value of the project.
   e. lower the maximum potential loss of the project.

SENSITIVITY ANALYSIS

c 31. Sensitivity analysis is conducted by:
   a. holding all variables at their base level and changing the required rate of return assigned to a project.
   b. changing the value of two variables to determine their interdependency.
   c. changing the value of a single variable and computing the resulting change in the current value of a project.
   d. assigning either the best or the worst possible value to each variable and comparing the results to those achieved by the base case.
   e. managers after a project has been implemented to determine how each variable relates to the level of output realized.

SENSITIVITY ANALYSIS

d 32. To ascertain whether the accuracy of the variable cost estimate for a project will have much effect on the final outcome of the project, you should probably conduct _____ analysis.
   a. leverage
   b. scenario
   c. break-even
   d. sensitivity
   e. cash flow

SIMULATION

d 33. Simulation analysis is based on assigning a _____ and analyzing the results.
   a. narrow range of values to a single variable
   b. narrow range of values to multiple variables simultaneously
   c. wide range of values to a single variable
   d. wide range of values to multiple variables simultaneously
   e. single value to each of the variables

SIMULATION

e 34. The type of analysis that is most dependent upon the use of a computer is _____ analysis.
   a. scenario
   b. break-even
   c. sensitivity
   d. degree of operating leverage
   e. simulation

VARIABLE COSTS

d 35. Which one of the following is most likely a variable cost?
   a. office rent
   b. property taxes
   c. property insurance
   d. direct labor costs
   e. management salaries

VARIABLE COSTS

a 36. Which of the following statements concerning variable costs is (are) correct?
I. Variable costs minus fixed costs equal marginal costs.
II. Variable costs are equal to zero when production is equal to zero.
III. An increase in variable costs increases the operating cash flow.
IV. Variable costs can be ascertained with certainty when evaluating a proposed project.
a. II only
b. IV only
c. I and III only
d. II and IV only
e. I and II only

VARIABLE COSTS

a 37. All else constant, as the variable cost per unit increases, the:
a. contribution margin decreases.
b. sensitivity to fixed costs decreases.
c. degree of operating leverage decreases.
d. operating cash flow increases.
e. net profit increases.

FIXED COSTS

b 38. As additional equipment is purchased, the level of fixed costs tends to _____ and the degree of operating leverage tends to _____
a. remain constant; remain constant.
b. rise; rise.
c. rise; fall.
d. fall; rise.
e. fall; fall.

FIXED COSTS

c 39. Fixed costs:
I. are variable over long periods of time.
II. must be paid even if production is halted.
III. are generally affected by the amount of fixed assets owned by a firm.
IV. per unit remain constant over a given range of production output.
a. I and III only
b. II and IV only
c. I, II, and III only
d. I, II, and IV only
e. I, II, III, and IV

FIXED COSTS

a 40. Which one of the following is a fixed cost in the short-run?
a. a lease on a copier
b. the cost of a machine operator
c. the cost of raw materials
d. the cost of building maintenance
e. employee benefits for shop workers

MARGINAL COST

e 41. Management wants to offer a "Thank You" sale to its customers by offering to sell additional units of a product at the lowest price possible without affecting their profits. The price management charges for these one-time sale units should be set equal to the:
   a. average variable cost.
   b. average total cost.
   c. average total revenue.
   d. marginal revenue.
   e. marginal cost.

MARGINAL COST

d 42. The president of your firm would like to offer special sale prices to your best customers under the following terms:
   1. The prices will apply only to units purchased in excess of those normally purchased by the customer.
   2. The units purchased must be paid for in cash at the time of sale.
   3. The total quantity sold under these terms can not exceed the excess capacity of the firm.
   4. The net profit of the firm should not be affected either positively or negatively.

   Given these conditions, the special sale price should be set equal to the:
   a. average variable cost.
   b. average total cost minus the marginal cost.
   c. sensitivity value of the variable cost.
   d. marginal cost.
   e. marginal cost minus the average fixed cost per unit.

CONTRIBUTION MARGIN

c 43. The contribution margin must increase as:
   a. both the sales price and variable cost per unit increase.
   b. the fixed cost per unit declines.
   c. the gap between the sales price and the variable cost per unit widens.
   d. sales price per unit declines.
   e. the sales price minus the fixed cost per unit increases.

CONTRIBUTION MARGIN

c 44. Given a constant sales price, the larger the contribution margin, the:
   a. higher the variable cost per unit as a percentage of the sales price.
   b. higher the cash break-even point.
   c. lower the financial break-even point.
   d. lower the fixed costs as a percentage of the sales price.
   e. lower the gross profit per unit sold.

