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VIRTUAL COACHING CLASSES
ORGANIZED BY BOS, ICAI

INTERMEDIATE LEVEL
PAPER 8A : FINANCIAL MANAGEMENT

WORKING CAPITAL

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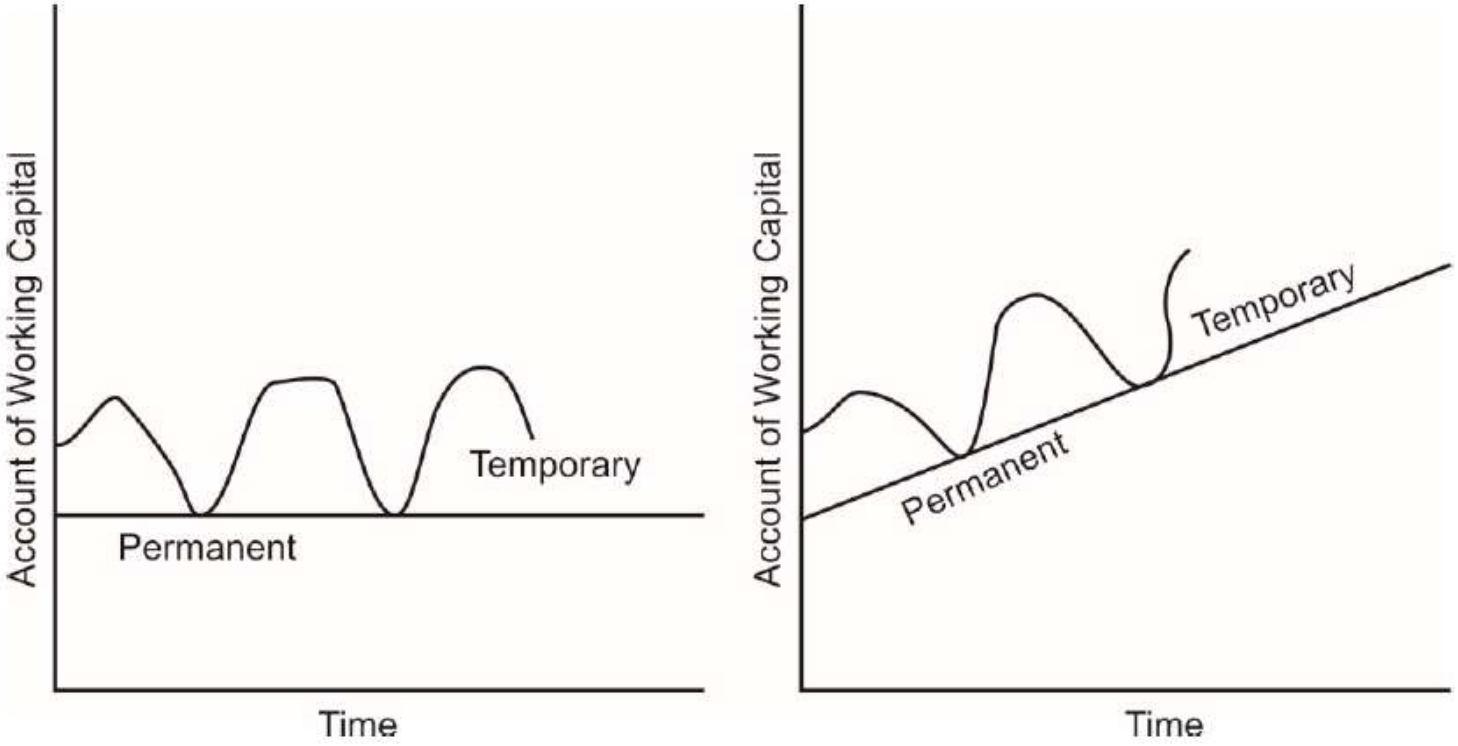
Working Capital

- Working Capital (WC) = Current Assets (CA) – Current Liabilities (CL)

Current Assets	Current Liabilities
• Expected to be realized/consumed/sold within normal operating cycle or one year • Inventory, Receivables, Cash & Cash Equivalents, Prepaid expenses	• Expected to be settled in normal operating cycle or one year • Settled either by use of current assets or by creation of new current liability • Trade Payables, Outstanding Expenses

- On the basis of value WC can be defined as gross (CA) or net (CA-CL). On the basis of time it can be defined as permanent or temporary (due to fluctuation in sales volume)
- WC should be maintained at an optimum level (GR: current ratio of 2 and quick ratio of 1 preferred but depends on several factors). Over investment will carry opportunity cost or loss of inventory and Under investment may lead to solvency issues and also loss of sales

Types of Working Capital



Significance of Working Capital

Maintaining adequate working capital is not just important in the short-term, sufficient liquidity must be maintained in order to ensure the survival of the business in the long-term as well. When businesses make investment decisions, they must not only consider the financial outlay involved with acquiring the new machine or the new building, etc., but must also take account of the additional current assets that are usually required with any expansion of activity. For e.g.:

- Increased production leads to holding of additional stocks of raw materials and work-in-progress.
- An increased sale usually means that the level of debtors and the finished goods inventory requirements will increase.
- A general increase in the firm's scale of operations tends to imply a need for greater levels of working capital.

Determinants of Working Capital

- Working Capital Management involves maintaining adequate / optimum WC and its Financing

Factors to be considered for planning WC Requirements:

1) Nature of Business (example: restaurant vs pharmacy)
2) Type of Products – durable or perishable
3) Operating Efficiency
4) Inventory techniques, Receivables Policy & Cash holding requirements
5) Price level changes
6) Short term financing options
7) Market & Demand conditions – demand > production then less inventory
8) Manufacturing Policies – steady production or seasonal
9) Credit Policy

Scope of WC Management

- Working Capital Management involves 3 Es : Economy in financing, Efficiency in utilisation & Effectiveness in achieving the intended objectives.
- Scope of WC Management considers : a) Liquidity & Profitability and b) Investment & Financing

a) Trade off between Components of WC – Increasing Profitability without affecting Liquidity

Component	Advantages of Higher Level (Profitability)	Trade off (between profitability & liquidity)	Advantages of Lower Level (Liquidity)
Inventory	Fewer stock-outs	Optimum Level – EOQ, JIT	Requires less capital but probable stock-out & loss of reputation.
Receivables	Higher Credit period – More customers > Sales	Evaluate Credit Policy – use debt management services - factoring	Lesser credit period – more cash sales – fails to boost revenue
Cash & Cash Equivalents	Payables are honored in time > improves goodwill	Cash budgets & other techniques	Investment in other avenues
Prepayments	Profitable in Inflation	Cost-benefit analysis to be done	Improves / Maintains liquidity
Payables	Funds can be invested	Evaluate credit policy pros & cost	Payables are honored in time > improves goodwill

