WORKING CAPITAL MANAGEMENT

CONCEPTS OF WORKING CAPITAL

- **Gross working capital** is the total investment made in current assets. Current assets are the assets that can be converted into cash within an accounting year e.g cash, debtors, marketable securities, inventories etc.
- Net working capital is the difference between current assets and current liabilities. Current liabilities are the obligations that are to be paid back within an year and include creditors (accounts payable), bills payable, and outstanding expenses.
- NWC can be positive or negative.
 - Positive NWC = CA > CL
 - Negative NWC = CA < CL

Concepts...

- GWC focuses on
 - Optimization of investment in current CIME, BBS
 - Financing of current assets
- NWC focuses on
 - Liquidity position of the firm
 - Judicious mix of short-term and long-tern financing

OBJECTIVE OF WORKING CAPITAL MANAGEMENT

- 1. **Determining the optimal level of working capital for the** firm: Involves a trade-off between Profitability and Liquidity CIME, BBS
- **Conservative Policy:**

- Higher investment in current assets Leads to lower profitability and higher liquidity

- **Aggressive Policy:**
 - Lower investment in current assets
 - Leads to higher profitability and lower liquidity

OBJECTIVE ...

2. Determining the appropriate sources for financing the working capital:

- Conservative Financing Policy:
 - More of long-term sources and lesser bank borrowings.
 - Higher cost of funds
 - Low probability of technical insolvency
- Aggressive Financing Policy:
 - More of bank borrowings and lesser usage of long-term funds.
 - Lower cost of funds
 - Higher probability of technical insolvency

STATIC VIEW OF WORKING CAPITAL

- Defines Gross working capital as total amount of current assets.
- Net working capital = Current assets Current liabilities
- It fails to reflect the dynamic nature of working capital
- It miscalculates the net working capital as it does not include:
 Short-term Bank Borrowings
 Short-term Public Deposits
 Short-term Marketable Securities

DYNAMIC VIEW OF WORKING CAPITAL

- It defines working capital as the amount of capital required for the smooth and uninterrupted functioning of the normal business operations of the firm.
- It comprises decision regarding the following aspects:
 - Level of raw material inventory
 - Level of work-in-process inventory
 - Level of finished goods inventory
 - Determination of credit policies and credit period
 - Determination of appropriate level of cash to be maintained

OPERATING CYCLE

- Operating cycle is the time duration required to convert sales, after the conversion of resources into inventories, into cash. The operating cycle of a manufacturing company involves three phases:
 - Acquisition of resources such as raw material, labour, power and fuel etc.
- Manufacture of the product which includes conversion of raw material into work-in-progress into finished goods.
 - Sale of the product either for cash or on credit. Credit sales create account receivable for collection.

Cont...

- The length of the operating cycle of a manufacturing firm is the sum of:
 - Inventory conversion period (ICP).
 - Debtors (receivable) conversion period (DCP).



Operating cycle of a manufacturing firm

GROSS OPERATING CYCLE (GOC)

• The firm's gross operating cycle (GOC) be determined as inventory can conversion period (ICP) plus debtors conversion period (DCP). Thus, GOC is given as follows: Gross operating Inventory Debtors = conversion period ⁺ conversion period cycle GOC = ICP + DCP

INVENTORY CONVERSION PERIOD

- Inventory conversion period is the total time needed for producing and selling the product. Typically, it includes:
 - raw material conversion period (RMCP)
 work-in-process conversion period (WIPCP)
 finished goods conversion period (FGCP)

ICP = RMCP + WIPCP + FGCP

DEBTORS (RECEIVABLES) CONVERSION PERIOD (DCP)

• Debtors conversion period (DCP) is the average time taken to convert debtors into cash. DCP represents the average collection period. It is calculated as follows: Debtors Debtors Debtors X 360 conversion. period (DCP) Credit sales/360 Credit sales

CREDITORS (PAYABLES) DEFERRAL PERIOD (CDP)

 Creditors(payables) deferral period (CDP) is the average time taken by the firm in paying its suppliers (creditors).
 CDP is given as follows:

Creditors deferral = Creditors period (CDP) Credit purchases/360

Creditors × 360

Credit purchases

CASH CONVERSION OR NET OPERATING CYCLE

 Net operating cycle (NOC) is the difference between gross operating cycle and payables deferral period.

Net operating Gross Creditors operating – deferral cycle cycle period NOC = GOC – CDP

Net operating cycle is also referred to as cash conversion cycle.

RAW MATERIAL STORAGE PERIOD

Raw Material Storage Period =

Average stock of raw materials

Average daily raw material comsumption

where,

• Average stock of raw materials =

ve, BBS Opening Stock of raw materials + Closing stock of raw materials

2

and Average daily consumption of raw materials = Annual consumption of raw materials

360

CONVERSION PERIOD

Conversion Period =

Average Stock of work - in - process Average daily cost of production

where,

- Average stock of work-in-process = Ining Stock of work-Opening Stock of work - in - process + Closing stock of work - in - process 2
- Annual cost of production and Average Daily cost of production = 360

FINISHED GOODS STORAGE PERIOD

Finished Goods Storage Period = ullet

Average stock of finished goods

Average daily cost of sales

where,

Average stock of finished goods =

E. BBE Opening stock of finished goods + Closing stock of finished goods

and Average daily cost of sales =

P.D.L

Annual cost of sales

360

AVERAGE COLLECTION PERIOD

Average Collection Period =

Average balance of sundry debtors

Average daily credit sales

where,

Average balance of sundry debtors = <u>ning balance of account</u> Opening balance of accounts receivable + Closing balance of accounts receivable

2

and Average daily credit sales of the company = Annual creditsales

360

AVERAGE PAYMENT PERIOD

Average Payment Period =

Average balance of sundry creditors

Average daily credit purchases

where,

Average balance of sundry creditors = Opening balance of accounts payable + Closing balance of accounts payable 2

and Average daily credit purchases made by the company = Annual credit purchases 360

Example: Chenoy Ltd. manufactures 850 carpets per year. It sells each drum for Rs 1150. Only 15% of its sales are made in cash. The firm incurs a fixed cost of Rs. 1,35,000 per annum and a variable cost of Rs. 500 per carpet. It spends Rs. 30,000 on advertising. This year the firm invested 25% of its total turnover in the purchase of raw materials.