ACCOUNTING BREAK-EVEN

a 45. Which of the following statements are correct concerning the accounting break-even point?
   I. The net income is equal to zero at the accounting break-even point.
   II. The net present value is equal to zero at the accounting break-even point.
   III. The quantity sold at the accounting break-even point is equal to the total fixed costs plus depreciation divided by the contribution margin.
   IV. The quantity sold at the accounting break-even point is equal to the total fixed costs divided by the contribution margin.
   a. I and III only
   b. I and IV only
   c. II and III only
   d. II and IV only
   e. I, II, and IV only

ACCOUNTING BREAK-EVEN

e 46. At the accounting break-even level of sales, the operating cash flow is equal to:
   a. the net present value.
   b. fixed costs plus depreciation.
   c. the contribution margin times the quantity produced.
   d. fixed costs plus depreciation divided by the contribution margin.
   e. the depreciation expense.

ACCOUNTING BREAK-EVEN

b 47. All else constant, the accounting break-even level of sales will decrease when the:
   a. fixed costs increase.
   b. depreciation expense decreases.
   c. contribution margin decreases.
   d. variable costs per unit increase.
   e. selling price per unit decreases.

CASH BREAK-EVEN

b 48. Blumberg Industries has just completed their analysis of a proposed project. The results show that if the project is accepted, the firm will lose an amount of money which is exactly equal to their initial investment in the project. This means that:
   a. the firm should accept the project as long as they are confident of the assumptions used in the analysis.
   b. the fixed costs per unit are exactly equal to the contribution margin at the projected level of sales.
   c. sales are estimated at the financial break-even point.
   d. the estimated cash flow is equal to the depreciation expense.
   e. the project has a discounted payback period exactly equal to the life of the project.

CASH BREAK-EVEN

b 49. Which one of the following statements is correct about a project with an estimated internal rate of return of negative 100 percent?
   a. The net present value of the cash inflows is exactly equal to the initial investment in the project.
   b. The estimated sales volume is equal to the cash break-even level of sales.
   c. The estimated sales volume is equal to the financial break-even level of sales.
   d. The payback period is exactly equal to the life of the project.
   e. The net present value of the project is equal to zero.

FINANCIAL BREAK-EVEN

d 50. The point where a project produces a rate of return equal to the required return is known as the:
   a. point of zero operating leverage.
   b. cash break-even point.
   c. accounting break-even point.
   d. financial break-even point.
   e. internal break-even point.

FINANCIAL BREAK-EVEN

b 51. Which of the following statements are correct concerning the financial break-even point of a project?
   I. The present value of the cash inflows equals the amount of the initial investment.
   II. The payback period of the project is equal to the life of the project.
   III. The operating cash flow is at a level that produces a net present value of zero.
   IV. The project never pays back on a discounted basis.
   a. I and II only
   b. I and III only
   c. II and IV only
   d. III and IV only
   e. I, III, and IV only

FINANCIAL BREAK-EVEN

d 52. You would like to know the minimal level of sales needed for a project to be accepted based on net present value. You should compute the sales quantity needed for the:
   a. degree of operating leverage to equal zero.
   b. net income to equal zero.
   c. operating cash flow to equal zero.
   d. discounted payback period to equal the life of the project.
   e. payback period to equal the life of the project.

OPERATING LEVERAGE

a 53. You are considering a project that you believe is quite risky. To reduce any potentially harmful results from accepting this project, you could:
   a. lower the degree of operating leverage.
   b. lower the contribution margin.
   c. increase the initial cash outlay.
   d. increase the fixed costs per unit while lowering the contribution margin.
   e. lower the operating cash flow of the project.

OPERATING LEVERAGE

d 54. Which of the following statements are generally correct about a project with a high degree of operating leverage?
I. The project has relatively high variable costs.
II. The project is capital intensive.
III. The amount of the initial cash outlay is generally relatively large in relation to the size of the project.
IV. The forecasting risk of the project is high.
a. I and II only
b. III and IV only
c. I, II, and III only
d. II, III, and IV only
e. I, II, and IV only

OPERATING LEVERAGE

b 55. Which one of the following could lower the risk of a project by lowering the degree of operating leverage?
a. You could hire temporary workers from an employment agency rather than hire part-time employees.
b. You could use sub-contractors to produce sub-assemblies of your product rather than purchase new equipment to do the work in-house.
c. You could lease equipment on a long-term basis rather than buy the equipment.
d. You could lower the projected selling price per unit.
e. You could change the production method to one which relies more on fixed costs and less on variable costs than the current proposed method of production.