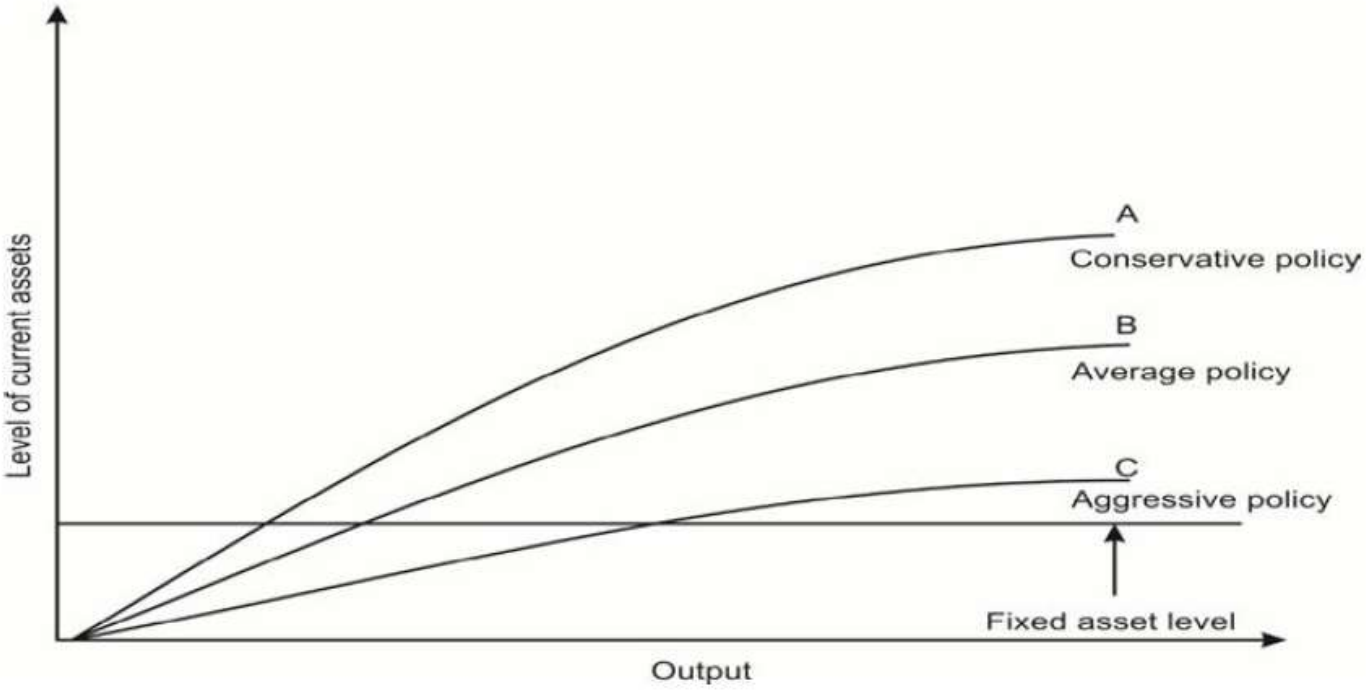
Scope of WC Management

b) Investing & Financing – Investment in WC relates to "How Much" and Financing relates to "Where from"

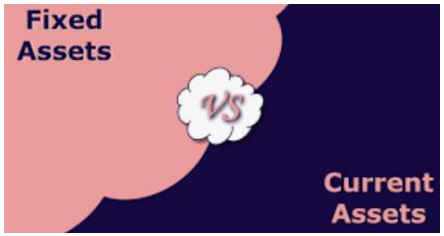
"How Much" i.e. optimum WC depends on factors already discussed and organizational policy

Aggressive	Moderate	Conservative
Lower levels: less inventory, strict credit policy, less cash Lower CA/FA ratio	Balances risk & Return, Efficient use of funds	Higher Levels: more inventory & cash, liberal credit policies Higher CA/FA ratio
+ive – Less investment - ive – Less Growth	Mid way approach	+ ive – growth in sales value & goodwill - Ive – higher risk of bad debts, opportunity loss

Scope of WC Management



Current Assets to Fixed Assets

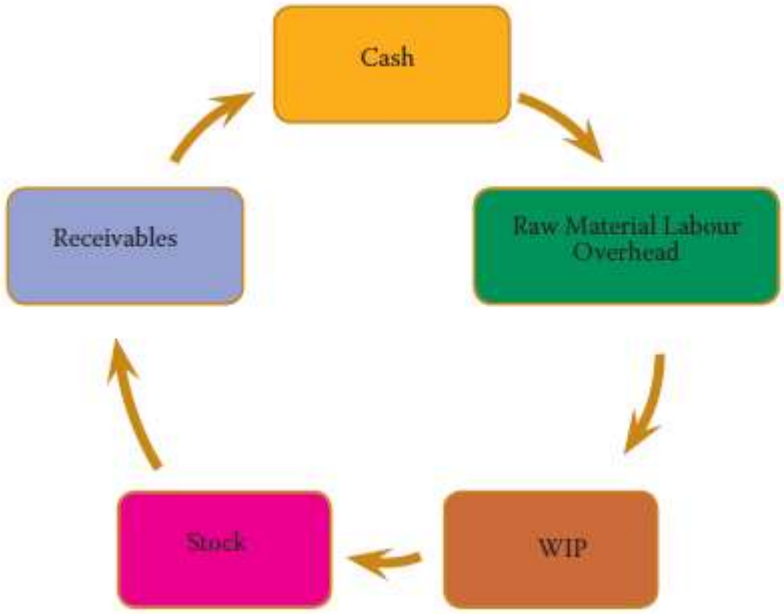


- **Optimum level of current assets to maximize shareholders' wealth**
- **Requirement of CA increases with expansion but at decreasing rate due to efficiency**
- **Higher Ratio refers to Conservative policy and lower indicates Aggressive policy, also has inverse relationship with return on assets.**

Earnings before Interest and Taxes (EBIT)	2,00,000	2,00,000	2,00,000
Current Assets	5,00,000	4,00,000	3,00,000
Fixed Assets	5,00,000	5,00,000	5,00,000
Total Assets	10,00,000	9,00,000	8,00,000
Return on Total Assets (EBIT÷ Total Assets)	20%	22.22%	25%
Current Assets/Fixed Assets	1.00	0.80	0.60

Operating or Working Capital Cycle

Working Capital cycle indicates the length of time between a company's paying for materials, entering into stock and receiving the cash from sales of finished goods.



Longer the Operating cycle, more working capital is required & vice versa

Operating Cycle = R + W + F + D – C

Where,

R = Raw material storage period
W = Work-in-progress holding period
F = Finished goods storage period
D = Receivables (Debtors) collection period.
C = Credit period allowed by suppliers (Creditors).

M/s Dhoni & Co holds raw materials on an average for 45 days, it gets credit from the supplier for 30 days, production process needs 25 days, finished goods are held for 15 days and 45 days credit is extended to debtors. Thus, OC = 100
R (45) + W (25) + F (15) + D(45) – C (30) = 100 Days

Operating or Working Capital Cycle

TIME IS MONEY

If you.....	Then .....
Collect receivables (debtors) faster	You release cash from the cycle
Collect receivables (debtors) slower	Your receivables soak up cash.
Get better credit (in terms of duration or amount) from suppliers.	You increase your cash resources.
Shift inventory (stocks) faster	You free up cash.
Move inventory (stocks) slower.	You consume more cash.

