



Financial Management

Unit – 4

Working Capital Management

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Topics Covered

- Concept of working capital
- Planning for working capital
- The risk-return trade-off
- Management of cash and near-cash assets
- Payables management
- Management of accounts receivable
- Inventory management
- Sources, of short-term finance.

Working Capital

There is no universally accepted definition of working capital.

- Some explain it in the narrow sense as the difference between current assets and current liabilities.
- Some other writers define it in a wider sense that working capital is equal to the total current assets.

(Firm's investment in current assets – Cash, Inventories, Receivables)

- On the other hand, some writers term it as 'circulating capital'.

Working Capital Management

- **Working capital management** is the process of planning and controlling the level and mix of the current assets of the firm as well as financing these assets.
- Specifically, working capital management requires financial managers to decide what quantities of cash, other liquid assets, accounts receivable, and inventories the firm will hold at any point in time. In addition, financial managers must decide how their current assets are to be financed.

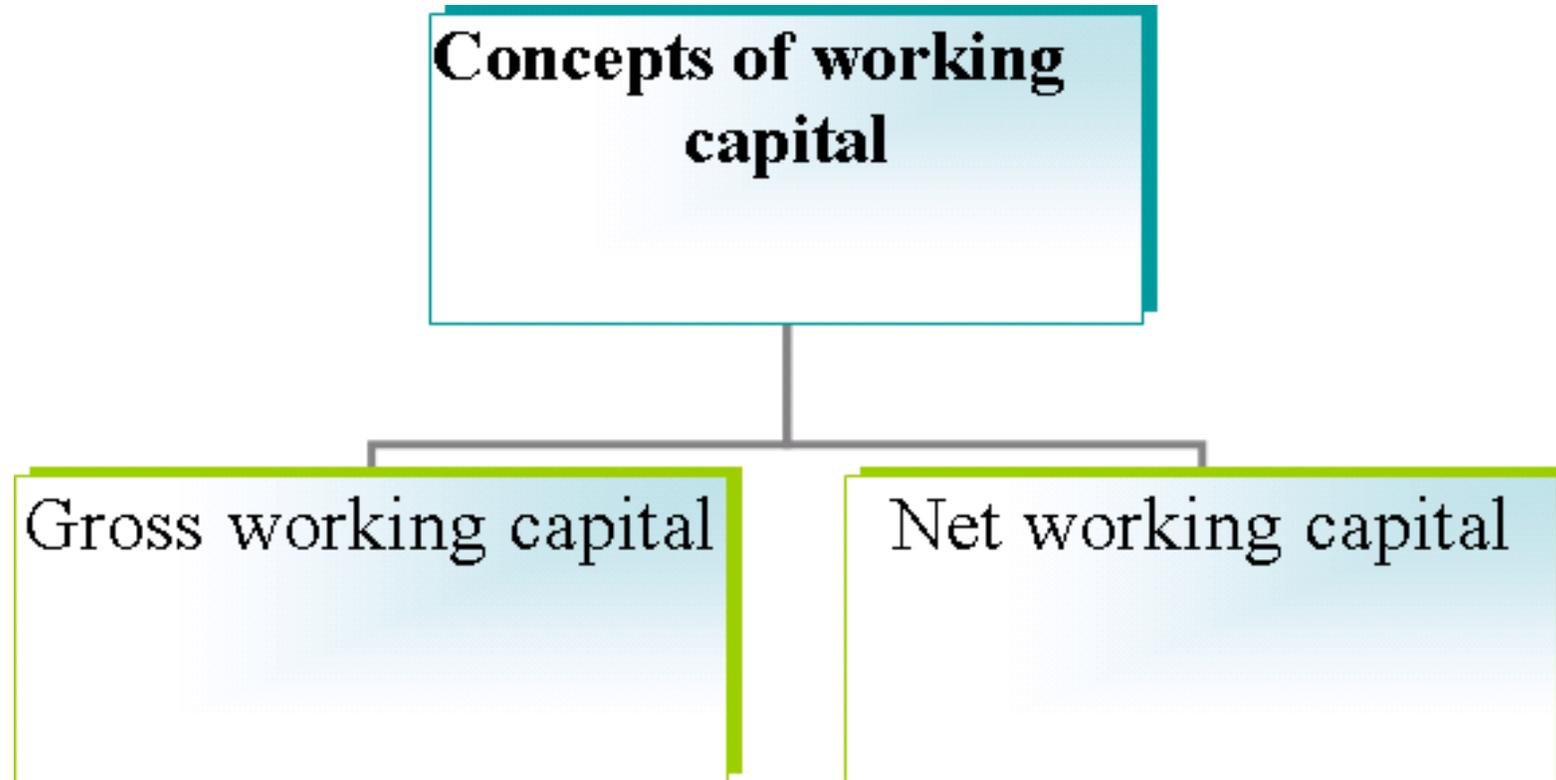
Dangers of too little Working Capital-

- Contributing factor to business failure.
- Affects the credit rating of the firm adversely.
- Prevents attractive opportunities being materialized.
- Affects dividend policy adversely.

Dangers of too much Working Capital-

- Management's efficiency may deteriorate.
- Speculation may be encouraged.
- Unjustifiable expansion be encouraged.
- Liberal dividend policy may be followed.
- Inefficiency may be encouraged.

Concepts of Working Capital



Concepts of Working Capital

1. Gross Working Capital

focuses on

- Optimisation of investment in current assets
- Financing of current assets

2. Net Working Capital

focuses on

- Liquidity position of the firm
- Judicious mix of short-term and long-term financing

Gross working capital (GWC)

GWC refers to the firm's total investment in current assets.

Current assets are the assets which can be converted into cash within an accounting year (or operating cycle) and include cash, short-term securities, debtors, (accounts receivable or book debts) bills receivable and stock (inventory).

Net working capital (NWC)

- **NWC** refers to the difference between current assets and current liabilities.
- **Current liabilities** (CL) are those claims of outsiders which are expected to mature for payment within an accounting year and include creditors (accounts payable), bills payable, and outstanding expenses.
- NWC can be positive or negative.
 - **Positive NWC = $CA > CL$**
 - **Negative NWC = $CA < CL$**

Net working capital (NWC)



Working
Capital
Formula

=



Current Assets

–



Current Liabilities

Net working capital (NWC)

How to Calculate Your Working Capital



Current Assets



Current Liabilities



Working Capital



\$1.75 million in assets



\$550,000 in liabilities



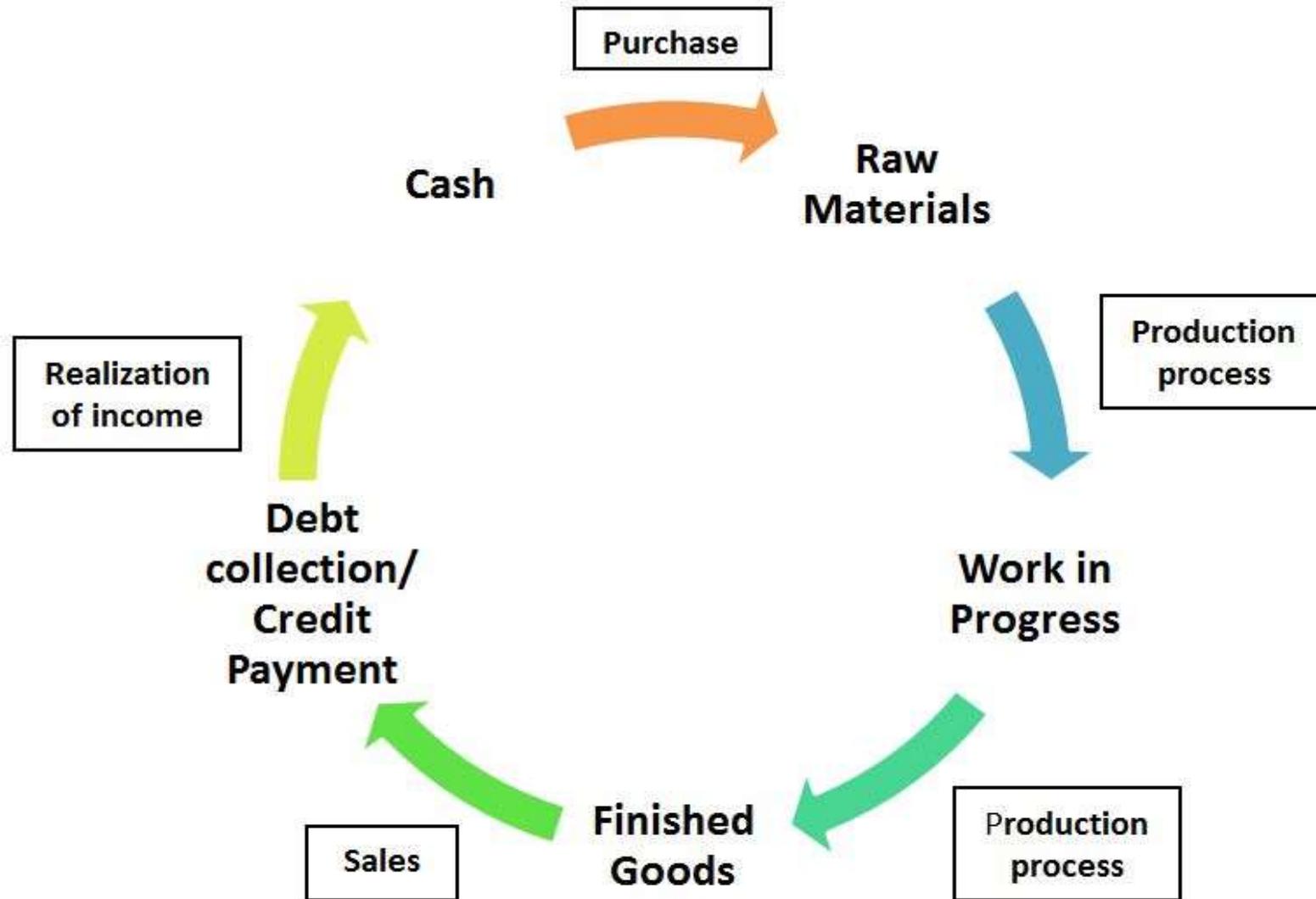
Working Capital Cycle



Operating Cycle

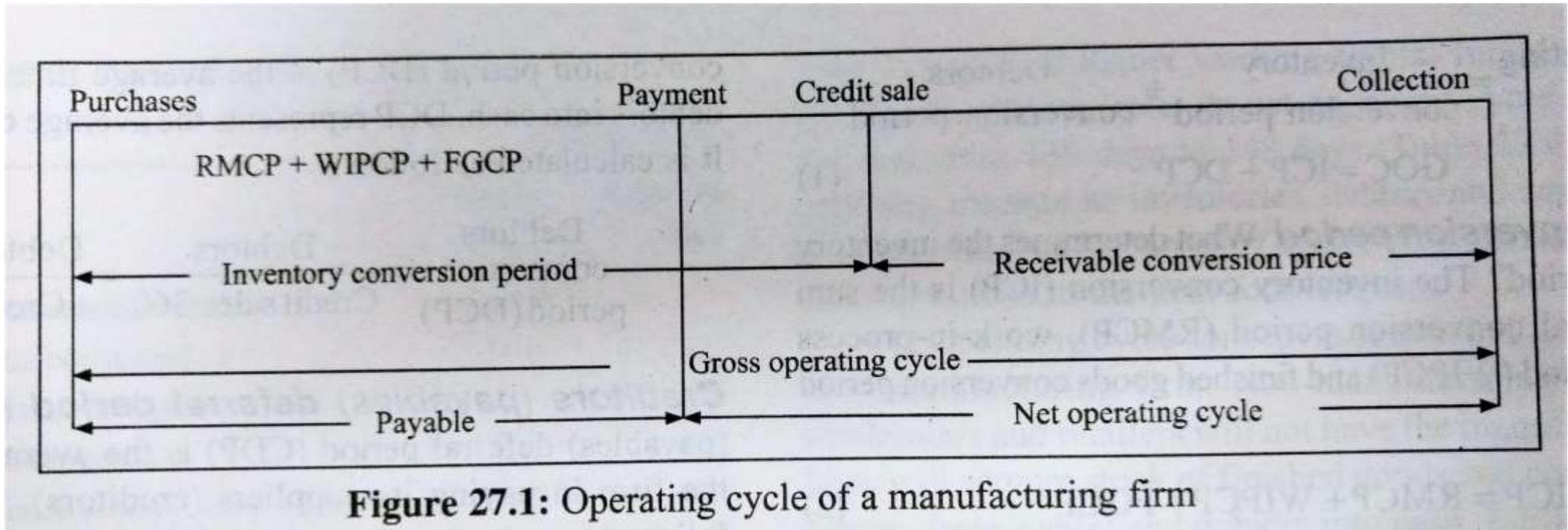
- Operating cycle is the time duration required to convert sales, after the conversion of resources into inventories, into cash. The operating cycle of a manufacturing company involves three phases:
 - ***Acquisition of resources*** such as raw material, labour, power and fuel etc.
 - ***Manufacture 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.

Operating Cycle



Operating Cycle of a Business

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

Debtors conversion period

- The debtors conversion period is the time required to collect the outstanding amount from the customers.

Creditors or payables deferral period (CDP)

- **Creditors or payables deferral period (CDP)** is the length of time the firm is able to defer payments on various resource purchases.

- **Gross operating cycle** (GOC)

The total of inventory conversion period and debtors conversion period is referred to as gross operating cycle (GOC).