SOFT RATIONING

d 56. The Delta Mare Co. has received requests from each of the departments within their company for capital investment funds for next year. The management of Delta Mare decides to allocate the available funds based on the net present value (NPV) of each proposal starting with the highest NPV first. Management is following a practice known as _____ rationing.
a. net present value
b. rate of return
c. capital improvement
d. soft
e. hard

HARD RATIONING

c 57. The management of the Wish We Could Co. has numerous requests on their desks from division managers. These requests are seeking funds for positive net present value projects with projected rates of return ranging from 8 percent to 100 percent. Management determines that they must deny all funding requests due to the financial situation of the company. Management is apparently in a situation referred to as:
a. accounting break-even.
b. financial break-even.
c. hard rationing.
d. zero leverage.
e. maximum capital intensity.

III. PROBLEMS

Use this information to answer questions 58 through 62.

The Adept Co. is analyzing a proposed project. The company expects to sell 2,500 units, give or take 10 percent. The expected variable cost per unit is $8 and the expected fixed costs are $12,500. Cost estimates are considered accurate within a plus or minus 5 percent range. The depreciation expense is $4,000. The sale price is estimated at $16 a unit, give or take 2 percent. The company bases their sensitivity analysis on the base case scenario.

SCENARIO ANALYSIS

d 58. What is the sales revenue under the best case scenario?
- a. $40,000
- b. $43,120
- c. $44,000
- d. $44,880
- e. $48,400

SCENARIO ANALYSIS

d 59. What is the contribution margin under the base case scenario?
- a. $2.67
- b. $3.00
- c. $7.92
- d. $8.00
- e. $8.72

SCENARIO ANALYSIS

c 60. What is the amount of the fixed cost per unit under the worst case scenario?
- a. $4.55
- b. $5.00
- c. $5.83
- d. $6.02
- e. $6.55

SENSITIVITY ANALYSIS

b 61. The company is conducting a sensitivity analysis on the sales price using a sales price estimate of $17. Using this value, the earnings before interest and taxes will be:
- a. $4,000
- b. $6,000
- c. $8,500
- d. $10,000
- e. $18,500

SENSITIVITY ANALYSIS

b 62. The company conducts a sensitivity analysis using a variable cost of $9. The total variable cost estimate will be:
   a. $21,375
   b. $22,500
   c. $23,625
   d. $24,125
   e. $24,750

Use this information to answer questions 63 through 67.

The Can-Do Co. is analyzing a proposed project. The company expects to sell 12,000 units, give or take 4 percent. The expected variable cost per unit is $7 and the expected fixed cost is $36,000. The fixed and variable cost estimates are considered accurate within a plus or minus 6 percent range. The depreciation expense is $30,000. The tax rate is 34 percent. The sale price is estimated at $14 a unit, give or take 5 percent.

SCENARIO ANALYSIS

a 63. What is the earnings before interest and taxes under the base case scenario?
   a. $18,000
   b. $24,000
   c. $36,000
   d. $48,000
   e. $54,000

SCENARIO ANALYSIS

c 64. What is the earnings before interest and taxes under a best case scenario?
   a. $22,694.40
   b. $24,854.40
   c. $37,497.60
   d. $52,694.40
   e. $67,947.60

SCENARIO ANALYSIS

c 65. What is the net income under the worst case scenario?
   a. -$566.02
   b. -$422.40
   c. -$278.78
   d. $3,554.50
   e. $5,385.60

SENSITIVITY ANALYSIS

d 66. What is the operating cash flow for a sensitivity analysis using total fixed costs of $32,000?
   a. $14,520
   b. $16,520
   c. $22,000
   d. $44,520
   e. $52,000

SENSITIVITY ANALYSIS

d 67. What is the contribution margin for a sensitivity analysis using a variable cost per unit of $8?
   a. $3
   b. $4
   c. $5
   d. $6
   e. $7

VARIABLE COST

c 68. A firm is reviewing a project with labor cost of $8.90 per unit, raw materials cost of $21.63 a unit, and fixed costs of $8,000 a month. Sales are projected at 10,000 units over the three-month life of the project. What are the total variable costs of the project?
   a. $216,300
   b. $297,300
   c. $305,300
   d. $313,300
   e. $329,300

VARIABLE COST

d 69. A project has earnings before interest and taxes of $5,750, fixed costs of $50,000, a selling price of $13 a unit, and a sales quantity of 11,500 units. Depreciation is $7,500. What is the variable cost per unit?
   a. $6.75
   b. $7.00
   c. $7.25
   d. $7.50
   e. $7.75