Other information about the firm is given below:

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		Opening Galance	Closing
		Bulance	ouranee
	Raw material:	50	55
	Work-in process	45	65
	Finished goods	95	105
	Debtors	105	120
	Creditors	120	80

Depreciation Rs. 45,000
Excise Duty Rs. 35,000
Selling and Administrative Expenses Rs. 55,000
Using the above details compute the operating cycle for Excel Ltd.

Solution:

Total sales= $850 \times 1150 = \text{Rs.} 9,77,500$.

Credit sales= $9,77,500 - 0.15 \times 9,77,500 = \text{Rs. } 8,30,875$.

Purchase of raw materials: 0.25 x 9,77,500 = Rs. 2,44,375.

Manufacturing expenses = Fixed cost + Variable cost

= Rs. 1,35,000 + 500 x 850 = Rs. 5,60,000.

(a) Raw material storage period:

- Average stock of raw material = $\frac{50000+55000}{2} = 52,500.$
- Annual consumption of raw material = 50,000 + 2,44,375 55,000 = Rs. 2,39,375.
- Average daily consumption = $\frac{2,39,375}{360}$ = Rs. 665
- Raw material storage period = $\frac{52,500}{665}$ = **78.9 days**

(b) Conversion period:

- Average stock of work-in-process = $\frac{40000+65000}{2} = 52,500.$
- Annual cost of production= 40,000 + 2,39,375 + 5,60,000 + 45,000 65,000 = Rs. 8,19,375.
- Average daily cost of production = $\frac{8,19,375}{360}$ =Rs. 2276
- Conversion period = $\frac{52,500}{2,276}$ = **23.1days**

(c) Finished goods storage period:

- Average stock of finished goods = $\frac{95000+1,05,000}{2}$ = 1,00,000.
- Annual cost of sales = 95,000 + 8,19,375 + 35,000 + 55,000 -1,05,000 = Rs.8,99,375.
- Average daily cost of sales $=\frac{8,99,375}{360}$ =Rs. 2,498 Finished Goods Storage Period = $\frac{1,00,000}{2,498}$
- = 40 days.

(d) Average collection period:

- Average debtors = $\frac{1,05,000+1,20,000}{2}$ = Rs. 1,12,500.
- Annual credit sales = Rs. 8,30,875.
- Average daily credit sales = $\frac{8,30,875}{360}$ = Rs 2,308. • Average collection period = $\frac{1,12,500}{2,308}$ = **48.7 days.**

(e) Average payment period

Average balance of trade creditors = = Rs. 1,00,000.

1,20,000+80,000 2

- Annual purchases = Rs. 2,44,375.
- Rs. An Average daily purchases = 360 Average payment period = $\frac{1,00,000}{679}$ 147.3 days.
- Gross Operating Cycle= 78.9 + 23.1 + 40 + 48.7 = 190.7 days
- Net Operating Cycle = 78.9 + 23.1 + 40 + 48.7 147.3= **43.4** days.

CRITERIA FOR EVALUATING WORKING CAPITAL MANAGEMENT

- Liquidity
- Availability of cash
- Inventory Turnover
- Credit extended to customers
- CIME, BBS Credit obtained from suppliers
- Extent of under-trading/ over-trading
- **Ratio** Analysis

PERMANENT AND VARIABLE WORKING CAPITAL

• Permanent or fixed working capital

A minimum level of current assets, which is continuously required by a firm to carry on its business operations, is referred to as permanent or fixed working capital.

• Fluctuating or variable working capital The extra working capital needed to support the changing production and sales activities of the firm is referred to as fluctuating or variable working capital.



Permanent and temporary working capital

PERMANENT & TEMPORARY WORKING CAPITAL IN CASE OF GROWING FIRM



DETERMINANTS OF WORKING CAPITAL

- 1. Nature of business
- 2. Market and demand
- 3. Technology and manufacturing policy
- 4. Credit policy
- 5. Supplies' credit
 - 6. Operating efficiency
 - 7. Inflation

ISSUES IN WORKING CAPITAL MANAGEMENT

- Current Assets to Fixed Assets Ratio
- Liquidity vs. Profitability: Risk–Return Trade-off
- The Cost Trade-off anne Total cost Minimum cost Conservative policy Level of current assets Average policy Cost of Cost liquidity Cost of Aggressive policy illiquidity Fixed asset level Optimum level Level of current Output of current assets assets

Alternative current asset policies

Cost Trade-off

ESTIMATING WORKING CAPITAL

Current assets holding period

· To estimate working capital requirements on the basis of average holding period of current assets and relating them to costs based on the company's experience in the previous years. This method is essentially based on the operating cycle concept. CIME,

Ratio of sales

· To estimate working capital requirements as a ratio of sales on the assumption that current assets change with sales.

Ratio of fixed investment

• To estimate working capital requirements as a percentage of fixed investment.

WORKING CAPITAL FINANCE POLICIES

- Long-term
- Short-term
- Dr. P. D. Matching Conc

 - Aggressive

MATCHING APPROACH



Financing under matching plan

CONSERVATIVE APPROACH



Conservative financing

AGGRESSIVE APPROACH



Aggressive financing

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