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SET - I

Q.1) The consequences of " over-capitalization" are far more serious than "under-capitalization" . Discuss the statement by elaborating on the causes and effects of over-capitalization and Under-capitalization.

Answer .:-

Overcapitalization:

- **Causes:**
  - Poor financial planning: This could involve raising more capital than needed, potentially due to overly ambitious expansion plans or misjudging future needs.
  - Higher startup costs: Industries with expensive equipment or initial investments can be more prone to overcapitalization.
  - Acquisitions or mergers: If a company takes on a lot of debt to finance an acquisition, it can become overcapitalized.
- **Effects:**
  - High debt burden: The company has to make large interest payments on the debt, which can eat into profits and limit its ability to invest in growth opportunities.
  - Reduced return on equity (ROE): ROE measures how much profit a company generates from shareholders' investments. With excessive capital, ROE suffers as profits are spread over a larger capital base.
  - Decreased financial flexibility: Overcapitalization can make it difficult for a company to react to changing market conditions or unexpected events.
  - Potential for bankruptcy: In extreme cases, the debt burden becomes unsustainable, and the company can enter bankruptcy.

Undercapitalization:

- **Causes:**
  - Insufficient initial funding: Startups often struggle to raise enough capital, leading to undercapitalization.
  - Rapid growth: If a company grows faster than anticipated, it may outstrip its available capital.
  - Poor cash flow management: Inefficient use of cash can leave a company short on funds for day-to-day operations.
- **Effects:**

- Limited growth opportunities: Without enough capital to invest in marketing, research, or expansion, a company's growth can be stunted.
- Difficulty meeting financial obligations: Undercapitalized companies may struggle to pay bills or meet payroll on time.
- Increased risk of failure: The inability to meet financial obligations can lead to insolvency and business closure.

Why Overcapitalization is Worse:

While both scenarios have drawbacks, overcapitalization carries a greater risk. Here's why:

- **Debt burden:** The interest payments on excessive debt are a fixed cost that cannot be easily eliminated. Even in a downturn, the company still owes that money.
- **Reduced flexibility:** An overcapitalized company has less room to maneuver. It may be hesitant to take on new debt when needed or struggle to raise additional capital from investors.
- **Bankruptcy risk:** If profits aren't enough to cover the debt burden, bankruptcy becomes a real possibility. This can be devastating for employees, shareholders, and creditors.

Undercapitalization, while risky, offers more potential for recovery. A company can implement cost-cutting measures, improve cash flow management, or seek additional funding to get back on track.

So, both overcapitalization and undercapitalization can harm a business. However, the potential for long-term damage and financial ruin is far greater with overcapitalization due to the burden of excessive debt.

Q.2) Zubi wants to invest in bonds in given alternative situations , as stated below . You are required to advise her in selecting the best option :

Bond Price = Rs. 500
Coupon rate = 8%
Life of bond = 5 years
Redemption value = Rs.500
Rate of return = 10%

Options :

1. **Interest accrued Annually**
2. **Interest accrued Bi-Annually**

3. Interest accrued Quarterly

Answer .:- To advise Zubi on selecting the best option for investing in bonds, let's calculate the total returns for each option and compare them:

Given data:

- Bond Price (P) = Rs. 500
- Coupon rate (C) = 8%
- Life of bond (n) = 5 years
- Redemption value = Rs. 500
- Rate of return (r) = 10%

Let's calculate the total returns for each option:

1. **Interest accrued Annually:**
   The coupon payment per year = Coupon rate * Bond Price = 8% * Rs. 500 = Rs. 40
   Total coupon payments over 5 years = Coupon payment per year * Life of bond = Rs. 40 * 5 = Rs. 200
   Total redemption value after 5 years = Rs. 500
   Total returns = Total coupon payments + Redemption value - Bond Price = Rs. 200 + Rs. 500 - Rs. 500 = Rs. 200

2. **Interest accrued Bi-Annually:**
   Coupon payment per period = Coupon rate * Bond Price / 2 = 8% * Rs. 500 / 2 = Rs. 20
   Total coupon payments over 5 years = Coupon payment per period * Life of bond * 2 = Rs. 20 * 5 * 2 = Rs. 200
   Total redemption value after 5 years = Rs. 500
   Total returns = Total coupon payments + Redemption value - Bond Price = Rs. 200 + Rs. 500 - Rs. 500 = Rs. 200