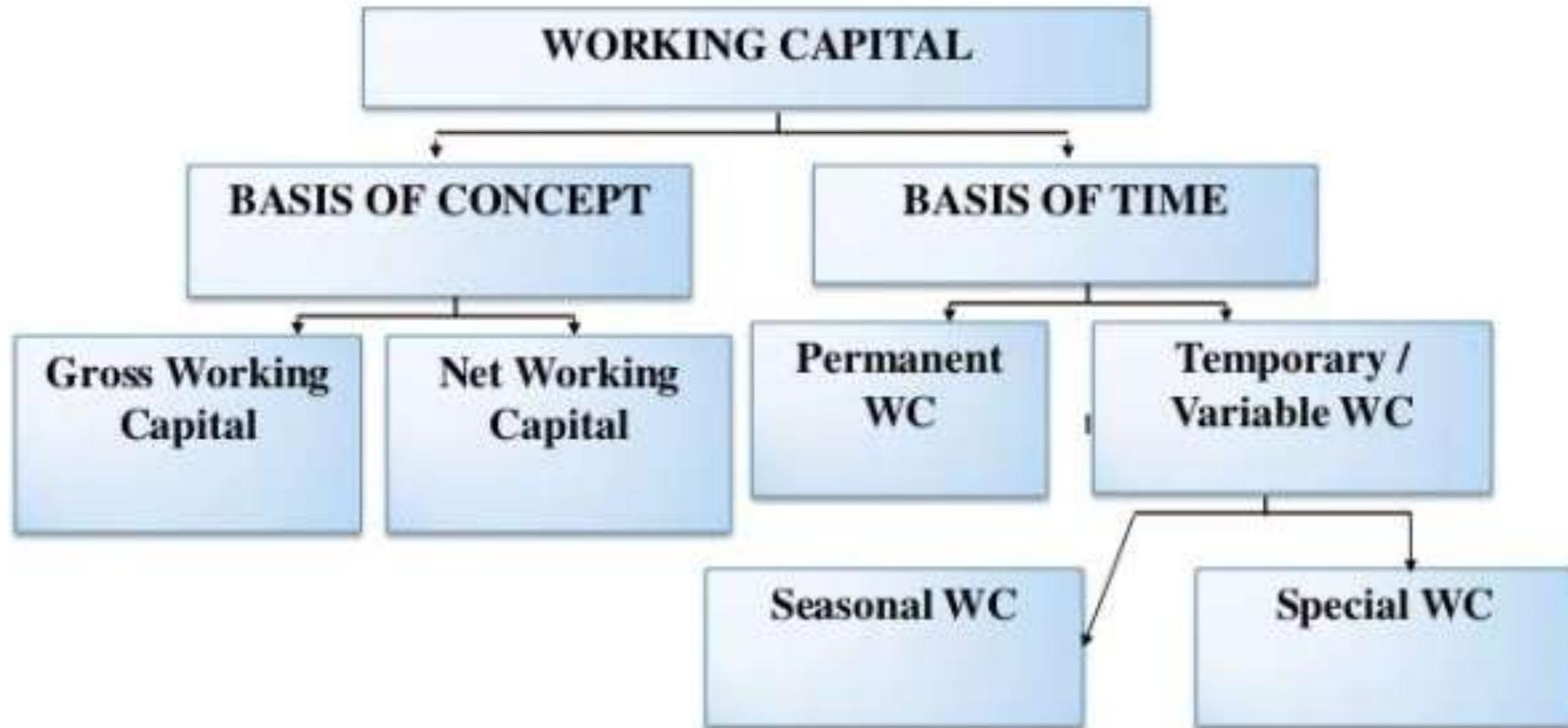
- **Net operating cycle** (NOC)

NOC is the difference between GOC and CDP.

- **Cash conversion cycle** (CCC)

CCC is the difference between NOP and non-cash items like depreciation.

TYPES OF WORKING CAPITAL



Permanent or fixed working capital

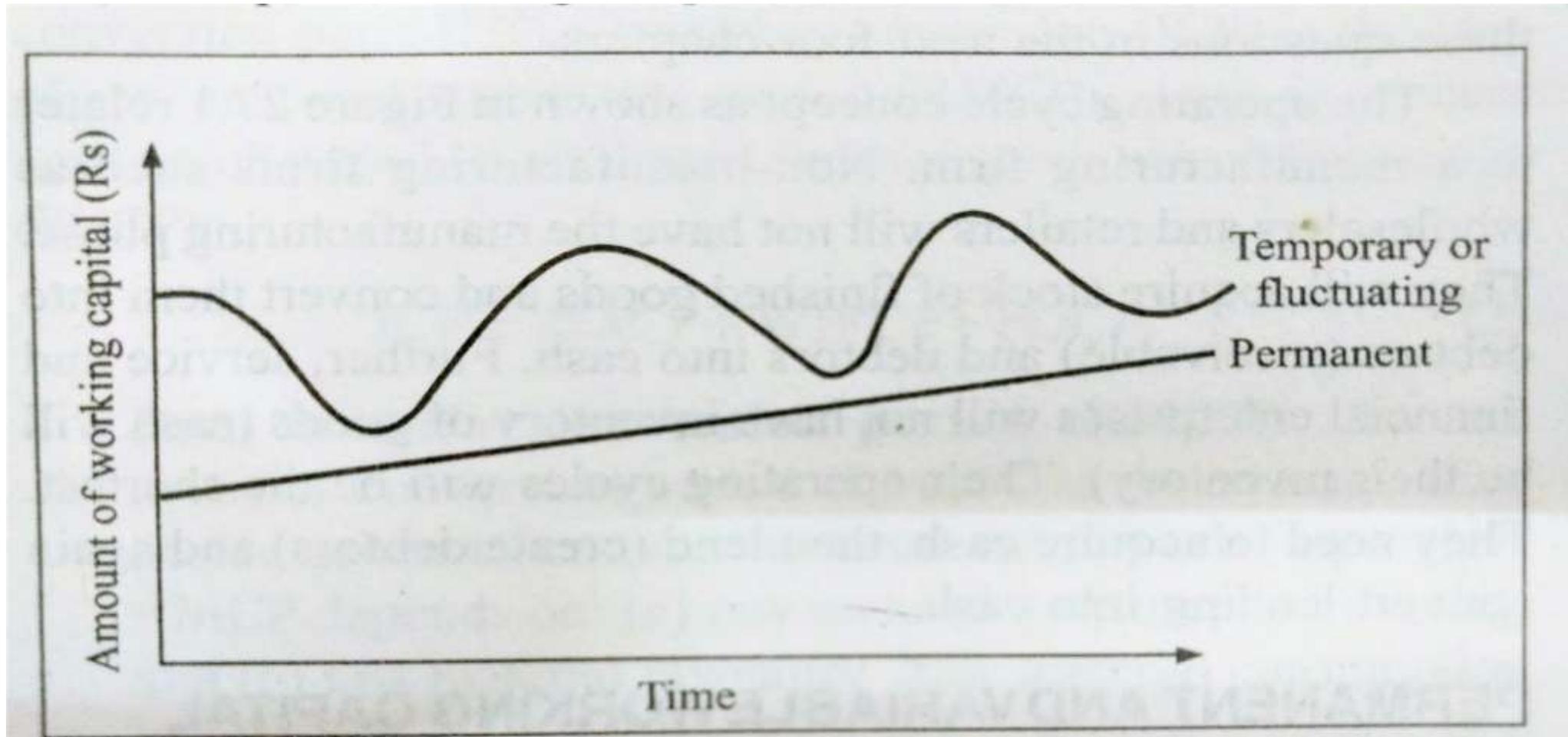


Figure 27.3: Permanent and temporary working capital

Permanent Vs. 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.

DETERMINANTS OF WORKING CAPITAL

1

Nature & Size of Business

2

Manufacturing Cycle

3

Production Process

4

Business Cycle

5

Seasonal Variation

6

Scale of Operation

7

Inventory Policy

8

Credit Policy

Other Determinants of Working Capital

1. Operating efficiency / Rapidity of Turnover.
2. Terms of Purchases / Supplies' credit
3. Growth and Expansion of Business.
4. Market and demand
5. Dividend Policy of the concern.
6. Inflationary Conditions.

Management of Working Capital

- The financial managers always tries to maintain an adequate working capital at every time so as to carry on day-to-day operations of the firm successfully and economically.
- There are dangers in having too little or too much working capital. Therefore, the financial manager has to be very vigilant all throughout about the trends in the items that make up the working capital.

Objectives of Working Capital Management

1. To maintain adequate working capital at every time.
2. To minimize the cost of short-term financing
3. To plan the various sources of short-term finance well in advance.
4. To assess the effectiveness of the management.
5. To maximize the return on investment of equity shareholders.

Optimum Working Capital

- A firm has to maintain an adequate level of working capital to run its operations smoothly and effectively. It should be adequate in the sense that it shall not be more than the requirements nor it shall be less than the requirements. Both the excessive as well as inadequate working capital positions are dangerous from the firm's point view.
- We know that the current liabilities are met out of the current assets. So the level of current assets shall be sufficient enough to meet the current liabilities. Excessive working capital refers to the position where when the level of current assets is much higher to meet current liabilities. The excessive capital has opportunity cost for the firm, as this excessive capital remains idle in the firm, which earns no profit for the firm. If these funds shall be invested in some profitable project, it adds the profitability of the firm.
- On the other hand, inadequate working capital refers to the position where the current assets are not sufficient enough to meet the current liabilities. Such type of position may be harmful to the firm as it may interrupt the production and sales of the Company, which ultimately affects the profitability of the Company. If the liquidity position of the firm is not adequate enough to meet its current liabilities, it may affect its credibility in the market.
- Therefore an enlightened management should maintain the right amount of working capital on a continuous basis. Only then the proper functioning of business operations can be ensured. The amount of the working capital shall be maintained at such level, which is adequate for it to run its business operations, neither excessive nor inadequate. This level of working capital is called as the "Optimum Working Capital".

Importance of Working Capital

1. Continuity in Business Operations.

2. Dividend Payment.

3. Repayment of Long-Term Loans.

4. Increases Creditworthiness.

5. Boosts Efficiency and Productivity.

6. Helps to Fight Competition.

7. Helps to Withstand Seasonal Fluctuations.

8. Increases Goodwill.

Tools of Working Capital Analysis

1. Schedule of Changes in Working Capital
2. Working Capital Ratios (current ratio, quick ratio, debtors turnover ratio, creditors turnover ratio, inventory turnover ratio)
3. Movement of Working Capital Statement
4. Cash Flow Analysis
5. Funds Flow Analysis
6. Working Capital Budget (Cash Budget)
7. Working Capital Reports (Inventory Report, Cash Report, Receivables Reports)

Current Assets:

Cash	\$ 20,000.00
Accounts Receivable	15,000.00
Inventories	45,000.00
	<hr/>
	80,000.00

Current Liabilities

Accounts Payable	\$ 25,000.00
Short-term Borrowings	5,000.00
Accrued Liabilities	10,000.00
	<hr/>
	40,000.00