FIXED COST

b 70. At a production level of 5,600 units a project has total costs of $89,000. The variable cost per unit is $11.20. What is the amount of the total fixed costs if the production level is increased to 6,100 units without increasing the total fixed assets?
   a. $24,126
   b. $26,280
   c. $27,090
   d. $27,820
   e. $28,626

FIXED COST

e 71. A firm is considering a project with a cash break-even point of 13,500 units. The selling price is $13 a unit and the variable cost per unit is $7. What is the projected amount of fixed costs?
   a. $64,000
   b. $70,500
   c. $74,500
   d. $78,000
   e. $81,000

MARGINAL COST

b 72. Ted's Sleds produces sleds at an average variable cost per unit of $39.18 when production quantity is 1,250 units. When production increases to 1,251 units the average variable cost declines to $39.16. What is the minimal price that Ted's Sleds can charge for the 1,251st sled without affecting their net profits?
   a. $13.89
   b. $14.16
   c. $14.21
   d. $14.37
   e. $14.44

CONTRIBUTION MARGIN

c 73. Wilson's Meats has computed their fixed costs to be $.60 for every pound of meat they sell given an average daily sales level of 500 pounds. They charge $3.89 per pound of top-grade ground beef. The variable cost per pound is $2.99. What is the contribution margin per pound of ground beef sold?
   a. $.30
   b. $.60
   c. $.90
   d. $2.99
   e. $3.89

CONTRIBUTION MARGIN

e 74. Ralph and Emma's is considering a project with total sales of $17,500, total variable costs of $9,800, total fixed costs of $3,500, and estimated production of 400 units. The depreciation expense is $2,400 a year. What is the contribution margin per unit?
   a. $4.50
   b. $10.50
   c. $14.14
   d. $19.09
   e. $19.25

ACCOUNTING BREAK-EVEN

a 75. You are considering a new project. The project has projected depreciation of $720, fixed costs of $6,000, and total sales of $11,760. The variable cost per unit is $4.20. What is the accounting break-even level of production?

a. 1,200 units
b. 1,334 units
c. 1,372 units
d. 1,889 units
e. 1,910 units

ACCOUNTING BREAK-EVEN

b 76. The accounting break-even production quantity for a project is 5,425 units. The fixed costs are $31,600 and the contribution margin is $6. What is the projected depreciation expense?

a. $700
b. $950
c. $1,025
d. $1,053
e. $1,100

ACCOUNTING BREAK-EVEN

d 77. A project has an accounting break-even point of 2,000 units. The fixed costs are $4,200 and the depreciation expense is $400. The projected variable cost per unit is $23.10. What is the projected sales price?

a. $20.80
b. $21.00
c. $21.20
d. $25.40
e. $25.60

ACCOUNTING BREAK-EVEN

a 78. A proposed project has fixed costs of $3,600, depreciation expense of $1,500, and a sales quantity of 1,300 units. What is the contribution margin if the projected level of sales is the accounting break-even point?

a. $3.92
b. $4.14
c. $4.50
d. $4.80
e. $5.00

CASH BREAK-EVEN

a 79. The Wiltmore Co. would like to add a new product to complete their lineup. They want to know how many units they must sell to limit their potential loss to their initial investment. What is this quantity if their fixed costs are $12,000, the depreciation expense is $2,500, and the contribution margin is $1.30? (Round to whole units)

a. 9,231 units
b. 9,903 units
c. 10,002 units
d. 10,629 units
e. 11,154 units

CASH BREAK-EVEN

a 80. The Lakeside Inn is considering expanding their operations. Fixed costs are estimated at $92,000 a year. The variable cost per unit is estimated at $22.50. The estimated sales price is $37.50 per unit. What is the cash break-even point of this project? (Round to whole units)
   a. 6,133
   b. 6,420
   c. 6,667
   d. 7,000
   e. 7,180

FINANCIAL BREAK-EVEN

c 81. A project has a contribution margin of $5, projected fixed costs of $12,000, projected variable cost per unit of $12, and a projected financial break-even point of 5,000 units. What is the operating cash flow at this level of output?
   a. $1,000
   b. $12,000
   c. $13,000
   d. $68,000
   e. $73,000

FINANCIAL BREAK-EVEN

a 82. Thompson & Son have been busy analyzing a new product. They have determined that an operating cash flow of $16,700 will result in a zero net present value, which is a company requirement for project acceptance. The fixed costs are $12,378 and the contribution margin is $6.20. The company feels that they can realistically capture 10 percent of the 50,000 unit market for this product. Should the company develop the new product? Why or why not?
   a. yes; because 5,000 units of sales exceeds the quantity required for a zero net present value
   b. yes; because the cash break-even point is less than 5,000 units
   c. no; because the firm can not generate sufficient sales to obtain at least a zero net present value
   d. no; because the project has an expected internal rate of return of negative 100 percent
   e. no; because the project will not pay back on a discounted basis