3. **Interest accrued Quarterly:**
   Coupon payment per period = Coupon rate * Bond Price / 4 = 8% * Rs. 500 / 4 = Rs. 10
   Total coupon payments over 5 years = Coupon payment per period * Life of bond * 4 = Rs. 10 * 5 * 4 = Rs. 200
   Total redemption value after 5 years = Rs. 500
   Total returns = Total coupon payments + Redemption value - Bond Price = Rs. 200 + Rs. 500 - Rs. 500 = Rs. 200

As we can see, regardless of the frequency of interest accrual, the total returns over the 5-year period remain the same, which is Rs. 200. So, Zubi can choose any of the options without affecting her total returns.

Q.3.a) Differentiate between Operating and Financial Leverage.

Answer .:-

Operating Leverage:

- **Focuses on:** Impact of changes in sales volume on a company's operating income (profit before interest and taxes).
- **Cost Structure:** Analyzes the proportion of fixed costs (rent, salaries) versus variable costs (materials, labor per unit) in a company's operations.
- **Effect:**
    - **High Operating Leverage:** A company with a high proportion of fixed costs experiences larger swings in operating income with even small changes in sales. If sales increase, profits rise faster. Conversely, a sales decline leads to a sharper drop in profits.
    - **Low Operating Leverage:** Companies with a lower fixed cost structure have more stable operating income. Profits increase or decrease at a more moderate rate with sales fluctuations.

Financial Leverage:

- **Focuses on:** Impact of debt financing on a company's return on equity (ROE) and earnings per share (EPS).
- **Capital Structure:** Analyzes the mix of debt and equity used to finance the company's assets.
- **Effect:**
    - **High Financial Leverage:** Companies with a high debt ratio (more debt financing) magnify the impact of changes in earnings before interest and taxes (EBIT) on ROE and EPS. If EBIT increases, EPS rises significantly. However, a decline in EBIT can lead to a sharper drop in EPS, increasing risk for shareholders.
    - **Low Financial Leverage:** Companies with a lower debt ratio have a more stable EPS. Changes in EBIT have a less pronounced effect on shareholder returns.

In a nutshell:

- Operating leverage deals with how a company's cost structure amplifies changes in sales volume.
- Financial leverage deals with how debt financing magnifies changes in profitability for shareholders.

Q.3.b) If you Contribute Rs. 2,400 every year to retirement account . Calculate what will be the future value of this annuity in 30 years if 7% is the annual rate of return .

Answer .:- To calculate the future value of an annuity, we can use the future value of an annuity formula:

$$FV = P \text{ x}(\frac{(1+r)^n - 1}{r})$$

Where

- FV = Future value of the annuity
- P = Payment per period (annual contribution)
- r = Annual interest rate (in decimal)
- n = Number of periods (number of years)

Given

- Payment per period (annual contribution) P = Rs.2,400
- Annual interest rate r = 7% = 0.07
- Number of periods (number of years) n = 30

Now, let's plug in the values:

$$FV = 2400 \text{ x}(\frac{(1+0.07)^{30} - 1}{0.07})$$

$$FV = 2400 \text{ x}(\frac{(1.07)^{30} - 1}{0.07})$$

Now , calculate $(1.07)^{30}$:

$$(1.07)^{30} \approx 7.612255$$

Now, plug this value back into the formula:

$$FV = 2400 \text{ x}(\frac{7.612255 - 1}{0.07})$$

$$FV = 2400 \text{ x}(\frac{6.612255}{0.07})$$

$$FV \approx 2400 \text{ x } 94.46157$$

$$FV \approx Rs. 226{,}308.97$$

So, the future value of this annuity in 30 years, with an annual rate of return of 7%, would be approximately Rs. 226,308.97.

SET - II

Q.4) Do you think that different factors affecting capital structure decisions will be viewed differently by different companies ? Support your answer with suitable examples.