Working Capital

\$ 40,000.00

Current Assets

—

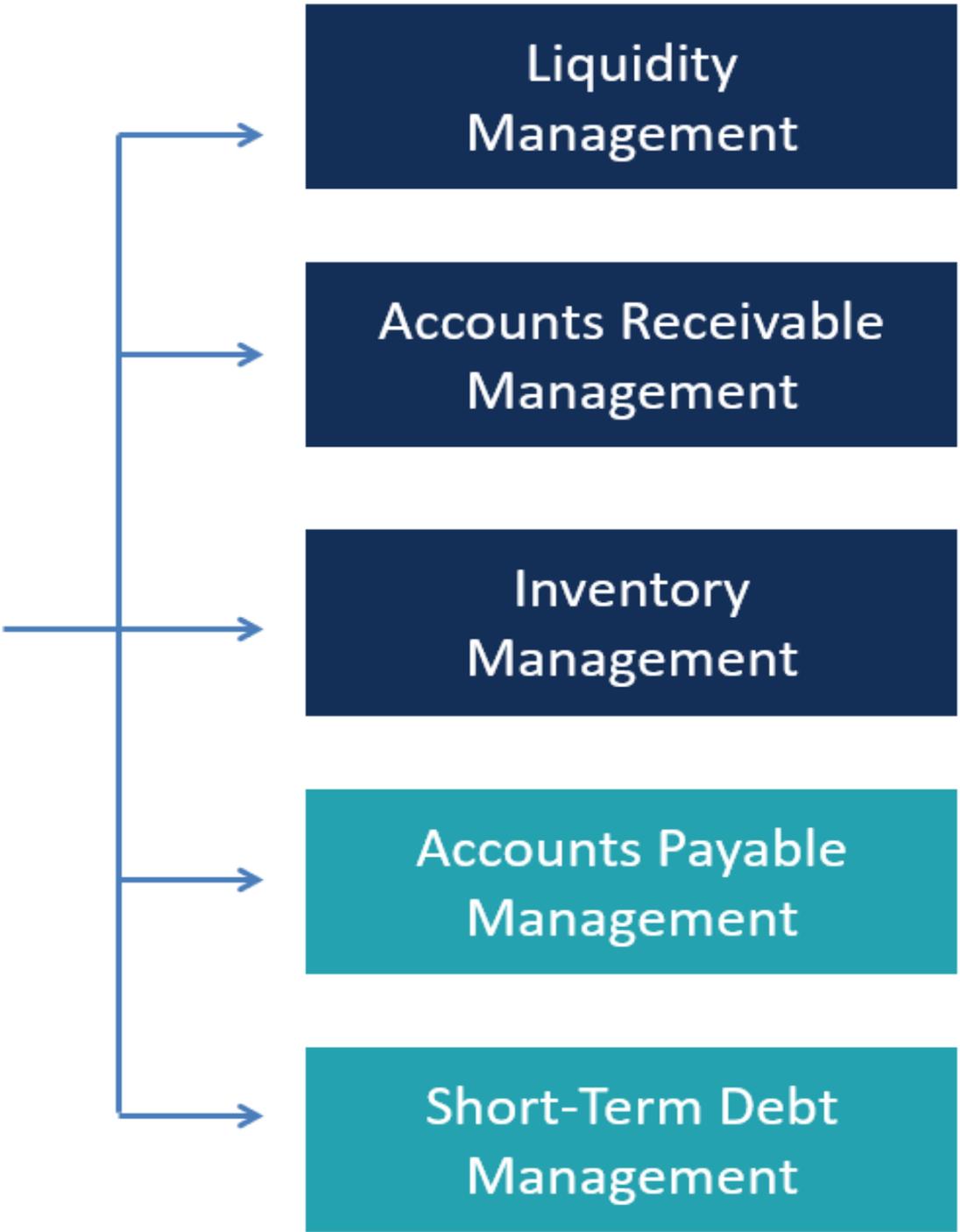
Current Liabilities

—

=

Working Capital

Working Capital Management

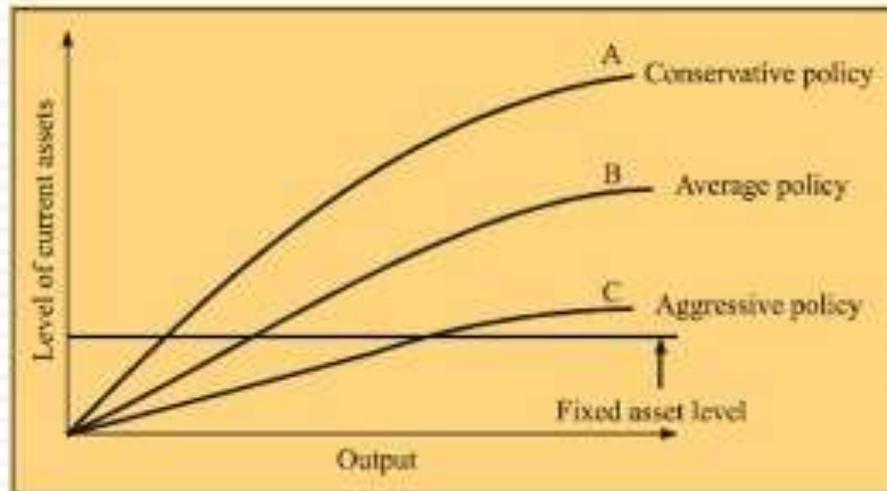


Issues in Working Capital Management

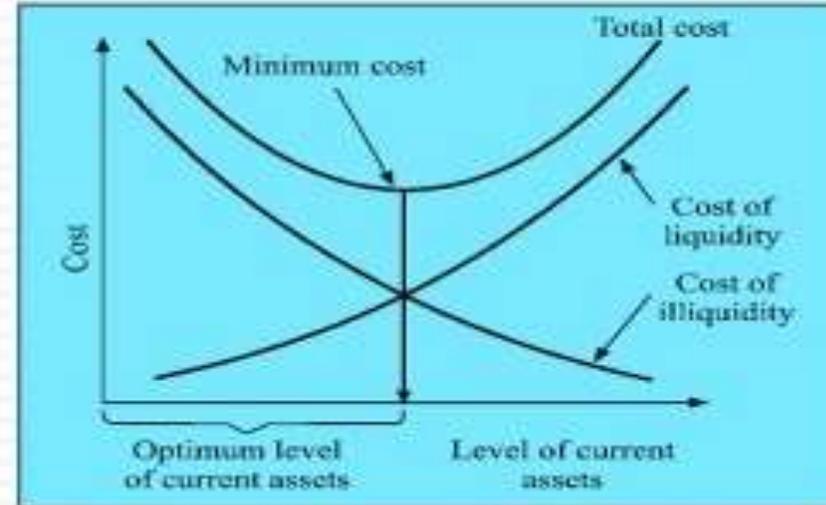
1. Levels of current assets
2. Current assets to fixed assets Ratio
3. Liquidity Vs. profitability
4. Cost trade-off

Issues in Working Capital Management

- ↪ **Current Assets to Fixed Assets Ratio**
- ↪ **Liquidity vs. Profitability: Risk–Return Trade-off**
- ↪ **The Cost Trade-off**



Alternative current asset policies



Cost Trade-off

Forecasting / Estimation of Working Capital Requirements

Factors to be considered :

- Total costs incurred on materials, wages and overheads
- The length of time for which raw materials remain in stores before they are issued to production.
- The length of the production cycle or work in progress (WIP), i.e., the time taken for conversion of raw material (RM) into finished goods (FG).
- The length of the Sales Cycle during which finished goods (FG) are to be kept waiting for sales.
- The average period of credit allowed to customers.

Estimating Working capital

1. 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.

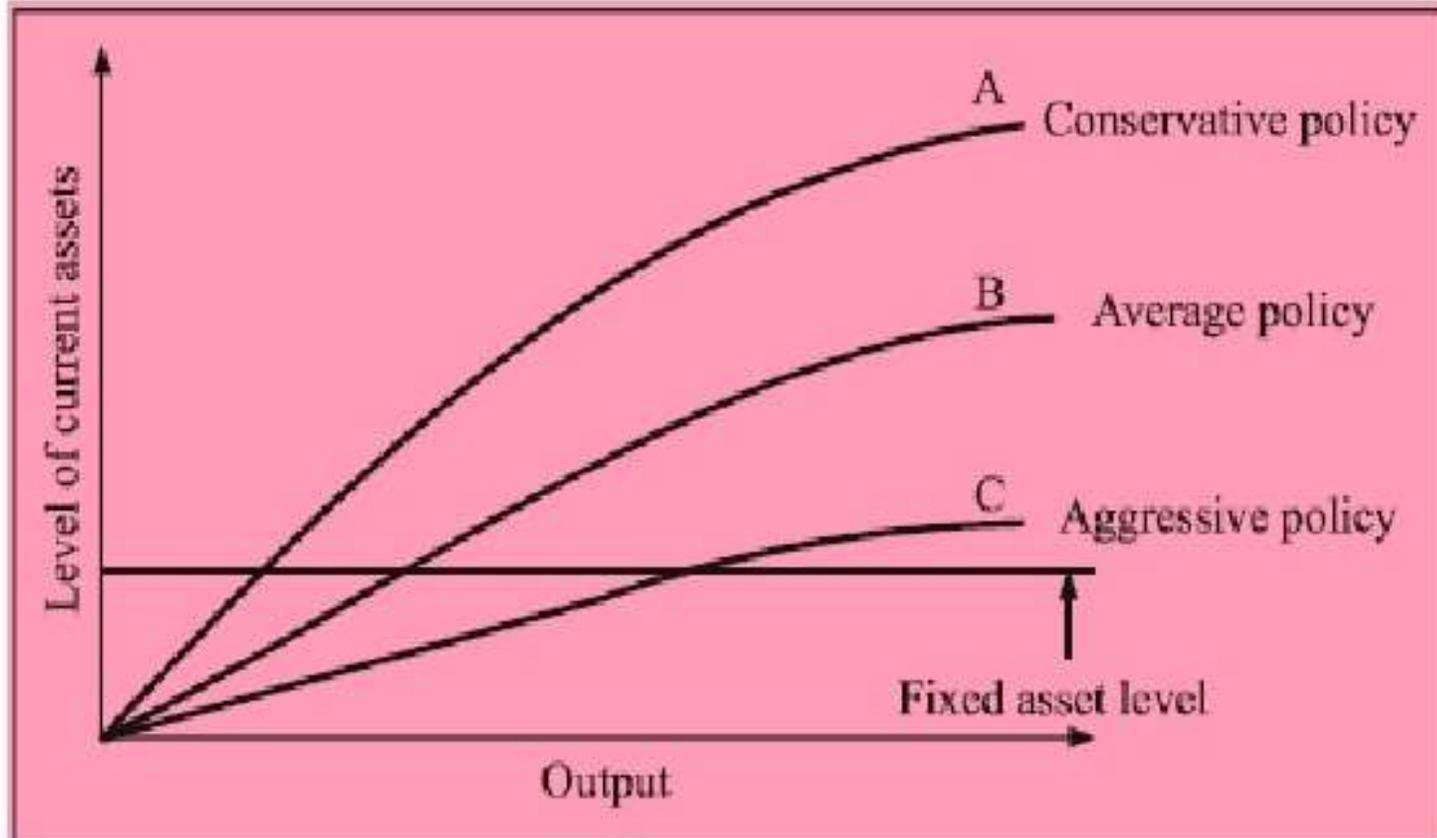
2. Ratio of sales

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

3. Ratio of fixed investment

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

Current assets to fixed assets Ratio



Alternative current asset policies

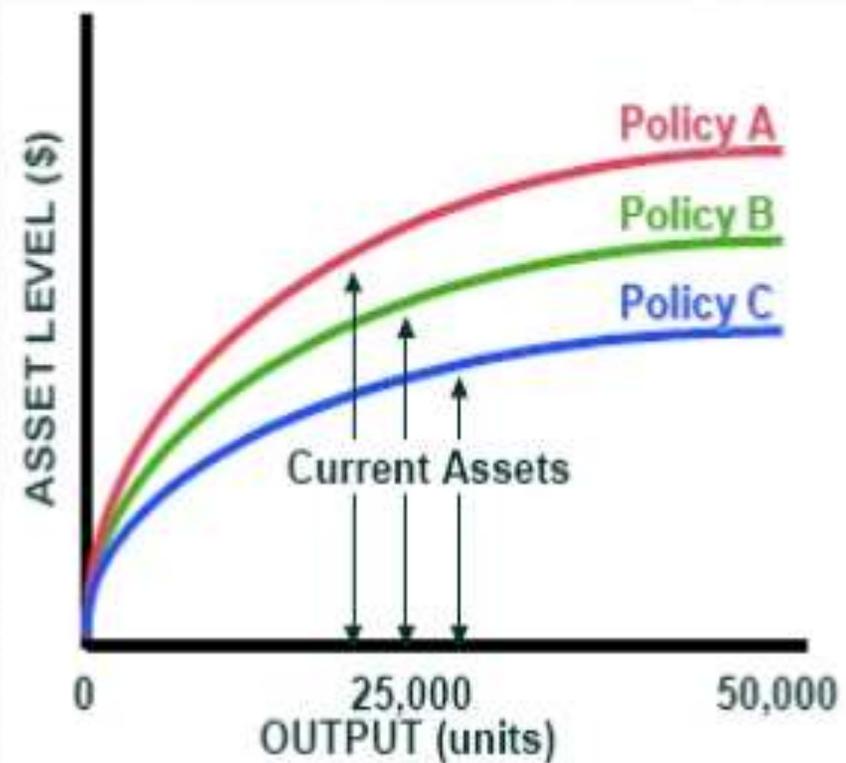
IMPACT ON LIQUIDITY

Optimal Amount (Level) of Current Assets

Liquidity Analysis

<u>Policy</u>	<u>Liquidity</u>
A	High
B	Average
C	Low

- ❖ Greater current asset levels generate more liquidity; all other factors held constant.



IMPACT ON EXPECTED PROFITABILITY

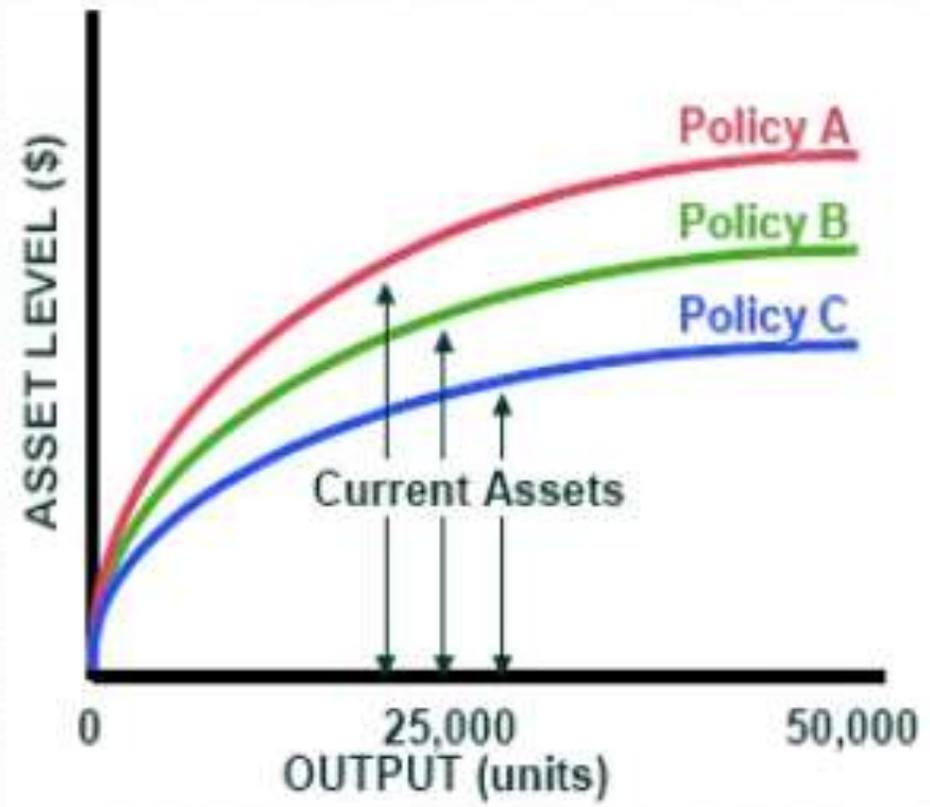
Optimal Amount (Level) of Current Assets

Return on Investment
= Net profit / Total Assets

Let,

Current Assets
= (Cash + Rec. + Inv.)