Operating or Working Capital Cycle

The various components of Operating Cycle may be calculated as shown below:

(1)	Raw Material Storage Period	$= \frac{\text{Average stock of raw material}}{\text{Average Cost of Raw Material Consumption per day}}$
(2)	Work-in-Progress holding period	$= \frac{\text{Average Work-in-progress inventory}}{\text{Average Cost of Production per day}}$
(3)	Finished Goods storage period	$= \frac{\text{Average stock of finished goods}}{\text{Average Cost of Goods Sold per day}}$
(4)	Receivables (Debtors) collection period	$= \frac{\text{Average Receivables}}{\text{Average Credit Sales per day}}$
(5)	Credit period allowed by suppliers (Creditors)	$= \frac{\text{Average Payables}}{\text{Average Credit Purchases per day}}$

Illustration

Calculate Net Operating Cycle period and Number of Operating Cycles in a year from below information (Assume 360 days in a year):

S.No.	Details	Amount (in ₹)
1	Raw material inventory consumed during the year	12,00,000
2	Average stock of raw material	1,00,000
3	Cost of production for the year	10,00,000
4	Average work-in-progress inventory	50,000
5	Cost of goods sold during the year	16,00,000
6	Average Finished Goods Inventory	80,000
7	Average collection period from debtors	45 Days
8	Average credit period availed	30 Days

Components for WC (CA – CL)

(i) Raw Materials Inventory:

$$\frac{\text{Estimated Production (units)}}{\text{12 months / 365 days *}} \times \text{Estimated Cost per unit} \times \text{Average raw material storage period}$$

(ii) Work-in-Progress Inventory:

$$\frac{\text{Estimated Production (units)}}{\text{12 months / 365 days *}} \times \text{Estimated WIP cost per unit} \times \text{Average W-I-P holding period}$$

(iii) Finished Goods:

$$\frac{\text{Estimated Production (units)}}{\text{12 months / 365 days *}} \times \text{Estimated Cost of production per unit} \times \text{Average storage period}$$

(iv) Receivables (Debtors): ★

$$\frac{\text{Estimated Credit Sales unit}}{\text{12 months / 365 days *}} \times \text{Cost of sales (excluding depreciation) per unit} \times \text{Average collection period}$$

(v) Cash and Cash equivalents: Minimum desired Cash and Bank balance to be maintained

(vi) Trade Payables (Creditors):

$$\frac{\text{Estimated credit purchase}}{\text{12 months / 365 days *}} \times \text{Credit period allowed by suppliers}$$

(vii) Direct Wages:

$$\frac{\text{Estimated labour hours x wages rate per hour}}{\text{12 months / 365 days *}} \times \text{Average time lag in payment of wages}$$

(viii) Overheads (other than depreciation and amortization):

$$\frac{\text{Estimated Overheads}}{\text{12 months / 360 days *}} \times \text{Average time lag in payment of overheads}$$

**Number of days in a year may be taken as 365 or 360 days.*

In practice for Current Assets (Debtors, Finished Goods) – cash cost is considered i.e. exact funds required < CA
(eg: Cost of Sales is used for debtors & that too excluding depreciation or any other non cash costs) ★

Estimation of WC Requirements

		Amount	Amount	Amount
I.	**Current Assets:**			
	Inventories:			
	- Raw Materials	---		
	- Work-in-process	---		
	- Finished goods	---	---	
	Receivables:			
	- Trade debtors	---		
	- Bills	---	---	
	Minimum Cash Balance		---	
	Gross Working Capital		---	---

		Amount	Amount	Amount
II.	Current Liabilities:			
	Trade Payables		---	
	Bills Payables		---	
	Wages Payables		---	
	Payables for overheads		---	---
III.	**Excess of Current Assets over Current Liabilities [I – II]**			---
IV.	Add: Safety Margin			---
V.	**Net Working Capital [III + IV]**			---

Effect of Double Shift- greater use of fixed assets shall yield greater efficiency, although additional working capital may be required but it may not be double in proportion. Also, there should be no impact on WIP as 1st shift WIP shall be completed in 2nd and the closing WIP shall be from 2nd shift now.

Question

On 1st January, the Managing Director of Bhawani Ltd. Is curious to know the amount of working capital that will be required during the year. Compute the working capital requirements forecast based on below information:

Production during the previous year was 1,20,000 units. It is planned that this level of activity would be maintained during the present year. Raw materials are expected to remain in store for an average of 2 months before issue to production.

The expected ratios of the cost to selling prices are Raw materials 60%, Direct wages 10% and Overheads 20%.

Each unit is expected to be in process for one month, the raw materials being fed into the pipeline immediately and the labour and overhead costs accruing evenly during the month. Finished goods will stay in the warehouse awaiting dispatch to customers for almost 3 months.

Credit allowed by creditors is 2 months from the date of delivery of raw material. Credit allowed to debtors is 3 months from the date of dispatch. There is a regular production and sales cycle.

Selling price is ₹ 5 per unit. Wages and overheads are paid on the 1st of each month for the previous month. The company normally keeps cash in hand to the extent of ₹ 40,000.

Question

Particulars	Amount (in ₹)
Sales (at two months' credit)	18,00,000
Materials consumed (suppliers extend two months' credit)	4,50,000
Wages paid (paid one month in arrear)	3,60,000
Cash manufacturing expenses (Also paid one month in arrear)	4,80,000
Administrative expenses (paid one month in arrear)	1,20,000
Sales promotion expenses (paid quarterly in advance)	60,000

The company sells its products on gross profit of 25%. Depreciation is considered as a part of the cost of production. It keeps one month's stock each of raw materials and finished goods, and a cash balance of ₹ 50,000.

Assuming a 20% safety margin, calculate the working capital requirements of the company on cash cost basis. Ignore work-in-process 😃

Question

Samreen Enterprises has been operating its manufacturing facilities till 31.3.2017 on a single shift working with the following cost structure:

	Per unit (₹)
Cost of Materials	6.00
Wages (out of which 40% fixed)	5.00
Overheads (out of which 80% fixed)	5.00
Profit	2.00
Selling Price	18.00
Sales during 2016-17 – ₹ 4,32,000.	

As at 31.3.2017 the company held:

	(₹)
Stock of raw materials (at cost)	36,000
Work-in-progress (valued at prime cost)	22,000
Finished goods (valued at total cost)	72,000
Sundry debtors	1,08,000

In view of increased market demand, it is proposed to double production by working an extra shift. It is expected that a 10% discount will be available from suppliers of raw materials in view of increased volume of business. Selling price will remain the same. The credit period allowed to customers will remain unaltered. Credit availed of from suppliers will continue to remain at the present level i.e., 2 months. Lag in payment of wages and expenses will continue to remain half a month.

You are required to PREPARE the additional working capital requirements, if the policy to increase output is implemented.

Treasury Management

GOALS

- Maximize return on available cash
- Minimize interest cost on borrowings
- Efficient mobilization of cash in ventures
- Hedging – Effective dealing in forex & commodity

Treasury Department Functions

- **Cash Management –** Managing cash collection & payment & investment of surplus funds
- **Banking –** Maintaining good relations with bankers, negotiating interest rates
- **Fund Management –** Planning & sourcing short/medium/long term needs & capital structure decisions
- **Currency Management –** Matching receipts & payments of same currency, hedging the exchange fluctuations by forward contracts
- **Corporate Finance –** Acquisition & divestiture activities, investor relations

Cash Management

Needs for Cash

- **Transaction Need** – day to day expenses & debt payments
- **Speculative Need** – taking advantage of temporary profitable opportunities
- **Precautionary Need** – providing safety against unexpected events

Cash Planning & Budgeting

- Forecasting of cash inflows and outflows to coordinate the timing of cash needs avoiding excess / shortage

Methods of Cash Budgeting

Receipts & Payments Method	Adjusted Income Method	Adjusted Balance Sheet
Periodic information flow through functional & Capital budgets	Adjusting for delays in payment & collection and non cash items (Indirect Method of CFS)	Each asset & short term liability is expressed as % of sales with known LT liability to know shortage / surplus

Cash Budget

- **Most significant device to plan & control cash receipts & payments**
- **Surplus could be invested in marketable securities & shortages can be managed by taking overdraft**