Answer .:-

Varying Industry Risks:

- **Tech Startup vs. Utility Company:** A high-growth tech startup might prioritize **growth potential** over short-term profitability. They may be comfortable with a higher debt ratio to fund research and development, even if it increases financial risk. Conversely, a utility company with a stable business model might prioritize **financial stability** and a lower debt ratio to maintain a strong credit rating for accessing future debt at lower interest rates.

Company Size and Maturity:

- **Small Company vs. Large Corporation:** Smaller companies often have limited access to capital markets and may rely more on **equity financing** (issuing stock) due to the perceived risk of lenders. As a company grows and becomes more established, they may have more options for debt financing with favorable interest rates, allowing them to leverage **debt** to a greater extent.

Growth Stage:

- **Early-Stage vs. Mature Company:** A young company in its **growth stage** might prioritize **investment** to expand its market share. They might be willing to tolerate a higher debt burden to fund these initiatives. On the other hand, a mature company in its **stabilization stage** might focus on **debt repayment** and a more conservative capital structure.

Examples:

- **Retail Company:** A retail company facing intense competition might prioritize **maintaining a healthy cash flow** to invest in promotions and discounts. This could lead them to favor a lower debt ratio to avoid large interest payments that strain cash flow.
- **Pharmaceutical Company:** A pharmaceutical company with a successful drug in development might take on significant debt to **fund clinical trials and accelerate product launch**. While risky, the potential future profits from the drug could justify the increased financial leverage.

The ideal capital structure is not a one-size-fits-all approach. Companies weigh various factors based on their specific circumstances and risk tolerance. Understanding how these factors differ across industries, company sizes, and growth stages is crucial for making sound capital structure decisions.

Q.5) You are required to prepare a statement showing the working capital required to finance the level of activity of 18000 units per year from the following information :-

Particular	**Rs.**
Raw material per Unit	**12**
Direct Labor per Unit	**03**
Overheads per Unit	**09**

Total Cost per Unit	**24**
Profit per unit	**06**
Selling price per unit	**30**

Additional Information:

1. Raw material is in stock on average for 2 months.
2. Materials are in process on an average for half a month.
3. Finished goods are in stock on an average for two months.
4. Credit allowed by creditors is two months in respect of raw materials supplied.
5. Credit allowed to debtors is three months. Debtors are calculated on the selling price.
6. Lag in payment of wages is half a month.
7. Cash on hand at the bank is expected to be Rs. 7000.
8. All activities are evenly spread out during the year.

Answer .:-

Working Capital Statement for 18,000 Units per Year

A. Current Assets

1. Raw Material:
    - Annual Usage (Units): 18,000
    - Average Stock (Months): 2
    - Cost per Unit: Rs. 12
    - Value of Raw Material (18,000 * 12 * 2/12) = Rs. 432,000

2. Work in Progress:
    - Annual Production (Units): 18,000
    - Average WIP (Months): 0.5
    - Cost per Unit (Assume 50% of total cost): Rs. 12 (24/2)
    - Value of WIP (18,000 * 12 * 0.5/12) = Rs. 108,000
3. Finished Goods:
    - Annual Production (Units): 18,000
    - Average Finished Goods (Months): 2
    - Selling Price per Unit: Rs. 30
    - Value of Finished Goods (18,000 * 30 * 2/12) = Rs. 900,000
4. Debtors:
    - Annual Sales (Units): 18,000
    - Average Credit Period (Months): 3
    - Selling Price per Unit: Rs. 30
    - Value of Debtors (18,000 * 30 * 3/12) = Rs. 1,350,000
5. Cash on Hand: Rs. 7,000

Total Current Assets (A1 + A2 + A3 + A4 + A5) = Rs. 2,797,000

B. Current Liabilities

1. Creditors:
    - Annual Raw Material Cost: Rs. 432,000 (from A1)
    - Average Credit Period (Months): 2
    - Value of Creditors (432,000 * 2/12) = Rs. 72,000
2. Accrued Wages:
    - Annual Cost per Unit (assume 50% of labor cost): Rs. 1.5 (3/2)
    - Annual Wages (18,000 * 1.5) = Rs. 27,000
    - Average Credit Period (Months): 0.5
    - Value of Accrued Wages (27,000 * 0.5/12) = Rs. 1,125

Total Current Liabilities (B1 + B2) = Rs. 73,125

C. Working Capital (A - B)

Working Capital Required = Rs. 2,723,875

Explanation:

- This statement calculates the working capital needed to finance production of 18,000 units per year.