Return on Investment
= (Net Profit / Current + Fixed Assets)



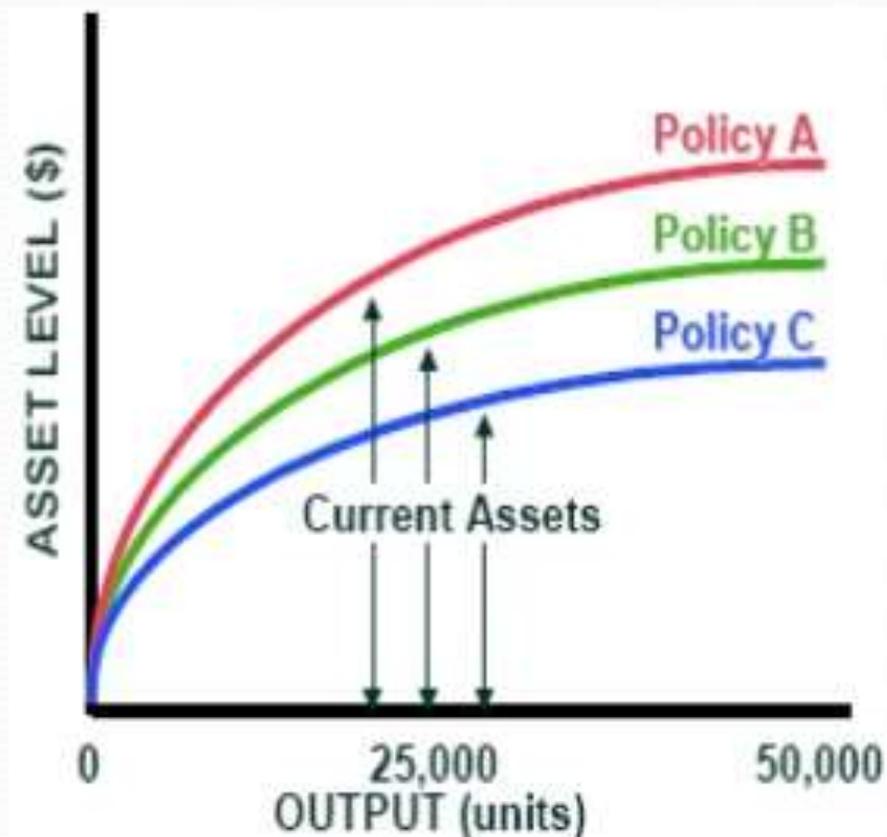
IMPACT ON RISK

Optimal Amount (Level) of Current Assets

Risk Analysis

<u>Policy</u>	<u>Risk</u>
A	Low
B	Average
C	High

- ❖ Risk increases as the level of current assets are reduced.



Risk-Return Tradeoff

Working Capital Management and the Risk-Return Tradeoff

- Working capital management encompasses the day-to-day activities of managing the firm's current assets and current liabilities. Examples of working capital decisions include:
 - How much inventory should a firm carry?
 - Who should credit be extended to?
 - Should inventories be bought on credit or cash?
 - If credit is used, when should payment be made?

Liquidity Vs. Profitability

- The level of working capital affects the degree of risk and profitability both. Hence the level of working capital should be so fixed that, on the one hand, its financial soundness is maintained and on the other hand, its profitability is optimized.

Liquidity Vs. Profitability

LIQUIDITY V PROFITABILITY



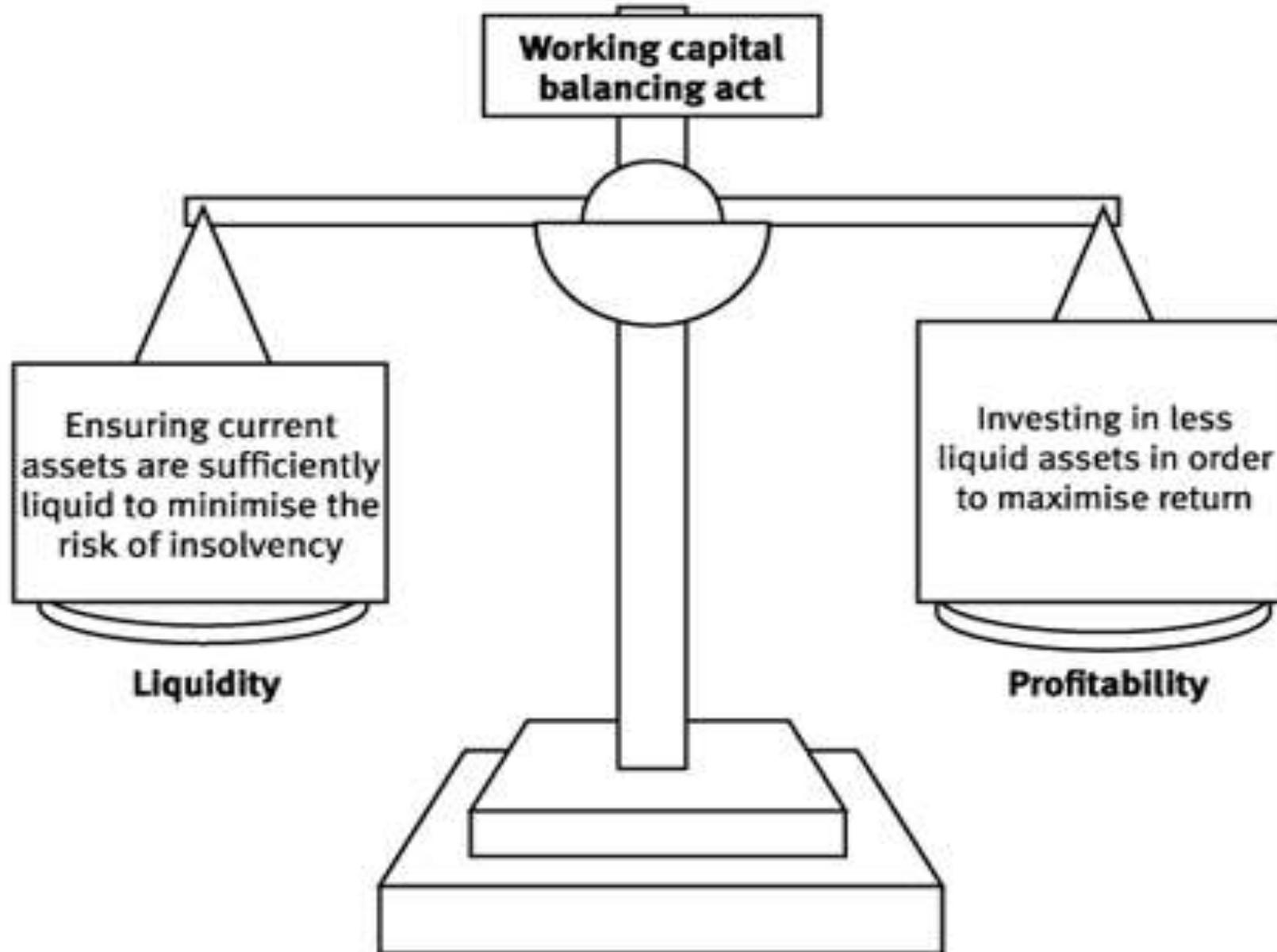
High investment
in working capital

- More liquid but may not be using working capital efficiently
- Less profitable

Low investment
in working capital

- Less liquid but may be using working capital efficiently
- More profitable

Liquidity Vs. Profitability



Working Capital Finance Policies

1. Long-term
2. Short-term
3. Spontaneous

■ Short-term Vs. Long-term financing

- Cost
- Flexibility
- Risk

Working Capital Finance Strategies

1. Matching
2. Conservative
3. Aggressive

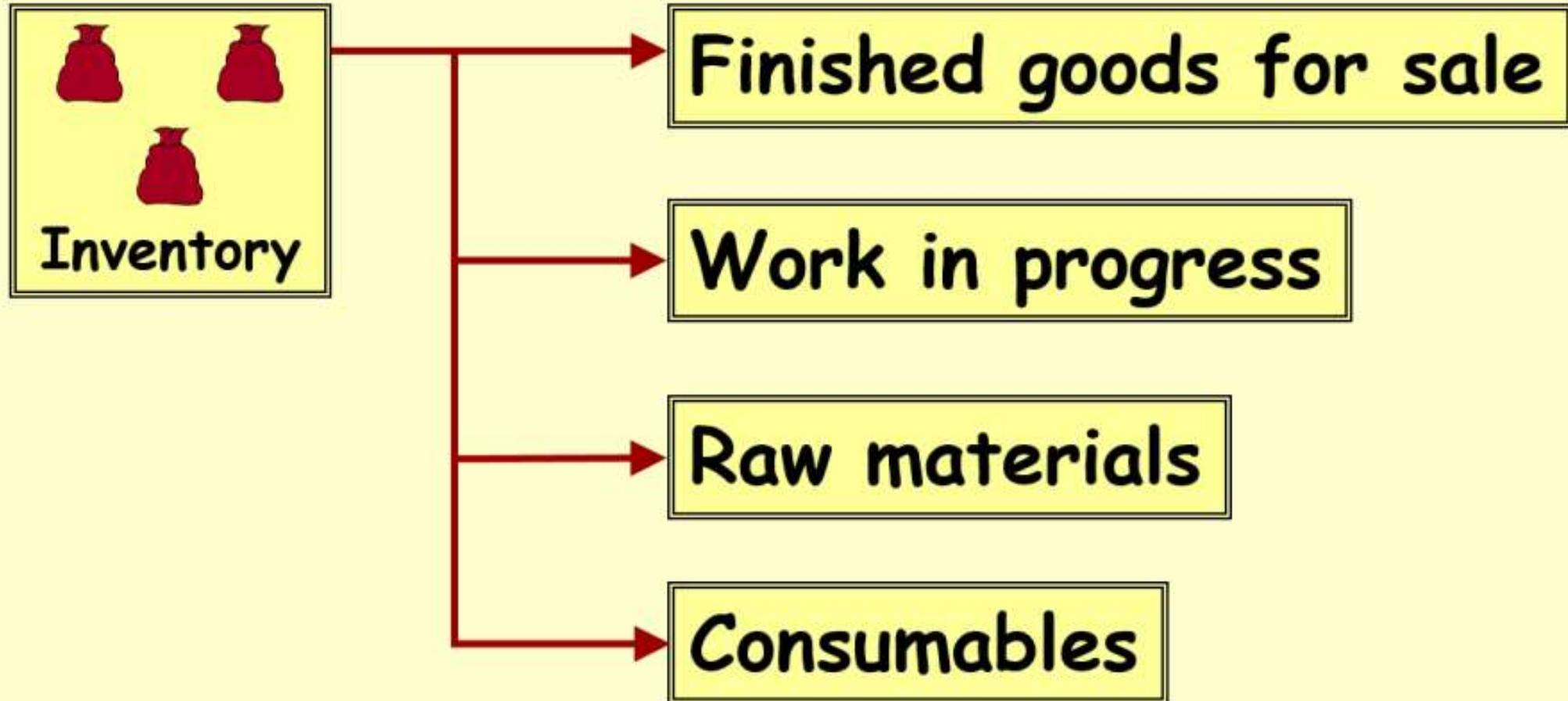
Inventory Management

What is inventory?

Inventory is the raw materials, component parts, work-in-process, or finished products that are held at a location in the supply chain.



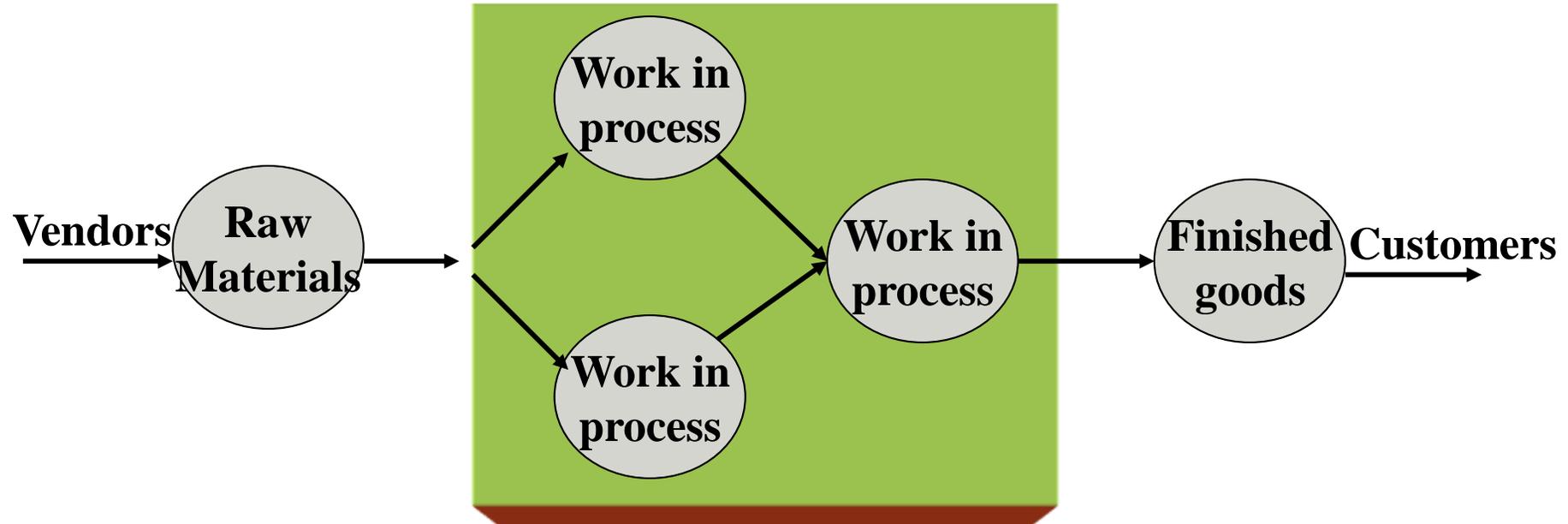
Types Of Inventory - Manufacturing Business



.....TYPES OF INVENTORY

- **Raw Materials** – Basic inputs that are converted into finished product through the manufacturing process.
- **Work-in-progress** – Semi-manufactured products that need some more work before they become finished goods for sale.
- **Finished Goods** – Completely manufactured products ready for sale.
- **Supplies** – Office and plant cleaning materials that do not directly enter production but are necessary for production process and do not involve significant investments.

TYPES OF INVENTORY...



Why does Inventory Management is Important?