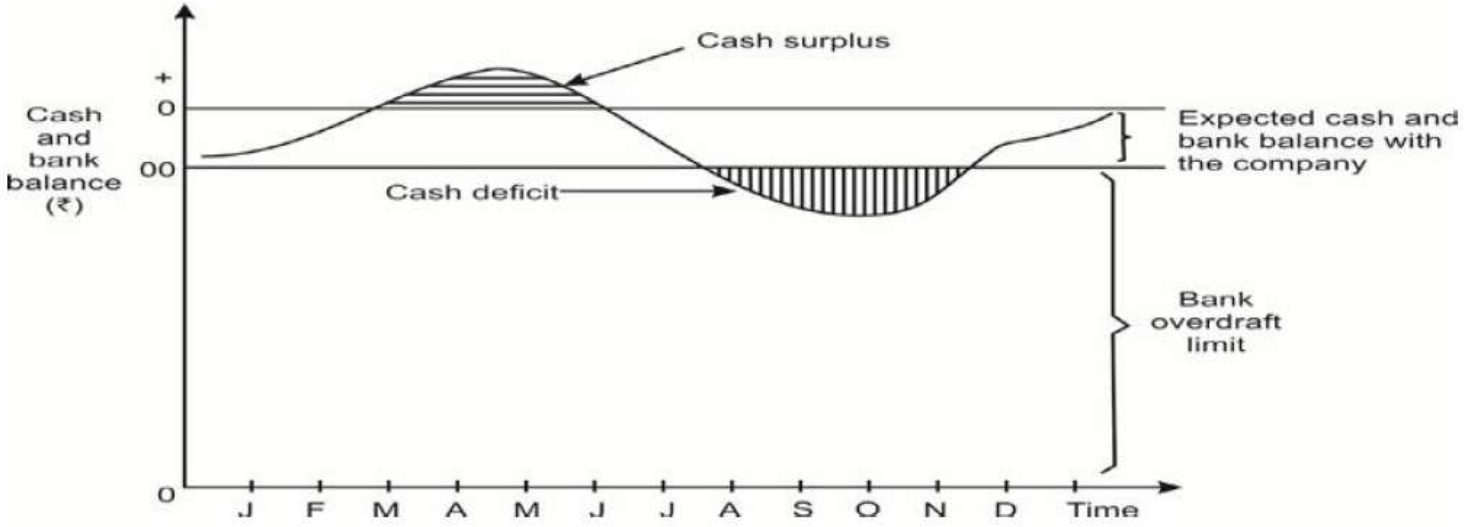
The various purposes of cash budgets are:-

- Coordinate the timings of cash needs. It identifies the period(s) when there might either be a shortage of cash or an abnormally large cash requirement;
- It also helps to pinpoint period(s) when there is likely to be excess cash;
- It enables firm which has sufficient cash to take advantage like cash discounts on its accounts payable; and
- Lastly it helps to plan/arrange adequately needed funds (avoiding excess/shortage of cash) on favorable terms.

Cash Budget

Steps involved are:-

- Selection of period covered / planning horizon
- Selecting factors affecting cash flows categorically Operating & Financial cash flows



Cash Budget for Short Period

Preparation of cash budget month by month would require the following estimates:

(a) *As regards receipts:*

1. Receipts from debtors;
2. Cash Sales; and
3. Any other source of receipts of cash (say, dividend from a subsidiary company)

(b) *As regards payments:*

1. Payments to be made for purchases;
2. Payments to be made for expenses;
3. Payments that are made periodically but not every month;
   - (i) Debenture interest;
   - (ii) Income tax paid in advance;
   - (iii) Sales tax or GST etc.
4. Special payments to be made in a particular month, for example, dividends to shareholders, redemption of debentures, repayments of loan, payment of assets acquired, etc.

Cash Budget Exercise

Prepare monthly cash budget for 6 months beginning from April 2019 on the basis of below details:

Months	Estimated Sales (₹)	Months	Estimated Sales (₹)	Months	Estimated Sales (₹)
Jan	1,00,000	Apr	80,000	July	1,00,000
Feb	1,20,000	May	60,000	Aug	80,000
Mar	1,40,000	June	80,000	Sep	60,000
				Oct	1,00,000

Months	Estimated Wages (₹)	Months	Estimated Wages (₹)	Months	Estimated Wages (₹)
Apr	9,000	June	10,000	Aug	9,000
May	8,000	July	10,000	Sep	9,000

- Of the sales, 80% is on credit and 20% for cash. 75% of the credit sales are collected within one month and the balance in second month after sale. There are no bad debt losses. Purchases amount to 80% of sales and are made on credit and paid for in the month preceding the sales
- The firm has 10% debentures of ₹ 1,20,000. Interest on these has to be paid quarterly in January, April and so on. The firm is to make an advance payment of tax of ₹ 5,000 in July, 2019.
- The firm had a cash balance of ₹ 20,000 on 1st April 2019, which is the minimum desired level of cash balance. Any cash surplus/deficit above/below this level is made up by temporary investments/liquidation of temporary investments or temporary borrowings at the end of each month (interest on these to be ignored).

Illustration

From the following information, you are required to prepare Month-wise cash budget on receipts and payments basis for the three months ending 31st March, 2019. It is anticipated that the working capital at 1st January, 2019 will be as follows:-

	₹ in '000's		₹ in '000's		₹ in '000's
Cash & Bank	545	Stock	1,300	Dividends Payable	485
Short term investments	300	Trade Creditors	2,110	Tax Due	320
Debtors	2,570	Other Creditors	200	Plant	800

Budgeted Profit Statement:			*₹ in '000's*
	January	*February*	*March*
Sales	*2,100*	*1,800*	*1,700*
Cost of sales	*1,635*	*1,405*	*1,330*
Gross Profit	*465*	*395*	*370*
Administrative, Selling and Distribution Expenses	*315*	*270*	*255*
Net Profit before tax	*150*	*125*	*115*

Depreciation of ₹ 60,000 is included in the budgeted expenditure for each month.

Budgeted balances at the end of each months:	₹ in '000's		
	31st Jan.	*28th Feb.*	*31st March*
Short term investments	*700*	*---*	*200*
Debtors	*2,600*	*2,500*	*2,350*
Stock	*1,200*	*1,100*	*1,000*
Trade creditors	*2,000*	*1,950*	*1,900*
Other creditors	*200*	*200*	*200*
Dividends payable	*485*	*--*	*--*
Tax due	*320*	*320*	*320*
Plant (depreciation ignored)	*800*	*1,600*	*1,550*

Cash Budget for Long Period

Take Cash & Bank at the beginning for the year and do below adjustments

Add

- Profit before tax and add back Depreciation
- Sales proceeds from assets
- Proceeds from fresh issue of shares or debentures
- Reduction in working capital

Less

- Dividends & taxes to be paid
- Cost of assets to be purchased (from capital budget)
- Shares or debentures to be redeemed
- Increase in Working Capital

Illustration

You are given below the Profit & Loss Accounts for two years for a company:

Profit and Loss Account

	Year 1	Year 2		Year 1	Year 2
	₹	₹		₹	₹
To Opening stock	80,00,000	1,00,00,000	By Sales	8,00,00,000	10,00,00,000
To Raw materials	3,00,00,000	4,00,00,000	By Closing stock	1,00,00,000	1,50,00,000
To Stores	1,00,00,000	1,20,00,000	By Misc. Income	10,00,000	10,00,000
To Manufacturing Expenses	1,00,00,000	1,60,00,000			
To Other Expenses	1,00,00,000	1,00,00,000			
To Depreciation	1,00,00,000	1,00,00,000			
To Net Profit	1,30,00,000	1,80,00,000		-	-
	9,10,00,000	11,60,00,000		9,10,00,000	11,60,00,000

Sales are expected to be ₹ 12,00,00,000 in year 3.

