

Corporate Finance

1. A company is considering building a distribution center on undeveloped land that it acquired more than ten years ago at a cost of \$400,000. The company estimates the cost of putting in utilities, sewers, roads and other such costs of preparing the land for the distribution center at \$200,000. Alternatively, the undeveloped land could be sold today to another company for \$600,000. In evaluating this capital project, the investment outlay associated with the use of the land by the distribution center will *most likely* be:

- A. \$400,000.
- B. \$600,000.
- C. \$800,000.

Answer: C

The investment outlay associated with the use of the land should reflect the opportunity cost of the foregone sale (\$600,000) plus the incremental cost of preparing the land for use as a distribution center (\$200,000). \$600,000 plus \$200,000 equals \$800,000.



2. A project has the following annual cash flows:

Year 0:	Year 1:	Year 2:	Year 3
-\$606,061	\$2,151,515	-\$2,542,424	\$1,000,000

Which discount rate *most likely* provides a positive net present value?

- A. 15%
- B. 18%
- C. 21%

Answer = C

Year	Cash flow	K=15%	K=18%	K=21%	Calculation
0	-606,061	-606,061	-606,061	-606,061	-606,061
1	2,151,515	1,870,882.6	1,823,317.8	1,778,111.6	$+2,151,515/(1+k)$
2	-2,542,424	-1,922,437.8	-1,825,929.3	-1,736,509.8	$-2,542,424/(1+K)^2$
3	1,000,000	657,516.2	608,630.9	564,473.9	$+1,000,000/(1+K)^3$
	NPV	-\$100.0	-\$41.7	+\$14.7	K = Discount rate

The NPV at 21% is \$14.7; the other two NPVs are negative.

3. Two mutually exclusive projects have conventional cash flows, but one project has a larger NPV while the other project has a higher IRR. Which of the following *least likely* explains this conflict?

- A. Reinvestment rate assumption.
- B. Size of the projects' initial investments.



C. Risk of the projects as reflected in the required rate of return.

Answer: C

Conflicting decision rules based on the NPV and IRR methods are related to the reinvestment rate assumption, the timing of the cash flows, or the scale of the projects. Differing required rates of return are not related to conflicting NPV and IRR decisions.

4. The following information is available for a company:

- Bonds are priced at par and they have an annual coupon rate of 9.2%
- Preferred stock is priced at \$8.18 and it pays an annual dividend of \$1.35
- Common equity has a beta of 1.3
- The risk-free rate is 4% and the market premium is 11%
- Capital structure: Debt = 30%; Preferred stock = 15%; Common equity = 55%
- The tax rate is 35%

The weighted average cost of capital (WACC) for the company is closest to:

- A. 11.5%.
- B. 13.4%.
- C. 14.3%.



Answer: C

$r_d = 9.2\%$, the yield to maturity on a par value bond is the coupon rate of the bond.

$r_{p-p} = D_p/P_p = \$1.35/\$8.18 = 16.5\%$

$r_e = R_F + \beta[E(R_M) - R_F] = 4\% + 1.3[11\%] = 18.3\%$

$WACC = w_d r_d (1 - t) + w_{p-p} r_{p-p} + w_e r_e = 30\% \times 9.2\% \times (1 - 35\%) + 15\% \times 16.5\% + 55\% \times 18.3\% = 14.33\%$

5. A company's optimal capital budget *most likely* occurs at the intersection of the:

- A. net present value and internal rate of return profiles.
- B. marginal cost of capital and net present value profiles.
- C. marginal cost of capital and investment opportunity schedule.

Answer: C

The point where the marginal cost of capital (MCC) intersects the investment opportunity schedule (IOS) is the optimal capital budget.

6. Using the company's income statement presented, its degree of operating leverage is closest to:

Income Statement	\$ millions
Revenues	9.8
Variable Operating Costs	7.2
Fixed Operating Costs	1.5
Operating Income	1.1
Interest	0.6



Taxable Income	0.5
Tax	0.2
Net Income	0.3

- A. 1.1.
 B. 1.7.
 C. 2.4.

Answer: C

C is correct.

$$\begin{aligned} \text{DOL} &= (\text{Revenues} - \text{Variable operating costs}) \\ &= (\text{Revenues} - \text{Variable operating costs} - \text{Fixed operating costs}) \\ &= 9.8 - 7.29.8 - 7.2 - 1.5 \\ &= 2.36. \end{aligned}$$



7. The following information is available for a firm:

Number of shares outstanding:	4 million
Tax rate:	40%
Cost of debt (pretax):	10%
Current stock price:	\$20.00
Net income:	\$6 million

A plan to repurchase \$10 million worth of shares using debt will most likely cause the earnings per share to:

- A. increase.
 B. decrease.
 C. remain unchanged.

Answer: A

Long way:

$$\text{Current earnings per share} = \$6,000,000 \div 4,000,000 = \$1.50$$

$$\text{Number of shares repurchased} = \$10,000,000 \div \$20.00 = 500,000$$

$$\begin{aligned} \text{Adjusted net income} &= \text{Current net income} - [\text{debt} \times \text{"after tax" cost of debt}] = \\ &= \$6,000,000 - [\$10,000,000 \times 10\% \times (1 - 40\%)] = \$5,400,000 \end{aligned}$$

$$\text{New earnings per share} = \$5,400,000 \div [4,000,000 - 500,000] = \$1.54$$

Short way:

$$\text{Current earnings per share} = \$6,000,000 \div 4,000,000 = \$1.50 \quad \text{Earnings yield} = \$1.50 \div \$20.00 = 7.5\%$$

If the after-tax cost of debt ($10\% \times [1 - 40\%] = 6\%$) is below the earnings yield, the earnings per share will increase.

8. Other factors held constant, the reduction of a company's average accounts payables due to suppliers offering less trade credit will *most likely*:

- A. reduce the operating cycle.
 B. increase the operating cycle.



C. not affect the operating cycle.

Answer: C

Payables are not part of the operating cycle calculation. Operating cash cycle includes inventory and accounts receivable.

9. Assuming trade credit terms of 2/10 net 40, paying the supplier on the 30th day creates an annualized cost of trade credit (%) *closest* to:

- A. 27.9.
- B. 44.6.
- C. 109.0.

Answer: B

Cost of trade credit = $\{ [1 + \text{Discount}/(1 - \text{Discount})]^{(365/\text{Days beyond discount period})} - 1 \}$
 $= \{ 1 + (0.02 \div (1 - 0.02))^{(365 \div (30 - 10))} - 1 \} = 44.6\%$



10. Which of the following statements related to corporate governance is least accurate?

- A. It is desirable for the chairman of the board to be the firm's current CEO or former CEO.
- B. Board members should not have any material relationships with the firm's advisers, auditors, and their families.
- C. It is desirable for board members to have board experience with other boards.

Answer: A

The willingness of independent board members to express opinions that are not aligned with managements may be impaired when the chairman is the firm's current CEO or a former CEO.