At the macro level:

- Inventory is one of the biggest corporate assets.
 - Constitute significant part of cut assets.
 - Big Investment in Inventory



- Enormous potential for efficiency increase by controlling inventories

RELEVANCE: INVENTORY

- Constitute significant part of current assets.
- On an average, inventory forms approx. 60% of current assets in Public Limited Companies in India.
- Huge financial implications.
- Effective and efficient management is imperative to avoid unnecessary investment.
- Improper inventory management affects long term profitability and may cause failure ultimately.
- 10 to 20% of inventory can be reduced without any adverse effect on production and sales by using simple inventory planning and control techniques.

Benefits of Inventory

1. Hedge against uncertain demand
2. Hedge against uncertain supply
3. Economize on ordering costs
4. Smoothing

To summarize, we build and keep inventory in order to match supply and demand in the most cost effective way.

Motives of Holding Inventories

- 1. Transaction motive**
- 2. Precautionary motive**
- 3. Speculative motive**

Motives of Holding Inventories

Transactions Motive

- The transactions motive for holding inventory is to satisfy the expected level of activities of the firm. For example, a pizza restaurant receiving its next materials consignment on Monday starts the weekend with enough flour, salt, tomato sauce, sausage, and anchovies to make the number of pizzas anticipated to be ordered over the weekend.

Motives of Holding Inventories

Precautionary Motive

- The precautionary motive is to provide a cushion in case the actual level of activity is different than anticipated. Again, using a pizza restaurant as an example, in addition to holding enough inventory to make the expected number of pizzas over the weekend, the restaurant may hold additional supplies as a precaution against demand being different than anticipated.
- If demand exceed expectations (either in total or for a particular ingredient), sales will probably either be lost or, if made, less profitable. It is doubtful that many customers will accept a pie topped with anchovies and pineapple as a substitute simply because the restaurant has run out of sausage and pepperoni.

Motives of Holding Inventories

Speculative Motive

- The speculative motive for holding inventory might entice a firm to purchase a larger quantity of materials than normal in anticipation of making abnormal profits.
- Advance purchases of raw materials in inflationary times is one form of speculative behaviour.
- A second reason for speculative inventory purchases may involve an anticipated change in a product.

Why do we care?

At the firm level:

- **Sales growth**: right inventory at the right place at the right time
- **Cost reduction**: less money tied up in inventory, inventory management, obsolescence



Higher profit

Inventory Management

- Inventory management is concerned with keeping enough product on hand to avoid running out while at the same time maintaining a small enough inventory balance to allow for a reasonable return on investment.
- Proper inventory management is important to the financial health of the corporation; being out of stock forces customers to turn to competitors or results in a loss of sales.
- Excessive level of inventory, however, results in large inventory carrying costs, including the cost of the capital tied up in inventory warehouse fees, insurance etc.

Inventory Management

- ❑ The act or manner of managing, handling, directing or controlling the flow of inventory.
 - **NEED :-**
 - **Demand related:-**
 - Meet unexpected demands.
 - Smooth seasonal or cyclical demands.
 - **Pricing related:-**
 - Hedge against price increases.
 - Take advantage of quantity discounts.
 - **Process and supply surprises related:-**
 - Internal – upsets in parts of or our own processes.
 - External – delays in incoming goods.

Objectives of Inventory Management

1. Ensure a continuous supply of raw materials to facilitate uninterrupted production
2. Maintain sufficient stock of raw materials in periods of short supply and anticipate price changes
3. Maintain sufficient finished goods inventory for smooth sales operations and efficient customer service
4. Minimise the inventory costs
5. Control inventory investment by maintaining optimum inventory

Objectives of Inventory Management

- To maintain an optimum size of inventory for efficient and smooth production and sales operations.
- To maintain a minimum investment in inventories to maximize the profitability.
- Effort should be made to place an order at the **right time** with **right source** to acquire the **right quantity** at the **right price** and **right quality**.

Problem with Excessive Investment in Inventory

- Unnecessary tying down of firm's funds and loss of profit.
- Excessive carrying costs.
- Risk of liquidity- difficult to convert into cash.
- Physical deterioration of inventories while in storage due to mishandling and improper storage facilities.

Problem with Under-Investment in Inventory

- Production hold-ups – loss of labour hours.
- Failure to meet delivery commitments.
- Customers may shift to competitors which will amount to a permanent loss to the firm.
- May affect the goodwill and image of the firm.

IN A NUTSHELL

- Track inventory.
- How much to order?
- When to order?



- IF we know the value,
all these functions will
get addressed!!

Symptoms of Poor Inventory Management

- Increasing number of back orders
- Increasing inventory investment with no reduction in back orders
- High rate of customer turnover
- Increasing number of cancelled orders
- Frequent lack of storage space
- Deteriorating relationships with intermediaries
- Growing quantities of obsolete items

Steps to Reduce Inventory Levels

- Inventory planning
- Lead time analysis
- Delivery time analysis
- Low turnover / obsolete items elimination
- Pack size analysis
- Discount structure analysis
- Examination of procedures for returned goods
- Encouragement of product substitution
- Installation of formal re-order review systems
- Customer demand analysis
- Development of formal sales plan

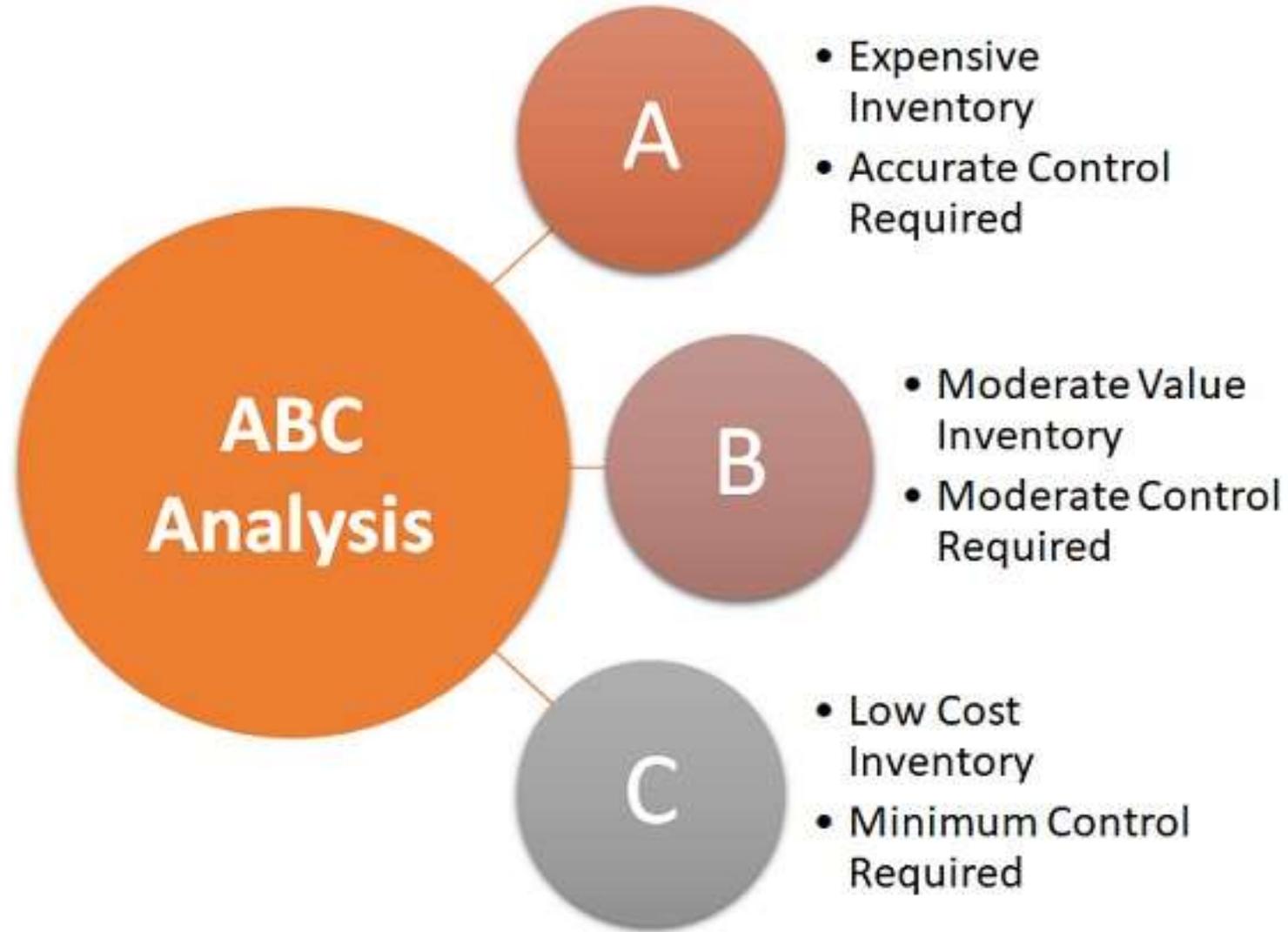
Inventory Management Techniques

1. ABC Classification (Value)
2. HML Classification (unit-value stored) (Hi, Medium, Low)
3. VED Classification (spare parts mainly) (Vital, Essential, Desirable)
4. FSN Classification (consumption) (Fast, Slow, Non)
5. SOS Classification (agriculture) (Seasonal, Off Season)
6. SDF Classification (availability) (Scarce, Difficult, Easy)
7. GOLF Classification (source of supply) Govt, Ordinarily available, Local and Foreign)

1. ABC Classification (Value)

- The ABC analysis suggests that inventories of an organization are not of equal value. Thus, the inventory is grouped into three categories (**A**, **B**, and **C**) in order of their Value.
- and good records, and "C items" with the simplest controls possible and minimal records.
- **Category 'A' items** are those items having high value and less volume, (Accounts for 70% - 80% of total value of inventories but constitute only 5-10% of the volume). An organization needs to manage these items very carefully with very tight control and accurate records.
- **Category 'B' items** are less valuable than Category 'A' items and Accounts for 15% - 20% of total value of inventories and constitute 20% of the volume. Therefore, "B items" with less tightly controlled
- **Category 'C' items** are those items having very less value and high volume, (Accounts for 5% - 10% of total value of inventories but constitute only 75-80% of the volume). Least focus is required to manage such items.

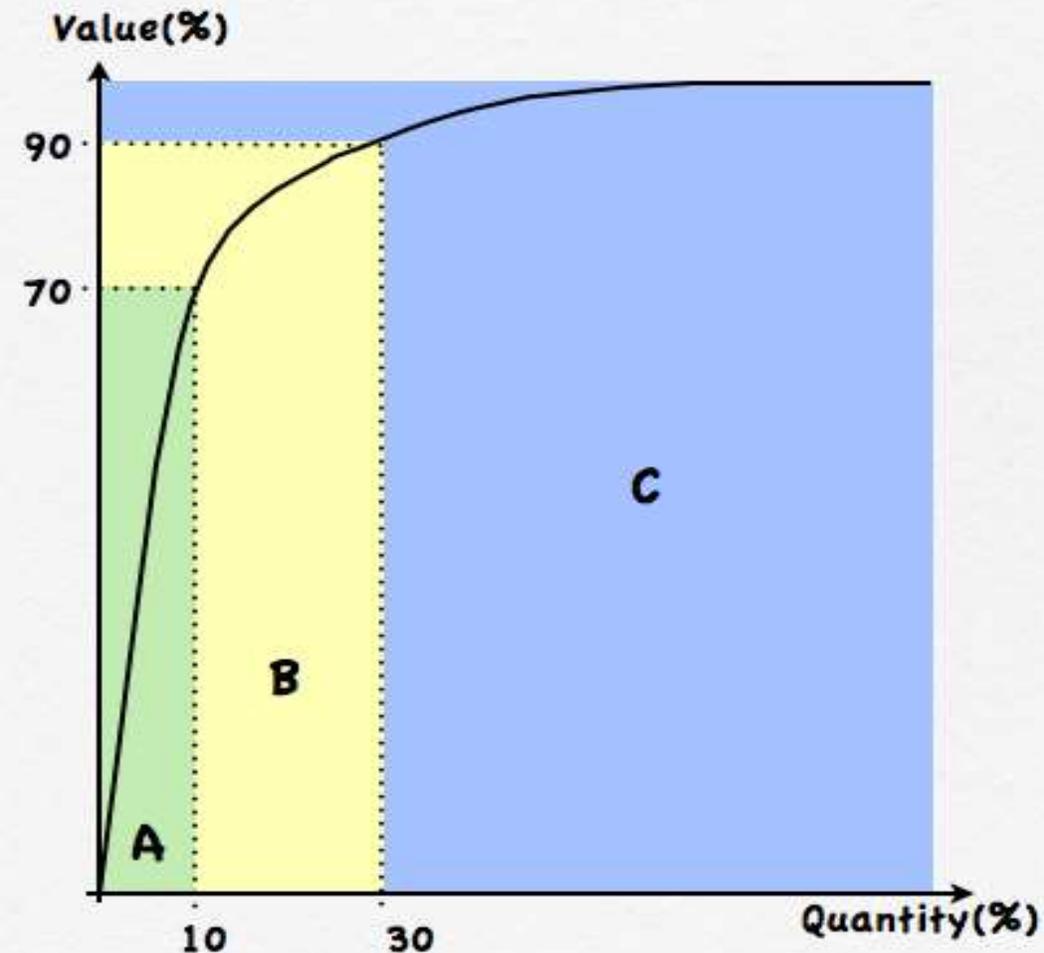
ABC Classification



ABC Analysis

- ✓ An inventory categorization technique used in materials management.
- ✓ Known as *Selective Inventory Control*.
- ✓ Based on the Pareto Analysis (80/20).
- ✓ ABC analysis based on user defined criteria.

Criteria	Class		
	A	B	C
Number of Items	10%	20%	70%
Value, \$	70%	20%	10%
Stock Control	Strict	Moderate	Loose
Delivery Cycle	Weekly	3 months	6 months
Control Report	Weekly	Monthly	Quarterly
Importance	High	Moderate	Low
Forecast	Accurate	Estimate	Roughly
Control Effort	Max	Moderate	Min
Sources	Max	> 2	2



Economic Order Quantity (EOQ)

Economic Order Quantity (EOQ)

- Economic order quantity (EOQ) is the ideal order quantity a company should purchase to minimize inventory costs such as holding costs, shortage costs, and order costs. This production-scheduling model was developed in 1913 by Ford W. Harris and has been refined over time.
- The formula assumes that demand, ordering, and holding costs all remain constant.
- The EOQ is a company's optimal order quantity that minimizes its total costs related to ordering, receiving, and holding inventory.