As a result, other expenses will increase by ₹ 50,00,000 besides other charges. Only raw materials are in stock. Assume sales and purchases are in cash terms and the closing stock is expected to go up by the same amount as between year 1 and 2. You may assume that no dividend is being paid. The Company can use 75% of the cash generated to service a loan. COMPUTE how much cash from operations will be available in year 3 for the purpose? Ignore income tax.

Managing Cash Collection & Disbursements

Twin Objectives : Accelerate Collections & Defer disbursements

The prime reason for large gap between sales & realization of funds relate to 4 types of float

Billing Float	Mail Float	Cheque Processing	Bank Processing
• Time between sale of goods and mailing of invoice	• Time taken by delivery agency carrying the cheque	• Time taken to record & deposit cheque after receiving	• Time involved in clearing of funds

Collection Management: Speed up cash collections by issuing invoices quickly or by reducing the time lag between a customer pays bill and the cheque is collected and funds become available for use

- **Concentration Banking:** One major/concentration bank at HQs with multiple collection centres in different locations which can collect the cheques & deposit – reducing Mail Float
- **Lock Box System:** Renting local post-office box and authorizing bank at each location to pick up remittances in the boxes. Customers are billed with instructions to mail their remittances to the lock boxes. The bank picks up the mail several times a day and deposits the cheques in the company's account – eliminating cheque processing float.

Deferring Payments: Making full utilization of credit period allowed & taking advantage of float in this case

* Home Work – Read Illustr 9 (Praachi Ltd) on Pg 10.51 which shows the clearing with floats and also uncleared float

Cash Management Developments

- **Electronic Fund Transfer**: quick transfer of funds, instant balance updates etc
- **Zero balance account:** using marketable securities to invest any balance (sell if needed)
- **Money Market Operations:** Surplus funds invested as deposits for days / weeks as required by bargaining rates
- Investing temporary cash surplus in market instruments : debt or equity
- **Electronic Cash Management System:** ease of net banking globally during designated hours
- **Virtual Banking:** ATMs, NEFT, Use of Magnetic Ink Character recognition (MICR) etc

Management of Marketable Securities

Temporarily excess funds can be parked in short term securities that can be liquidated on need basis. Examples- government treasury bills, deposits with banks & other corporates etc. Selection of securities is governed by 3 principals:

- Safety : ensuring minimum risk
- Maturity: matching maturity with forecasted needs
- Marketability: Convenience, speed and cost at which security can be sold

Illustration

The following information is available in respect of Shri Bhakti company:

- On an average, debtors are collected after 45 days; inventories have an average holding period of 75 days and creditor's payment period on an average is 30 days.
- The firm spends a total of ₹ 150 lakhs annually at a constant rate and it can earn 12% on investments.

From the above information, you are required to CALCULATE: a) The cash cycle and cash turnover b) Minimum amounts of cash to be maintained to meet payments as they become due and c) Savings by reducing the average inventory holding period by 30 days.

Cash cycle = 45 days + 75 days – 30 days = 90 days (3 months) Cash turnover = 12 months (360 days)/3 months (90 days) = 4.

Minimum operating cash = Total operating annual outlay/cash turnover, = 150/4 = ₹ 37.50 lakhs.

Cash cycle = 45 days + 45 days – 30 days = 60 days (2 months). Cash turnover = 12 months (360 days)/2 months (60 days) = 6.

Minimum operating cash = 150/6 = ₹ 25 lakhs. Reduction in investments = 37.50 - 25= ₹ 12.50 lakhs.

Thus, Savings = 12,50,000 x 12% = ₹ 1,50,000

Cash Management Models

- **William J. Baumol's EOQ Model (Inventory Type Model) –** Optimum cash level is that where carrying costs (opportunity cost) and transaction costs (brokerage) are minimum

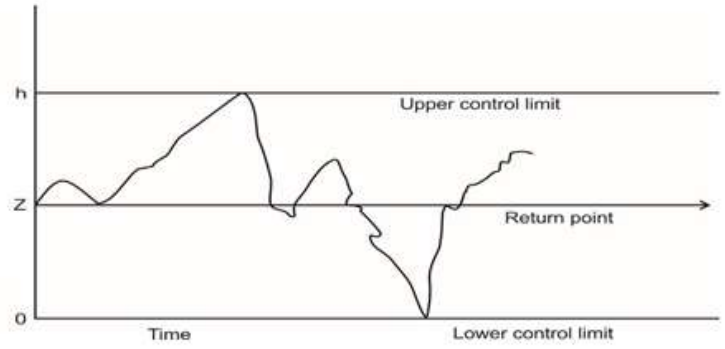
$$C=\sqrt{\frac{2U\times P}{S}}$$

where, C = optimum cash balance, U = Annual/monthly cash disbursement,

P = fixed cost per transaction and S = Opportunity cost of ₹ 1 p.a. or p.m.

(based on assumptions like holding & transaction costs are constant, cash needs are known & is used uniformly)

- **Miller-Orr Cash Management Model (Stochastic)-** Useful where changes in cash balance occur randomly. Three control limits are set : Upper (H) , Return Point (Z) and Lower limit as zero or a lower number than Z.
  - When balances reaches H, then an amount = H-Z is invested in marketable securities
  - When it touches lower limit then some investments are liquidated and when balance is between these 3 limits, no transaction



Management of Receivables

- **Receivables Management:** Planning & Controlling the debt owed to the firm
- **Large Receivables >**Lenient credit policy, risk of bad debts, cost of collection, opportunity cost etc
- **Low Receivables > ** Strict credit policy, low sales volume

3 Aspects of Receivables Management are:

1**) Credit Policy:** Trade-off between the profits on additional sales that arise due to credit being extended on the one hand and the cost of carrying those debtors and bad debt losses on the other.

It determines credit period, cash discount, if any > example: 2/10 Net 30

Factors affecting Credit Policy: effect on sales volume, firms policy, customers' reputation, cash discount vs Interest

2) Credit Analysis or Due Diligence: checking customer background (can enhance credit over time), risk analysis

3) Control of Receivables: following up with debtors, ageing analysis i.e. execution & monitoring of credit policy

Approaches to Credit Policy Evaluation

Total / Gross Approach

Particulars	*Present Policy*	*Proposed Policy I*	*Proposed Policy II*	*Proposed Policy III*
	₹	₹	₹	₹
A. Expected Profit:				
(a) Credit Sales	.....	.....	.....	.....
(b) Total Cost other than Bad Debts and Cash Discount				
(i) Variable Costs	.....	.....	.....	.....
(ii) Fixed Costs	.....	.....	.....	.....
	.....	.....	.....	.....
(c) Bad Debts	.....	.....	.....	.....
(d) Cash discount				

Particulars	*Present Policy*	*Proposed Policy I*	*Proposed Policy II*	*Proposed Policy III*
	₹	₹	₹	₹
(e) Expected Net Profit before Tax (a-b-c-d)	.....	.....	.....	.....
(f) *Less:* Tax	.....	.....	.....	.....
(g) Expected Profit after Tax	.....	.....	.....	.....
B. Opportunity Cost of Investments in Receivables locked up in Collection Period	.....	.....	.....	.....
Net Benefits (A – B)	.....	.....	.....	.....