- Current assets include raw material, work in progress, finished goods, debtors, and cash on hand.
- Current liabilities include creditors for raw materials and accrued wages.
- Working capital is the difference between current assets and current liabilities.

Note:

- This is a simplified example and may not consider all factors affecting working capital needs.
- The assumed percentages for work in progress cost and accrued wages can be adjusted based on specific production processes and company policies.

Q.6.a) A manufacturing company place a semi-annual order of 24,000 units at a price of Rs.20 per unit . Its carrying cost is 15% and the order cost is Rs. 12 per order .What is the most economical order quantity ? And how many orders need to be placed ?

Answer .:- Absolutely, we can calculate the most economical order quantity (EOQ) and the number of orders required for this scenario.

Given information:

- Demand (D) = 24,000 units per year (placed semi-annually, so annual demand is considered)
- Ordering cost (S) = Rs. 12 per order
- Carrying cost (H) = 15% (needs to be converted to a decimal for calculation)
- Unit price (P) = Rs. 20 per unit

Calculation of EOQ:

We can use the EOQ formula:

EOQ = √(2 * D * S / (H * P))

Step 1: Convert carrying cost to decimal:

H = 15% = 15/100 = 0.15

Step 2: Calculate EOQ:

EOQ = √(2 * 24,000 * 12 / (0.15 * 20)) = √(576,000 / 3) = √(192,000)

Since EOQ represents a whole number of units to be ordered, we cannot take the square root of 192,000 directly. In these cases, it's best to find the two closest perfect squares between which the EOQ value lies.

The perfect squares closest to 192,000 are:

- 144,400 (12^2)
- 225,000 (15^2)

As 192,000 is closer to 225,000, the EOQ will be slightly less than 15.

In practice, ordering a fractional quantity is not possible. Therefore, the most economical order quantity in this case is 14,400 units.

Number of orders:

Since the demand is 24,000 units per year and the EOQ is 14,400 units, the number of orders required can be calculated:

Number of orders = Demand / EOQ = 24,000 units / 14,400 units = 1.67

As we cannot place a partial order, we round the number of orders up to the nearest whole number.

Therefore, the company needs to place **2 orders per year**.

The EOQ model assumes constant demand, ordering cost, and carrying cost throughout the year. In a real-world scenario, these factors might fluctuate. This calculation provides an optimal EOQ under the given assumptions.

Q.6.b) Differential between hard and soft capital rationing .

Answer .:-

Hard Capital Rationing:

- **Origin:** Imposed by **external factors** like banks or lenders.
- **Restrictions:** Limited access to additional capital through debt or equity financing. This could be due to high-interest rates, poor creditworthiness, or restrictive loan covenants.
- **Examples:** A bank may deny a loan application due to insufficient collateral or a low credit score. Investors may be hesitant to invest in a company with a risky financial outlook.

Soft Capital Rationing:

- **Origin:** Imposed by the company's **internal policies and management decisions**.

- **Restrictions:** Company sets stricter requirements for approving capital expenditures. This could involve demanding higher return on investment (ROI) thresholds, prioritizing specific project types, or maintaining a target debt-to-equity ratio.
- **Examples:** A company may require all new projects to have a minimum ROI of 20% to ensure efficient use of capital. Management might decide to focus on internal growth and limit acquisitions, even if funding is available.

Here's a table summarizing the key differences:

Factor	Hard Capital Rationing	Soft Capital Rationing
Source of Restriction	External (Banks, Lenders)	Internal (Company Policy)
Reason for Restriction	Limited access to capital	Selective investment decisions
Examples	Loan denial, High interest rates	Higher ROI thresholds, Focus on specific projects

Consequences:

- **Hard Capital Rationing:** Can severely limit a company's growth potential and force them to scale back operations or miss out on profitable opportunities.
- **Soft Capital Rationing:** Can be a prudent strategy to manage risk, ensure efficient capital allocation, or focus on core competencies. However, overly restrictive policies can also hinder growth.