Inventory Carrying Costs

Carrying costs constitute all the costs of holding items in inventory for a given period of time. They are expressed either in rupees per unit per period or as a percentage of the inventory value per period. Components of this cost include the following:

1. Storage and handling costs

Storage and handling costs include the cost of warehouse space.

2. Obsolescence and deterioration costs

Inventories are valuable only if they can be sold. Obsolescence costs represent the decline in inventory value caused by technological or style changes that make the existing product less salable. Deterioration costs represent the decline in value caused by changes in the physical quality of the inventory, such as spoilage and breakage.

3. Insurance

Another element of carrying cost is the cost of insuring the inventory against losses due to theft, fire, and natural disaster.

4. Taxes

5. The cost of the funds invested in inventories.

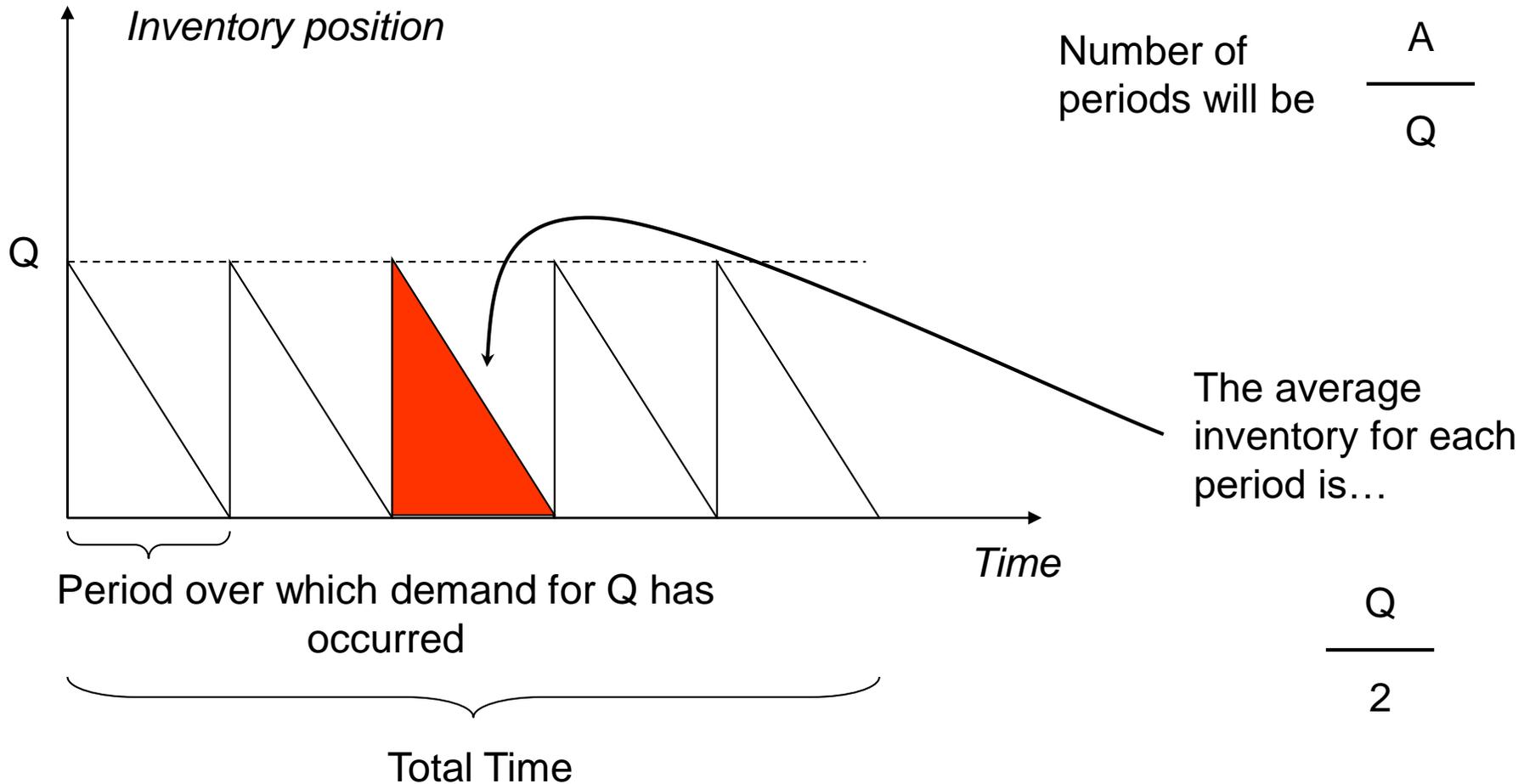
Inventory Ordering Costs

- Every time an order is placed for stock replenishment, certain costs are involved. The ordering cost may vary, dependent upon the type of items. This cost of ordering includes:
 - Paper work costs, typing and dispatching an order.
 - Follow-up costs – the follow-up required to ensure timely supplies include the travel cost for purchase follow-up, telephone, telex and postal bills.
 - Cost involved in receiving the order inspection, checking, and handling to the stores.
 - Any set up cost of machines if charged by the supplier, either directly indicated in quotations or assessed through quotations for various quantities.
 - The salaries and wages to the purchase department are relevant for consideration if the purchasing function is carried out at the same level with the existing staff. If the level of purchasing activity decreases significantly, obviously a proportional amount of personnel will be transferred to other departments.

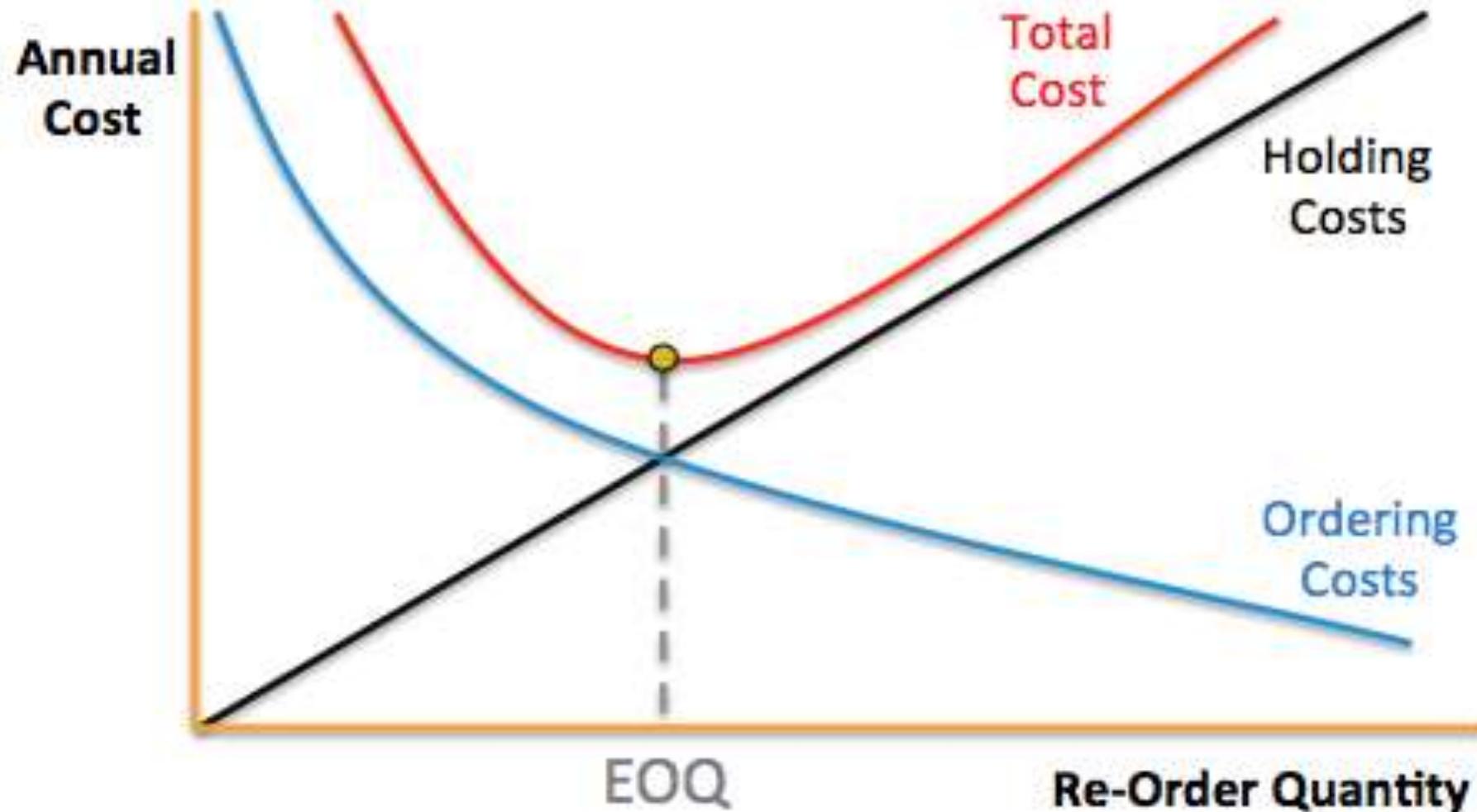
Inventory Management Techniques

EOQ : Finding the optimal quantity to order...

Let's say we decide to order in batches of Q...



There is a tradeoff between holding costs and ordering costs



Economic order quantity (EOQ)

- Ordering costs: requisitioning, order placing, transportation, receiving, inspecting and storing, administration
- Carrying costs: warehousing, handling, clerical and staff, insurance, depreciation and obsolescence
- Ordering and carrying costs trade-off:

$$\text{Economic Order Quantity (EOQ)} = \sqrt{\frac{2 \times \text{Annual Demand} \times \text{Ordering Cost}}{\text{Inventory Carry Cost per Unit per Year}}}$$

Economic order quantity (EOQ)

$$EOQ = \sqrt{\frac{2AO}{c}}$$

where:

A=Demand in units (typically on an annual basis)

O=Order cost (per purchase order)

c=Holding costs/ carrying cost (per unit, per year)

Economic Order Quantity - EOQ

Example:

Assume a car dealer that faces demand for 5,000 cars per year, and that it costs Rs. 15,000 to have the cars shipped to the dealership. Holding cost is estimated at Rs. 500 per car per year. How many times should the dealer order, and what should be the order size?

$$Q^* = \sqrt{\frac{2(15,000)(5,000)}{500}} = 548$$

Economic Order Quantity - EOQ

Example2 :

Annual Demand of Material = 2000 Units

Cost of placing an order = Rs. 20

Cost of Holding the inventory = Rs. 8 Per unit per year

Calculate EOQ

$$\text{EOQ} = \sqrt{\frac{2 \times 2000 \times 20}{8}} = 100 \text{ Units}$$

Economic Order Quantity - EOQ

Ex. 3 : Annual Req. 1200 Units per Year

Ordering Cost = 37.5

Inv. Carrying Cost = 1 per unit per year

Calculate EOQ

A= An. Req. = 1200

O = Ordering Cost = 37.5

c= Car. Cost = 1

$$EOQ = \sqrt{\frac{2AO}{c}} = \sqrt{\frac{2 \times 1200 \times 37.5}{1}} = \sqrt{90000}$$

EOQ = 300 Units

Economic Order Quantity - EOQ

Ex. 4 : Annual Req. 90000 Units per Year

Ordering Cost = 50

Inv. Carrying Cost = 100 per unit per year

Calculate EOQ

A= An. Req. = 90000

O = Ordering Cost = 50

c= Car. Cost = 100

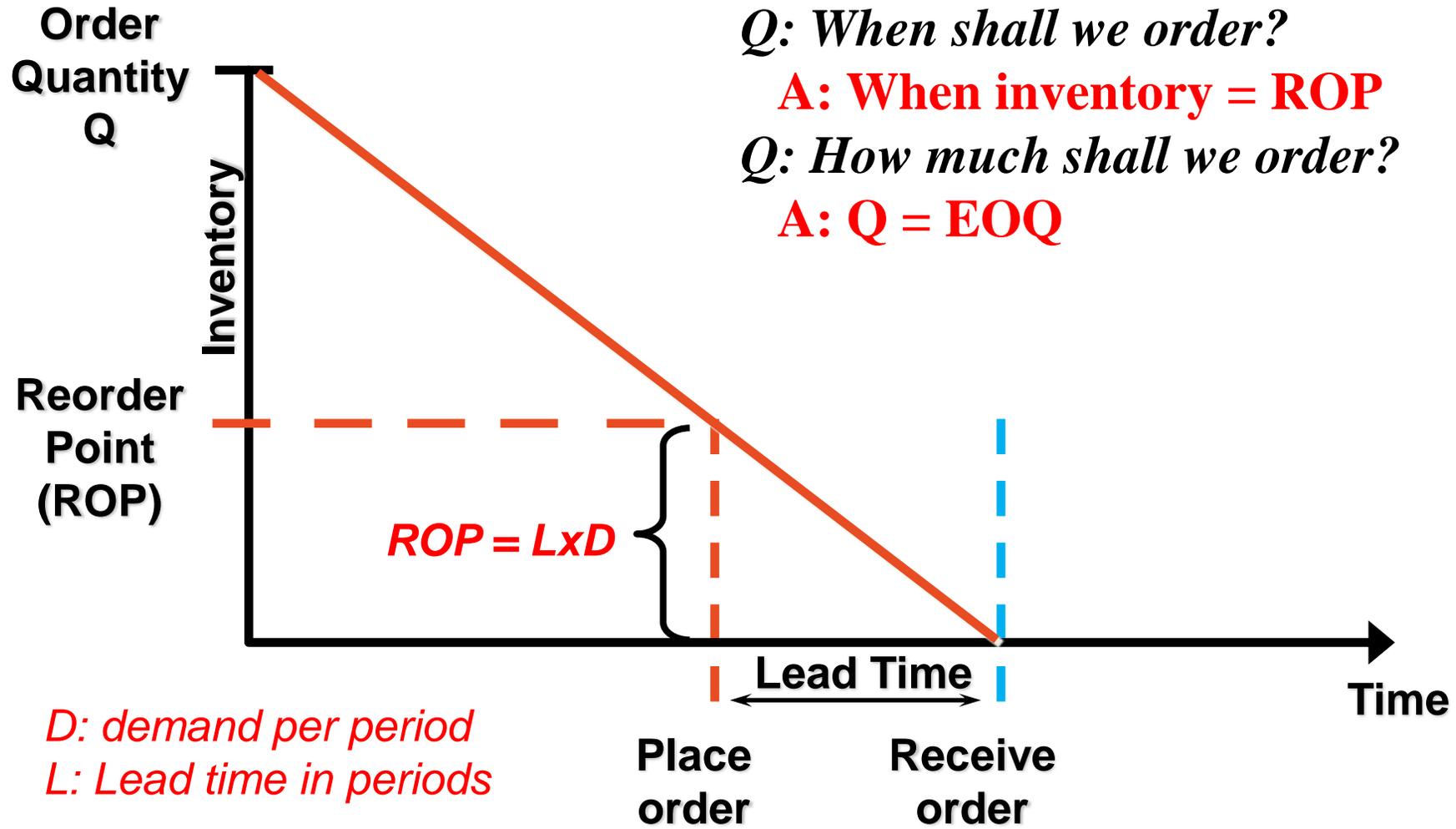
$$EOQ = \sqrt{\frac{2AO}{c}} = \sqrt{\frac{2 \times 90000 \times 50}{100}} = \sqrt{90000}$$