- Fixed costs doesn't change amongst policies i.e. (Average unit cost – variable cost p.u.) x No. of units sold under current policy
- Opportunity cost = Total Cost of Sales x (collection period / 365) x Required Rate of Return

Approaches to Credit Policy Evaluation

Incremental Approach – Every number is presented on incremental basis

Particulars	Present Policy days	Proposed Policy I days	Proposed Policy II days	Proposed Policy III days
	₹	₹	₹	₹
A. Incremental Expected Profit:				
Credit Sales	.....	.....	.....	.....
(a) Incremental Credit Sales	.....	.....	.....	.....
(b) Less: Incremental Costs of Credit Sales				
(i) Variable Costs	.....	.....	.....	.....
(ii) Fixed Costs	.....	.....	.....	.....
(c) Incremental Bad Debt Losses	.....	.....	.....	.....
(d) Incremental Cash Discount	.....	.....	.....	.....
(e) Incremental Expected Profit (a-b-c-d)	.....	.....	.....	.....
(f) Less: Tax	.....	.....	.....	.....
(g) Incremental Expected Profit after Tax	.....	.....	.....	.....
	.....	.....	.....	.....

Particulars	Present Policy days	Proposed Policy I days	Proposed Policy II days	Proposed Policy III days
	₹	₹	₹	₹
B. Required Return on Incremental Investments:				
(a) Cost of Credit Sales	.....	.....	.....	.....
(b) Collection Period (in days)	.....	.....	.....	.....
(c) Investment in Receivable (a × b/365 or 360)	.....	.....	.....	.....
(d) Incremental Investment in Receivables	.....	.....	.....	.....
(e) Required Rate of Return (in %)	.....	.....	.....	.....
(f) Required Return on Incremental Investments (d × e)	.....	.....	.....	.....
Incremental Net Benefits (A – B)	.....	.....	.....	.....

- Fixed costs doesn't change amongst policies i.e. (Average unit cost – variable cost p.u.) x No. of units sold under current policy
- Opportunity cost = Total Cost of Sales x (collection period / 365) x Required Rate of Return

Illustration

A trader whose current sales are in the region of ₹ 6 lakhs per annum and an average collection period of 30 days wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information:-

Credit Policy	Increase in collection period	Increase in sales	Present default anticipated
A	10 days	₹ 30,000	1.5%
B	20 days	₹ 48,000	2%
C	30 days	₹ 75,000	3%
D	45 days	₹ 90,000	4%

The selling price per unit is ₹ 3. Average cost per unit is ₹ 2.25 and variable costs per unit are ₹ 2. The current bad debt loss is 1%. Required return on additional investment is 20%. Assume a 360 days year.

ANALYSE which of the above policies would you recommend for adoption?

Solution

Total / Gross Approach

Particulars		Present Policy 30 days	Proposed Policy A 40 days	Proposed Policy B 50 days	Proposed Policy C 60 days	Proposed Policy D 75 days
		₹	₹	₹	₹	₹
A.	Expected Profit:					
	(a) Credit Sales	6,00,000	6,30,000	6,48,000	6,75,000	6,90,000
	(b) Total Cost other than Bad Debts					
	(i) Variable Costs [Sales × 2/ 3]	4,00,000	4,20,000	4,32,000	4,50,000	4,60,000
	(ii) Fixed Costs	50,000	50,000	50,000	50,000	50,000
		4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
	(c) Bad Debts	6,000	9,450	12,960	20,250	27,600
	(d) Expected Profit [(a) – (b) – (c)]	1,44,000	1,50,550	1,53,040	1,54,750	1,52,400
B.	Opportunity Cost of Investments in Receivables Total Cost of Sales x (collection period / 365) x Required Return	7,500 (4,50,000 x 20% x 30/360)	10,444 (4,70,000 x 20% x 40/360)	13,389 (4,82,000 x 20% x 50/360)	16,667 (5,00,000 x 20% x 60/360)	21,250 (5,10,000 x 20% x 75/360)
C.	**Net Benefits (A – B)**	**1,36,500**	**1,40,106**	**1,39,651**	**1,38,083**	**1,31,150**

Solution

Incremental Approach

Particulars		Present Policy 30 days	Proposed Policy A 40 days	Proposed Policy B 50 days	Proposed Policy C 60 days	Proposed Policy D 75 days
		₹	₹	₹	₹	₹
A.	**Incremental Expected Profit:**					
	(a) Incremental Credit Sales	0	30,000	48,000	75,000	90,000
	(b) Incremental Costs					
	(i) Variable Costs	4,00,000	20,000	32,000	50,000	60,000
	(ii) Fixed Costs	50,000	-	-	-	-
	(c) Incremental Bad Debt Losses	6,000	3,450	6,960	14,250	21,600
	(d) Incremental Expected Profit (a – b –c)]		**6,550**	**9,040**	**10,750**	**8,400**
B.	**Required Return on Incremental Investments:**					
	(a) Cost of Credit Sales	4,50,000	4,70,000	4,82,000	5,00,000	5,10,000
	(b) Collection period	30	40	50	60	75

Particulars		Present Policy 30 days	Proposed Policy A 40 days	Proposed Policy B 50 days	Proposed Policy C 60 days	Proposed Policy D 75 days
		₹	₹	₹	₹	₹
	(c) Investment in Receivable (a × b/360)	37,500	52,222	66,944	83,333	1,06,250
	(d) Incremental Investment in Receivables	-	14,722	29,444	45,833	68,750
	(e) Required Rate of Return (in %)		20	20	20	20
	(f) Required Return on Incremental Investments (d × e)	-	**2,944**	**5,889**	**9,167**	**13,750**
C.	**Net Benefits (A – B)**	-	3,606	3,151	1,583	– 5,350

Expected Return Approach
(Incremental Profit / Incremental Receivable) = A(d) / B(d)

Expected ROR		44.49%	30.70%	23.45%	12.22%

Financing of Receivables

Allows business to receive early payment in respect of their outstanding issued invoices rather than letting them sit in form of accounts receivable, of course comes at a cost.

Pledging

- Securing short term loan with receivables as collateral (funding between 50-90% of receivables)
- Involves high cost of financing

Factoring

- Outright sale of receivables to a factor or financial agency
- Can be Recourse (factor can require to replace the receivables) and can be non- recourse (factor bears the risk of loss)
- Factor charges commission & interest accordingly (basis risk) & can also withhold some amount for adjustments
- It is not a loan & hence no repayment required & balance sheet remains healthy

Statement showing the Evaluation of Factoring Proposal

	Particulars	₹
A.	**Annual Savings (Benefit) on taking Factoring Service**	
	Cost of Credit Administration saved	.....
	Bad Debts avoided	.....
	Interest saved due to reduction in Average collection period (Wherever applicable) [Cost of Annual Credit Sales × Rate of Interest × (Present Collection Period – New Collection Period)/360* days]	.....
	Total	.....
B.	**Annual Cost of Factoring to the Firm:**	
	Factoring Commission [Annual credit Sales × % of Commission (or calculated annually)]	.....
	Interest Charged by Factor on advance (or calculated annually)	.....
	[Amount available for advance or (Annual Credit Sales – Factoring Commission – Factoring Reserve)] × $\left[\frac{\text{Collection Period (days)}}{360^*} \times \text{Rate of Interest}\right]$	
	Total	.....
C.	**Net Annual Benefits/Cost of Factoring to the Firm:**	.....
	Rate of Effective Cost of Factoring to the Firm $= \frac{\text{Net Annual cost of Factoring}}{\text{Amount available for advance}} \times 100$ or $\frac{\text{Net annual Cost of Factoring}}{\text{Advances to be paid}} \times 100$	
	Advances to be paid = (Amount available for advance – Interest deducted by factor)	

Advise- Factoring services should be availed if rate of effective cost of borrowing is less than existing cost of borrowing