FINANCIAL BREAK-EVEN

e 83. Kurt Neal and Son is considering a project with a discounted payback just equal to the project's life. The projections include a sales price of $11, variable cost per unit of $8.50, and fixed costs of $4,500. The operating cash flow is $6,200. What is the break-even quantity?
   a. 1,800 units
   b. 2,480 units
   c. 3,057 units
   d. 3,750 units
   e. 4,280 units

OPERATING LEVERAGE

b 84. Ralph is in charge of a project that has a degree of operating leverage of 2.5. What will happen to the operating cash flows if Ralph increases the number of units sold by 5 percent?
   a. increase by 2 percent
   b. increase by 12.5 percent
   c. increase by 50 percent
   d decrease by 12.5 percent
   e. decrease by 50 percent

OPERATING LEVERAGE

b 85. Ann Marie has noted that every time the sales quantity increases by 3 percent for a particular project, the operating cash flow for the project increases by 5 percent. What is the degree of operating leverage for this project if the contribution margin is $4?
   a. .42
   b. 1.67
   c. 2.33
   d. 4.51
   e. 5.67

OPERATING LEVERAGE

d 86. The fixed costs of a project are $8,000. The depreciation expense is $3,500 and the operating cash flow is $20,000. What is the degree of operating leverage for this project?
   a. .40
   b. .71
   c. .87
   d. 1.40
   e. 2.50

OPERATING LEVERAGE

e 87. Webster and Words manage a product with a 3.5 degree of operating leverage. Sales of the product are expected to decline by 15 percent next year. What is the expected change in the operating cash flow for this product for next year?
   a. increase by 23.3 percent
   b. increase by 52.5 percent
   c. decrease by 4.3 percent
   d. decrease by 23.3 percent
   e. decrease by 52.5 percent

IV. ESSAYS

OPERATING LEVERAGE

88. What is operating leverage and why is it important in the analysis of capital expenditure projects?

    The text defines operating leverage as "the degree to which a project or firm is committed to fixed production costs". It is the result of the presence of fixed operating costs in the income stream. Typically, these costs are the result of a reliance on capital over labor. The importance of operating leverage is that as it rises, so do the potential costs of forecasting error.

FORECASTING ERROR

89. What is "forecasting error?" Why is it important to the analysis of capital expenditure projects?

    A strong answer would not only define forecasting error, but discuss its importance in terms of an evaluation of the likelihood of investing in negative NPV projects. Further elaboration might include categories of projects most likely to be susceptible to forecasting risk, as well as a discussion of the relative usefulness of each form of "what-if" analysis in assessing this risk.

BREAK-EVEN ANALYSIS

90. How do the accounting, cash, and financial break-even points differ from one another?

    The accounting break-even point is that level of sales at which the firm covers its fixed operating costs and depreciation expense; i.e., net income equals zero. The cash break-even point is that level of sales at which the firm covers its cash fixed operating costs; i.e., OCF equals zero. The financial break-even point is that level of sales at which the project has no wealth implications for the firm; i.e., NPV equals zero.

SCENARIO ANALYSIS

91. What is the benefit of scenario analysis if it does not produce an accept or reject decision for a proposed project?

    Scenario analysis provides management with a look at potential outcomes given various assumptions and helps measure the potential for project failure. This information provides a basis upon which management can apply their wisdom and knowledge to make the accept or reject decision. However, the final decision does require human judgment.

EVALUATION

92. Consider the following statement by a project analyst: "I analyzed my project using scenarios for the base case, best case, and worst case. I computed break-evens and degrees of operating leverage. I did sensitivity analysis and simulation analysis. I computed NPV, IRR, payback, AAR, and PI. In the end, I have over a hundred different estimates and am more confused than ever. I would have been better off just sticking with my first estimate and going by my gut reaction." Critique this statement.

    The goal of evaluating an NPV estimate or other decision criteria is to determine the reasonableness of it. If done properly, the added analysis will heighten either the degree of comfort or the degree of discomfort about a project. Ultimately, this type of analysis reveals both the weaknesses and the strengths of a project. Furthermore, it helps isolate potential trouble areas and sharpens the focus on which variables are most crucial for forecasting. The very nature of the process still leaves a great deal of uncertainty even after all of the analysis is complete. However, in the end, the analyst should be better informed and more comfortable in making a decision, not less so.