EOQ = 300 Units

Reorder Level

- Reorder Level (or Reorder Point) is the inventory level at which a company would place a new order.
- The reorder point is the level of inventory which triggers an action to replenish that particular inventory stock. It is a minimum amount of an item which a firm holds in stock, such that, when stock falls to this amount, the item must be reordered.
- **Reorder level** depends on a company's lead time and its demand of material during lead time .
- **Reorder point under certainty**
$$\text{Reorder point} = \text{Lead time} \times \text{average usage}$$
- **Reorder point under uncertainty**
$$\text{Reorder Point} = (\text{Lead time} \times \text{Average Usage}) + \text{Safety Stock}$$

If demand is known exactly, place an order when inventory equals demand during lead time.



Safety stock

- Safety stock is the additional inventory that is held by a company to mitigate risk of stockouts, caused by fluctuations in supply and demand.
- Safety stock is an additional quantity of an item held in the inventory to reduce the risk that the item will be out of stock. It acts as a buffer stock in case sales are greater than planned and/or the supplier is unable to deliver the additional units at the expected time.
- $\text{Safety stock} = (\text{Maximum daily usage} \times \text{Maximum lead time in days}) - (\text{Average daily usage} * \text{Average lead time in days}).$

Minimum Stock Level

- A **minimum stock level** is the **level** of an item of material, below which the actual **stock** should not normally be allowed to fall. In other words, it refers to the **minimum** quantity of a particular item of material that must be kept in the stores at all times.
- The fixation of this level acts as a safety measure and hence, it is also known as '**Safety Stock**' or '**Buffer Stock**'. In case the actual stock falls below this level, there is a danger of stoppage in production and the management has to give top priority to the acquisition of fresh supplies.

Reorder Level

- **Example 1:** ABC Ltd. is a retailer of footwear. It sells 500 units of one of a famous brand daily. Its supplier takes a week to deliver any ordered units.
- The inventory manager should place an order before the inventories drop below 3,500 units (500 units of daily usage multiplied with 7 days of lead time) in order to avoid a stock-out.

- **Example 2:** ABC Ltd. has decided to hold a safety stock equivalent to average usage of 5 days. Calculate the reorder level. **Safety stock** which ABC Ltd. has decided to hold equals 2,500 units (500 units of daily usage multiplied by 5 days).
- In this scenario, reorder level would be 6,000 units (2,500 of safety stock plus 3,500 units based on 7 days of lead time).

Emerging Trends in Inventory Management

- Entering into long term contracts at a fixed price to reduce uncertainties.
- Just-in-time.
- Kanbans – Japanese technique (Only produce when demand comes).
- Internet based ordering systems.
- Supply chain management.
- Vendor development.

Inventory Management Process

- Explicitly state the inventory policy
- Create an inventory monitoring cell
- Management group for controlling purchases
- Periodic meetings between purchase, materials planning and production executives
- Monthly reviews of total inventory at plant/corporate level
- Dovetail inventory control to the total budgeting system
- Identify critical inventory items for closer scrutiny

Just in Time (JIT)

- Normally, inventory costs are high and controlling inventory is complex because of uncertainties in supply, dispatching, transportation etc.
- Lack of coordination between suppliers and ordering firms is causing severe irregularities, ultimately the firm ends-up in inventory problems.
- Toyota Motors has first time suggested just – in – time approach in 1950s. This means the material will reach the points of production process directly from the suppliers as per the time schedule. It is possible in the case of companies with respective process.
- Since, it requires close coordination between suppliers and the ordering firms, and therefore, only units with systematic approach will be able to implement it

Management Cash

Cash

- Cash is a medium of exchange to purchase the goods and services and to discharge the liabilities.
- In business enterprise, it includes cash in hand, cash at bank, and ready marketable securities.

Nature of Cash

Cash, the most important current assets, have the following characteristics:

1. Money is necessary for efficient working of the organization.
2. Cash will be accepted without hesitation by any one as it is the most liquid asset.
3. Cash is not available in abundance like air but is significant for economic development.
4. Cash/capital in itself is unproductive until unless human beings apply their head and hand.

Factors Determining Level of Cash

1. If **credit policy** of an organization is liberal more cash will be required and vice versa.
2. Organizations working on large **scale**, would have to keep the higher cash level.
3. In case of long **production cycle** the level of cash is likely to be high and vice-versa.
4. A firm which is managing proper **relations with banks**, needs to carry less cash reserves to meet unpredicted cash outflow.

Advantages of Ample Cash-

1. Helps in maintaining goodwill and reputation of a business firm by obeying all the obligations and meets the payments as and when they mature.
2. If a firm has sufficient cash, it can avail cash discounts offered by the suppliers.
3. Commercial banks like to maintain good relations with such firm, having high liquidity in funds.
4. Firms having good cash position can take risk of entering into new ventures.
5. Firms having good cash position can maintain a sound dividend policy.
6. The decision to expand the business, the decision to add any new product in the product line of the company all are decided by the cash position of the firm.

Cash Management

- cash management assumes more importance than other current assets because cash is the most significant and the least productive asset.
- Idle cash produces nothing.
- Therefore, the aim of cash management may be said to maintain adequate cash position at one hand and to use excess cash in some profitable way on the other hand.

Cash Management

Cash management is concerned with three things:

- (a) Managing cash flows into and out of the firm,
- (b) Managing cash flows within the firm, and
- (c) Financing deficit or investing surplus cash

Four Facets of Cash Management

- 1. Cash planning***
- 2. Managing the cash flows***
- 3. Optimum cash level***
- 4. Investing surplus cash***

Four Facets of Cash Management

- 1. Cash Planning :** Cash planning involves the planning of cash inflows and outflows in order to project surplus or deficit of cash for each planning period. Cash budget is the most useful tool in this respect.
- 2. Managing the Cash flows:** Second aspect of cash management is managing the cash flows. The inflows of cash should be accelerated, while, as far as possible, the outflows of cash should be decelerated. Cash flow statements is a major tool of controlling cash flows.
- 3. Managing Optimum Cash Balance :** The firm should decide about the appropriate level of cash balance also. The cost of excess cash and danger of cash deficiency should be matched to determine the optimum level of cash balances.
- 4. Investing Idle Cash :** If the cash forecast shows surplus of cash, the idle cash balances should be properly invested in short term investments to earn profits.

Motives for Holding Cash

1. Transaction Motive for Holding Cash

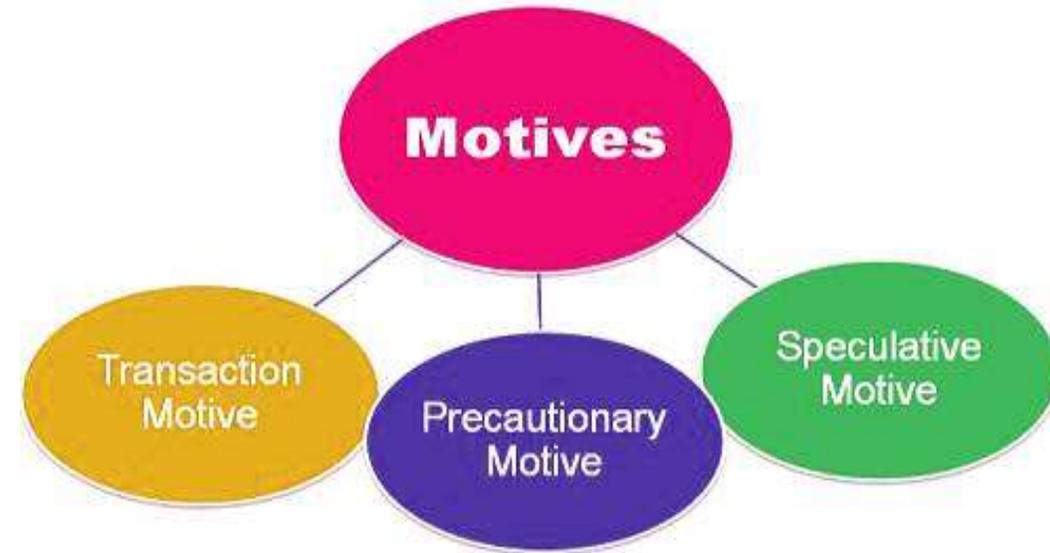
A firm needs cash to make payments for acquisition of resources and services for the normal conduct of business.

2. Precautionary Motive for Holding Cash

A firm keeps additional funds to meet any emergency situation.

3. Speculative Motive for Holding Cash

Some firms may also maintain cash for taking advantages of speculative changes in prices of input and output.



Cash Planning

- **Cash planning is a technique to plan and control the use of cash.**
- **Cash Forecasting and Budgeting**
 - Cash budget is the most significant device to plan for and control cash receipts and payments.
 - Cash forecasts are needed to prepare cash budgets.

Short-term Cash Forecasts

- *The important functions of short-term cash forecasts*
 - To determine operating cash requirements
 - To anticipate short-term financing
 - To manage investment of surplus cash.
- *Short-term Forecasting Methods*
 - The receipt and disbursements method
 - The adjusted net income method.

Tools of Cash Planning

(i) Net Cash Forecast

(ii) Cash Budget

(iii) Forecasting the Over-all Working Capital Position.

Tools of Cash Control

- (i) Cash Budgets
- (ii) Cash Flow Statements
- (iii) Cash Reports
- (iv) Cash Ratios
- (v) Cash Management Models

Cash Budget

- The Cash budget is an estimate of cash receipts and disbursement for a future period of time.
- It shows the comparative estimates of expected cash receipts and cash payments and the periodical cash position either in the form of cash surplus or deficiency.
- A cash budget is usually prepared for a short period like one year, one quarter or one month.

Functions of Cash Budget

- It is possible to determine in advance, how much funds will be needed and when.
- The various expenses of departments can be best controlled so as not exceed the means of business.
- It acts as a standard for evaluating the performance of operations.
- It assists in maintaining a sound dividend policy consistent with the liquid position of the firm.

Cash Cycle

The amount of time that elapses from the point, when the firm makes an outlay of purchase of raw materials, to the point when cash is collected from the sale of the finished goods produced.

It takes the following sequence.

- Conversion of cash into raw materials.
- Conversion of raw materials into work-in-process.
- Conversion of work-in-process into finished goods.
- Conversion of finished goods into debtors and bills receivables.
- Conversion of debtors and bills receivables into cash.

The Receipt and Disbursements Method

- **The virtues of the receipt and payment methods are:**
It gives a complete picture of all the items of expected cash flows.
It is a sound tool of managing daily cash operations.
- **This method, however, suffers from the following limitations:**
Its reliability is reduced because of the uncertainty of cash forecasts. For example, collections may be delayed, or unanticipated demands may cause large disbursements.
It fails to highlight the significant movements in the working capital items.

The Adjusted Net Income Method

- **The benefits of the adjusted net income method are:**

It highlights the movements in the working capital items, and thus helps to keep a control on a firm's working capital.

It helps in anticipating a firm's financial requirements.

- **The major limitation of this method is:**

It fails to trace cash flows, and therefore, its utility in controlling daily cash operations is limited.

Long-term Cash Forecasting

- **The major uses of the long-term cash forecasts are:**

It indicates a company's future financial needs, especially for its working capital requirements.

It helps to evaluate proposed capital projects. It pinpoints the cash required to finance these projects as well as the cash to be generated by the company to support them.

It helps to improve corporate planning. Long-term cash forecasts compel each division to plan for the future and to formulate projects carefully.

Monitoring Collection and Disbursements

To enhance the efficiency of cash management, collections and disbursements must be properly monitored. In this respect, the following are to be kept in mind:

- **Prompt Billing**
- **Expeditious Collection of Cheques-**
- **Control of Payables:**
 - 1- Payments should be made only as and when they fall due.
 - 2- Payables and their disbursement may be centralized and
 - 3- Arrangements maybe made with suppliers to set due dates of their bills to match with company's period of peak receipts.