Illustration

Heavens Co. has credit sales of ₹ 240 lakhs and its average collection period is 30 days. The financial controller estimates, bad debt losses are around 1.5% of credit sales. The firm spends ₹ 1,40,000 annually on debtors administration. This cost comprises of telephonic and fax bills along with salaries of staff members. These are the avoidable costs. A Factoring firm has offered to buy the firm's receivables. The factor will charge 1% commission and will pay an advance against receivables on an interest @10% p.a. after withholding 10% as reserve. Suggest if they should accept the factoring proposal. (assume 360 days in a year)

Working:-

Average monthly receivables = 30 x 240/360 = 20,00,000

Factor's Commission = 1% x 20,00,000 = 20,000

Factor's Retention = 10% x 20,00,000 = 2,00,000

Amount available for Advance = 20,00,000 – 2,20,000

Thus, Interest = 10% x 17,80,000 x 30/360 = 14,833

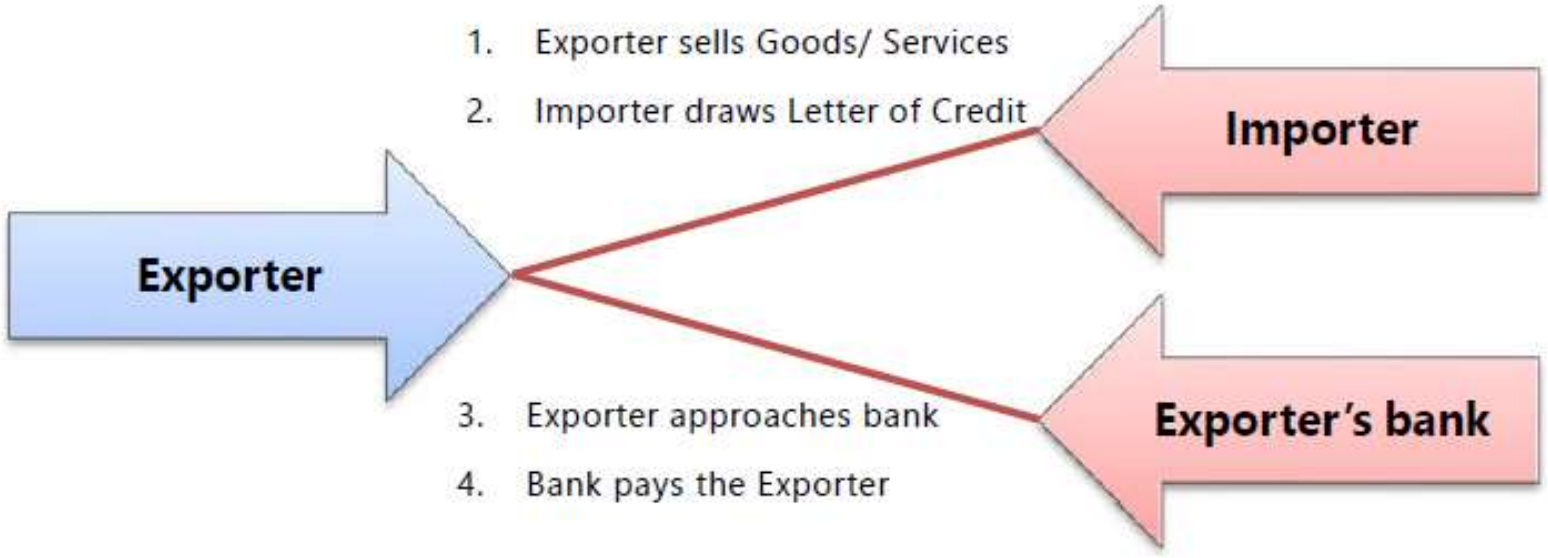
Net funding by factor = 17,80,000 – 14,833 = 17,65,167

Evaluation of Factoring Proposal:-

A. Annual Savings to Heavens Co.	
Administration Cost	1,40,000
Bad Debts (1.5% on 240L)	3,60,000
Total Savings	**5,00,000**
B. Annual Factoring Cost to Heavens Co.	
Factor's Annual Commission (20,000 x 12)	2,40,000
Annual Interest Charges (14833 x 12)	1,78,000
Total Costs	**4,18,000**
Net Savings, hence accept	**82,000**

Forfaiting

- Forfaiting – Relinquishing a right
- Bank buys the invoices / trade receivables from exporter who relinquishes his right to receive payment from importer
- Bank provides immediate finance to exporter without recourse
- Overseas buyer arranging for letter of credit from his bank in favour of exporter



Latest Developments & Monitoring

1) **Re-engineering Receivable Management –** Centralization of high Volume transactions, Alternative Payment techniques such as Integrated Voice response, Third party collections, lock boxes, direct debit etc.

2) **Use of Latest Technology –** Use of ERP systems to block transactions beyond a credit limit also integrated with various modules like Inventory, Electronic fund transfers etc

3) **Use of Financial Tools & Techniques –** due diligence for evaluating credit worthiness, use of credit rating agencies, efficient collection policies including automatic emailers, Monitoring by regular Ageing analysis etc

4) **Efficiency in Internal business practices –** Early issue of invoice, updating credit terms & limits, continuous monitoring, if required outsourcing etc.

5) **Robust Legal practices**

Illustration

Abhipra Limited has current sales of ₹ 18 lakhs per year. Cost of sales is 75% of sales and bad debts are 1% of sales. Cost of sales comprises 80 % variable costs and 20 % fixed costs, while the company's required rate of return is 14%. The company currently allows customers 30 days' credit, but is considering increasing this to 60 days' credit in order to increase sales.

It has been estimated that this change in policy will increase sales by 15 %, while bad debts will increase from 1% to 4%. It is not expected that the policy change will result in an increase in fixed costs and creditors and stock will be unchanged.

Should the company introduce the proposed policy? Analyse (Assume a 360 days year)

New level of sales will be 18,00,000 X 1.15 = ₹ 20,70,000
Variable costs are 80% X 75% = 60% of sales
Contribution from sales is therefore 40% of sales (100 – 60)
Fixed Cost are 20% × 75% = 15% of sales

Illustration

Particulars	Amount in ₹	Amount in ₹
Proposed investment in debtors = variable cost + fixed cost (assuming same as existing) = [(20,70,000 x 60%) + (18,00,000 x 15%)] x 60/360		252,000
Current Investment in debtors = [(18,00,000 x 60%) + (18,00,000 x 15%)] x 30/360		112,500
Increase in Investment in Debtors		139,500
Increase in Contribution = 18,00,000 x 15% x 40%		**108,000**
Less: Increase in Bad Debts (20,70,000 x 4% - 18,00,000 x 1%)		(64,800)
Less: Additional Financing Costs (139,500 x 14%)		(19,530)
Savings by changing the existing policy		**23,670**

Abhipra limited is advised to introduce the new policy

Management of Payables

Trade Payables or Creditors – Very significant source of short term finance. Slow payments can pose negative reputation, loss of early payments discount & also solvency issues at times.

Cost of Availing Credit – Early payment discount foregone, Loss of reputation if over-stepped, cost of managing

Cost of Not Availing Credit – Loss of interest , Loss of inflation benefit (if prices rise, you still pay same)

Payment Terms : 2/10, Net 30 means a credit period of 30 days and 2% discount if paid within 10 days

Annual Cost of forgoing discount:

$$\frac{360 \text{ or } 365}{\text{Credit Period - Discount Period}} \times \frac{\text{Discount \%}}{\text{100 - Discount \%}}$$

Inventory Management

Inventory : Major constituent of Working Capital

High levels of Inventory : No stockouts & less ordering cost, but more carrying cost & opportunity cost

Low levels of inventory : Less carrying costs, but more ordering costs & risks of Stock Outs, loss of reputation

Illustration

Pureair Company is a distributor of air filters to retail stores. It buys its filters from several manufacturers. Filters are ordered in lot sizes of 1,000 and each order costs ₹ 40 to place. Demand from retail stores is 20,000 filters per month, and carrying cost is ₹ 0.10 a filter per month.