Managing Cash Collections and Disbursements

- **Accelerating Cash Collections**
 - *Decentralised Collections*
 - *Lock-box System*
- ***Controlling Disbursements***
 - *Disbursement or Payment Float*

Investing Surplus Cash in Marketable Securities

- **Selecting Investment Opportunities:**
 - *safety,*
 - *Maturity, and*
 - *marketability.*

Receivables Management

Receivable Management

- Receivable management refers to the decisions a business makes regarding its overall credit and collection policies and the evaluation of individual credit applications.

Trade Credit : Introduction

- Trade credit arises when a firm sells its products or services on credit and does not receive cash immediately.
- It is an essential marketing tool.
- A firm grants trade credit to protect its sales from the competitors and to attract the potential customers to buy its products at favourable terms.
- Trade credit creates accounts receivable or trade debtors (book debts) that the firm is expected to collect in the near future.
- The customers from whom receivable or book debts have to be collected in the future are called trade debtors or simply as debtors.

A credit sale has three characteristics:

1. It involves an **element of risk** that should be carefully analysed. Cash sales are totally riskless, but not the credit sales as the cash payment are yet to be received.
2. It is based on **economic value**. To the buyer, the economic value in goods or services passes immediately at the time of sale, while the seller expects an equivalent value to be received later on.
3. It implies **futurity**. The buyer will make the cash payment for goods or services received by him in a future period.

Cost – Benefit of Granting Credit

Cost of granting credit

- Collection cost
- Administrative cost
- Capital cost
- Delinquency cost (Overdue)
- Cost of Default by Customers

Benefits of granting credit

- Increase in Sales
- Increase in Profit
- Protect from competition

Why do Companies in India Grant Credit

1. Competition
2. Company's Bargaining Power
3. Buyer's Requirement
4. Buyer's Status
5. Relationship with Dealers
6. Marketing tool
7. Industry Practice

Investment in receivable

Investment in receivable Depends on

- a) Volume of credit sales
- b) Collection period

Firm's Average Investment in Accounts Receivable = Daily Credit Sale x Average
Collection Period

Investment in receivable

Average Sale of a company is Rs. 20000 Per day

The Company makes 100% of its sale on credit basis.

The company offers 25 days of credit to its customers

Calculate companies investment in receivables.

$$20000 \times 25 = 500000$$

Investment in receivable

The average sale of a company is 40000 rupees per day. 80% of the sale is on credit basis. The company's average collection period is 45 days. Calculate company's investment in accounts receivables.

Firm's Average Investment in Accounts Receivable = Daily Credit Sale x Average
Collection Period

$$= (80\% \text{ of } 40000) \times 45$$

$$= (.8 \times 40000) \times 45$$

$$= 32000 \times 45$$

$$= 1440000$$

Receivables Management

1. Credit Policy
2. Credit Evaluation
3. Credit Control

Credit Policy

- A firm's credit policy provides the guidelines for determining whether to extend credit to customer and how much credit to extend.
- A credit policy may be lenient or tight.

Credit Policy

The term credit policy is used to refer to the combination of three decision variables:

1. Credit standards

Are criteria to decide the types of customers to whom goods could be sold on credit. If a firm has more slow-paying customers, its investment in accounts receivable will increase. The firm will also be exposed to higher risk of default.

2. Credit terms

Specify duration of credit and terms of payment by customers. Investment in accounts receivable will be high if customers are allowed extended time period for making payments.

3. Collection efforts

Determine the actual collection period the lower the collection period, the lower the investment in accounts receivable and vice versa.

Credit Policy

- The financial manager can influence volume of credit sales and collection period through credit policy.
- The incremental return that a firm may gain by changing its credit policy should be compared with the cost of funds invested in receivables.
- The firm's credit policy will be considered optimum at the point where incremental rate of return equals the cost of funds.

Goals of Credit Policy

- **Marketing tool**
- **Maximisation of sales Vs. incremental profit**
 - production and selling costs
 - administration costs
 - bad-debt losses

Types of Credit Policies

Tight : the collection policy would be tight if very vigorous procedures are followed.

- A tight collection policy has both types of implication benefits as well as cost. The management has to consider the trade-off between them. The bad debt expenses would decline and average collection period will be reduced. Therefore the profit of the firm will increase. There may be decline in sales volume because some consumer may not like the pressure and switch to another one.
- **Lenient** : a lenient collection effort also affect the cost benefits trade off. The effect of lenient policy will be just the opposite of the tight policy.

Credit Standards

- Credit Standards are :

criteria to decide to whom credit sales can be made and how much.

- If the firm has soft standards and sells to almost all customers, its sales may increase but its costs in the form of bad-debt losses and credit administration will also increase.
- Therefore, the firm will have to consider the impact in terms of increase in profits and increase in costs of a change in credit standards or any other policy variable.

Credit Terms:

- The conditions for extending credit sales are called credit terms.
- Credit Terms include the **credit period** and **cash discount**.

Cash Discounts :

Cash Discounts are given for receiving payments before than the normal credit period.

FACTORS AFFECTING CREDIT TERMS

1. Market Share and Industry Structure / Competition

- Meet terms of competition. Less need to do so when the seller has large market share or prices its output measurably lower competition.
- Offer longer terms in buyer's market.

2. Operating cycle

- Terms should match length of time for customer to process material, sell it, and collect funds from sale.

3. Type of good

- Raw material sold to manufacturers on shorter terms than intermediate of finished goods.
- Terms generally would not exceed sum of manufacturing time storage time.

FACTORS AFFECTING CREDIT TERMS

4. Perishability

- Short shelf life is associated with rapid turnover and short selling terms.
- Canned goods and processed food products, with a longer period, have longer terms (can be stocked in larger quantities by retailer).

5. Seasonality of demand

- When demand is seasonal, longer terms are given during the season, as compared to the active sales period.
- Supplier trades off financing costs related to these terms with the even production this policy allows and the lower storage costs the off season.

6. Consumer acceptance

More rapidly selling products accorded shorter terms, because rapid turnover.

FACTORS AFFECTING CREDIT TERMS

7. Cost and pricing

More expensive items, such as diamonds and jewelry, given 4-6 months terms; relatively inexpensive items, such as drug items, shorter terms.

8. Customer type

Same product has different terms depending on whether customer is a retailer, wholesale jobber, or institutional buyer.

9. Profitability

Higher profit margins allow for longer terms. Competition prevent depressed, yielding negligible profits or even losses.

Credit Evaluation of Customers

Evaluation of creditworthiness of a customer is a two step procedure:

1. Obtaining credit information

- a) Financial statements
- b) Bank reference
- c) Trade reference
- d) Credit bureau reports / Credit Scores

2. Analysis of credit information

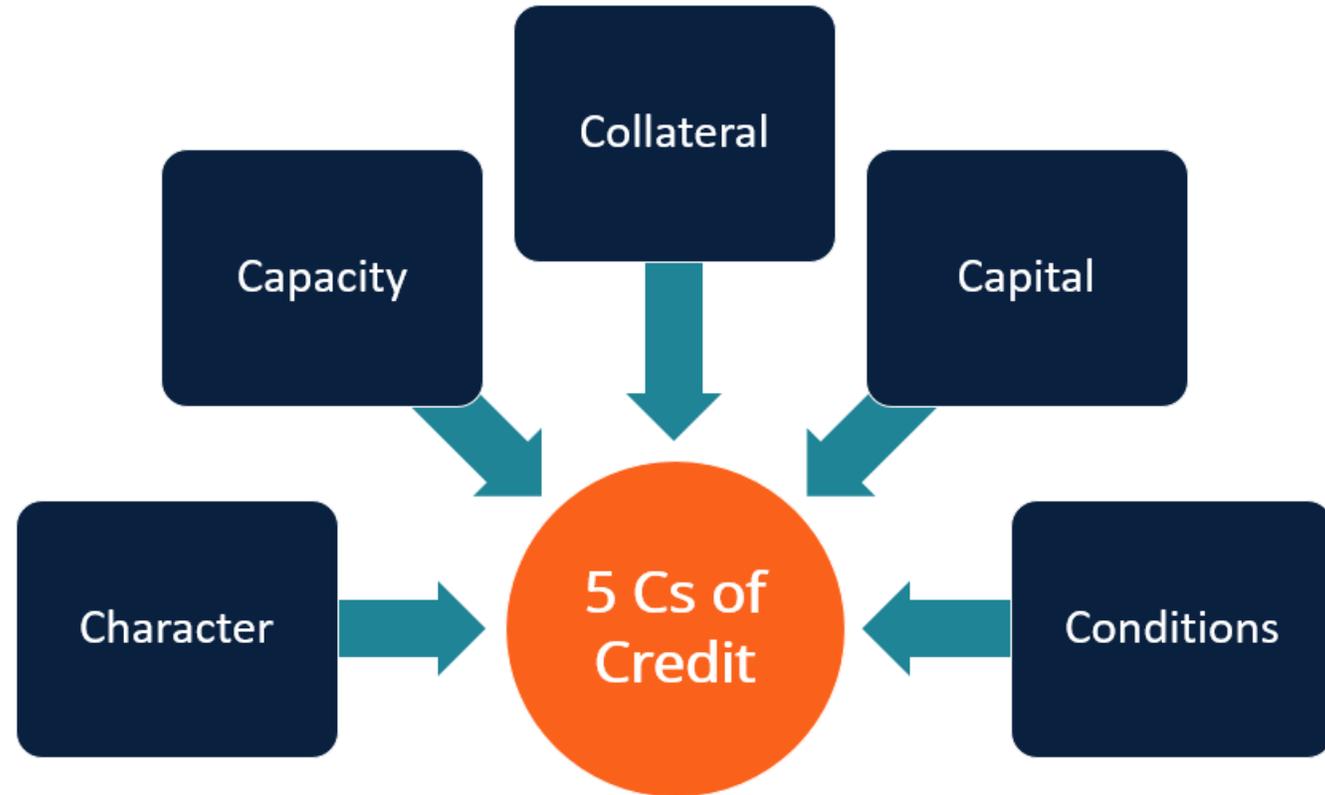
- Quantitative aspects
- Qualitative aspects

Credit Evaluation of Customers

- **Credit investigation and analysis**
 - analysis of credit file
 - financial analysis
 - analysis of business and management
- **Credit limit**
- A credit limit is a maximum amount of credit which the firm will extend at a point of time. It indicates the extent of risk taken by the firm by supplying goods in credit to a customer.
- **Collection efforts**

Consider 5 Cs of Credit Before Granting Credit

1. Character
2. Capacity
3. Condition
4. Capital
5. Collateral



Monitoring Receivable

After the collection period is over and payment remain due, the firm should take measures to collect them.

Following steps may be taken in this connection.

- Letter to expedite payment
- Telephone call
- Personal visit
- Help of collection agencies
- Legal action

Monitoring Receivables

– Customer Categories

- Good Accounts
- Marginal Accounts
- Bad Accounts

– Numerical Credit Scoring

Collection policy and procedures

- regularity of collections
- clarity of collection procedures
- responsibility for collection and follow-up
- case-by-case approach
- cash discount for prompt payment

Monitoring Receivable

- **Collection period**
- **Aging schedule**
- **Collection experience matrix**

Collection Methods

- Centralised / Decentralised collection system
- Post – dated cheques
- Pay Orders / Bank drafts
- Lock – box System
- Drop – box System
- Factoring
- Collection staff/ agents
- Debt collector

Lock Box System

- **Under a lock box system**, customers are advised to mail their payments to special post office boxes called lockboxes, which are attended to by local collection banks, instead of sending them to corporate headquarters. Thus the lock box system:
 - (i) cuts down the mailing time, because Cheques are received at a nearby post office instead of at corporate headquarters,
 - (ii) reduces the processing time because the company does not have to open the envelopes and deposit the Cheques for collection, and
 - (iii) shortens the availability delay because the Cheques are typically drawn on local banks

Optimum Credit Policy

- Optimum credit policy is one which maximizes the firm's value.
- The value of the firm is maximized when the incremental or marginal rate of return of an investment is equal to the incremental or marginal cost of funds used to finance the investment.
- The incremental rate of return can be calculated as incremental operating profit divided by the incremental investment in receivable.

Factoring

- Factoring is a financial service designed to help firms to arrange their receivable better. Under a typical factoring arrangement a factor collects the accounts on due dates, effects payments to the firm on these dates and also assumes the credit risks associated with the collection of the accounts.
- Sometimes the factor provides an advance against the values of receivable taken over by it. In such cases factoring serves as a source of short-term finance for the firm.
- For providing their services, they charge interest on advance and commission for other services.

Services Offered by Factor Organisation

In addition to purchasing the receivables, the factor firm may provide the following additional services:

- (a) Raising funds on the security of the receivables,
- (b) Receivables collection management, and
- (c) Protection against defaults by the receivables.

It may be noted that a firm need not avail all these services from the factor and the agreement between the selling firm and the factor firm may be a tailor made to suit the

FUNCTIONS OF A FACTOR

In nutshell, the functions of a factor may be described as :

- credit investigation,
- credit administration,
- credit monitoring,
- credit collection,
- credit protection and
- credit financing.

BENEFITS OF FACTORING

- 1. Better Cash flows**
- 2. Better Assets Management**
- 3. Better Working Capital Management**
- 4. Better Administration**
- 5. Better Evaluation**
- 6. Better Risk Management**

Short-term Investment Opportunities:

1. *Treasury bills*
2. *Commercial papers*
3. *Certificates of deposits*
4. *Bank deposits*
5. *Inter-corporate deposits*
6. *Money market mutual funds*

Bank Finance for Working Capital

4. Letter of Credit (LC)

- A letter of credit is the guarantee provided by the buyer's banker to the seller that in the case of default or failure of the buyer, the bank shall make the payment to the seller.
- The bank opens letter of credit in favour of a customer to facilitate his purchase of goods. This arrangement passes the risk of the supplier to the bank.
- The customer pays bank charges for this facility to the bank.

Bank Finance for Working Capital

5. Working Capital Loan

- A borrower may sometimes require ad hoc or temporary accommodation in excess of sanctioned credit limit to meet unforeseen contingencies.
- Banks provide such accommodation through a demand loan account or a separate 'non-operable' cash credit account