(a) COMPUTE the optimal order quantity with respect to so many lot sizes?

(b) CALCULATE the optimal order quantity if the carrying cost were ₹ 0.05 a filter per month?

(c) COMPUTE the optimal order quantity if ordering costs were ₹ 10?

$$EOQ = \sqrt{\frac{2(Annual\ Demand * Cost\ per\ Order)}{Annual\ holding\ cost\ per\ unit}}$$

a) EOQ = 4 b) EOQ = 5.66 c) EOQ = 2

Financing of Working Capital

Permanent WC – always required irrespective of sales i.e. financed by long term sources debt & Equity

Temporary WC – can be required on & off i.e. financed by short term sources of finance

Sources of WC

- Spontaneous Sources: Trade Credit (time period allowed by suppliers), bills payable, accrued Expenses
- Inter-corporate loans / deposits
- Funds generated by operations – profits & depreciation (for replacement)
- Factoring of Receivables
- Commercial Papers – unsecured promissory note issued to raise funds for short period by highly rated firms, Maturity: 7days to 1 year, In denomination of ₹ 5 Lakhs
- Working Capital Financing by Banks – Bank Overdraft, Bank Guarantees, bills discounting etc

Maximum permissible bank finance (MPBF) recommended by RBI - Tandon Committee

- Suggests 25% of either working capital or current assets should be funded by long term funds and balance can be MPBF

Test Yourself

Q1. When a firm advises its customers to mail their payments to designated post office collection centres, the system is known as

a) Concentration Banking

b) Lock Box System

c) Playing the Float

d) Factoring

Q2. The term gross working capital is known as:

a) Investment in Current Assets

b) Investment in Current Liabilities

c) Current Assets minus Current Liabilities

d) Investment in Non-Current Liabilities

Question

PQ Ltd., a company newly commencing business in 2019 has the following projected Profit and Loss Account:

	(₹)	(₹)
Sales		2,10,000
Cost of goods sold		1,53,000
Gross Profit		57,000
Administrative Expenses	14,000	
Selling Expenses	13,000	27,000
Profit before tax		30,000
Provision for taxation		10,000
Profit after tax		20,000
The cost of goods sold has been arrived at as under:		
Materials used	84,000	
Wages and manufacturing Expenses	62,500	
Depreciation	23,500	
	1,70,000	
Less: Stock of Finished goods (10% of goods produced not yet sold)	17,000	
	1,53,000	

The cost of goods sold figure given P&L A/c relate only to finished goods and not to work-in- progress. Goods equal to 15% of the year's production (in terms of physical units) will be in process on the average requiring full materials but only 40% of the other expenses. The company believes in keeping materials equal to two months' consumption in stock.

All expenses will be paid one month in advance. Suppliers of materials will extend 1-1/2 months credit. Sales will be 20% for cash and the rest at two months' credit. 70% of the Income tax will be paid in advance in quarterly instalments. The company wishes to keep Rs. 8,000 in cash. 10% has to be added to the estimated figure for unforeseen contingencies.

Prepare an estimate of working capital.

Question

Slow Payers are regular customers of Goods Dealers Ltd. and have approached the sellers for extension of credit facility for enabling them to purchase goods. On an analysis of past performance and on the basis of information supplied, the following pattern of payment schedule emerges in regard to Slow Payers:

Pattern of Payment Schedule	
At the end of 30 days	15% of the bill
At the end of 60 days	34% of the bill.
At the end of 90 days	30% of the bill.
At the end of 100 days	20% of the bill.
Non-recovery	1% of the bill.

Slow Payers want to enter into a firm commitment for purchase of goods of ₹ 15 lakhs in 20X7, deliveries to be made in equal quantities on the first day of each quarter in the calendar year. The price per unit of commodity is ₹ 150 on which a profit of ₹ 5 per unit is expected to be made. It is anticipated by Goods Dealers Ltd., that taking up of this contract would mean an extra recurring expenditure of ₹ 5,000 per annum. If the opportunity cost of funds in the hands of Goods Dealers is 24% per annum, would you as the finance manager of the seller recommend the grant of credit to Slow Payers? ANALYSE. Workings should form part of your answer. Assume year of 365 days.

Question

Day Ltd., a newly formed company has applied to the Private Bank for the first time for financing it's Working Capital Requirements. The following information is available about the projections for the current year:

Estimated Level of Activity	Completed Units of Production 31,200 plus unit of work in progress 12,000
Raw Material Cost	₹ 40 per unit
Direct Wages Cost	₹ 15 per unit
Overhead	₹ 40 per unit (inclusive of Depreciation ₹10 per unit)
Selling Price	₹ 130 per unit
Raw Material in Stock	Average 30 days consumption
Work in Progress Stock	Material 100% and Conversion Cost 50%
Finished Goods Stock	24,000 Units
Credit Allowed by the supplier	30 days
Credit Allowed to Purchasers	60 days
Direct Wages (Lag in payment)	15 days
Expected Cash Balance	₹ 2,00,000

Assume that production is carried on evenly throughout the year (360 days) and wages and overheads accrue similarly. All sales are on the credit basis. You are required to CALCULATE the Net Working Capital Requirement on Cash Cost Basis.

Question

From the information and the assumption that the cash balance in hand on 1st January 2017 is ₹ 72,500 PREPARE a cash budget.

Assume that 50 per cent of total sales are cash sales. Assets are to be acquired in the months of February and April. Therefore, provisions should be made for the payment of ₹ 8,000 and ₹ 25,000 for the same. An application has been made to the bank for the grant of a loan of ₹ 30,000 and it is hoped that the loan amount will be received in the month of May.

It is anticipated that a dividend of ₹ 35,000 will be paid in June. Debtors are allowed one month's credit. Creditors for materials purchased and overheads grant one month's credit. Sales commission at 3 per cent on sales is paid to the salesman each month.

Month	Sales (₹)	Materials Purchases (₹)	Salaries & Wages (₹)	Production Overheads (₹)	Office and Selling Overheads (₹)
January	72,000	25,000	10,000	6,000	5,500
February	97,000	31,000	12,100	6,300	6,700
March	86,000	25,500	10,600	6,000	7,500
April	88,600	30,600	25,000	6,500	8,900
May	1,02,500	37,000	22,000	8,000	11,000
June	1,08,700	38,800	23,000	8,200	11,500

Question

The Alliance Ltd., a Petrochemical sector company had just invested huge amount in its new expansion project. Due to huge capital investment, the company is in need of an additional ₹ 1,50,000 in working capital immediately. The Finance Manger has determined the following three feasible sources of working capital funds:

(i) Bank loan: The Company's bank will lend ₹ 2,00,000 at 15%. A 10% compensating balance will be required, which otherwise would not be maintained by the company.

(ii) Trade credit: The company has been offered credit terms from its major supplier of 3/30, net 90 for purchasing raw materials worth ₹ 1,00,000 per month.

(iii) Factoring: A factoring firm will buy the company's receivables of ₹ 2,00,000 per month, which have a collection period of 60 days. The factor will advance up to 75% of the face value of the receivables at 12% on an annual basis. The factor will also charge commission of 2% on all receivables purchased. It has been estimated that the factor's services will save the company a credit department expense and bad debt expense of ₹ 1,250 and ₹ 1,750 per month respectively.

On the basis of annual percentage cost, ADVISE which alternative should the company select? Assume 360 days year.

THANK YOU