FN201: Lecture Note 3

Working Capital Management

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Firm’s Capital

- Net Working Capital

  = Current Assets – Current Liabilities

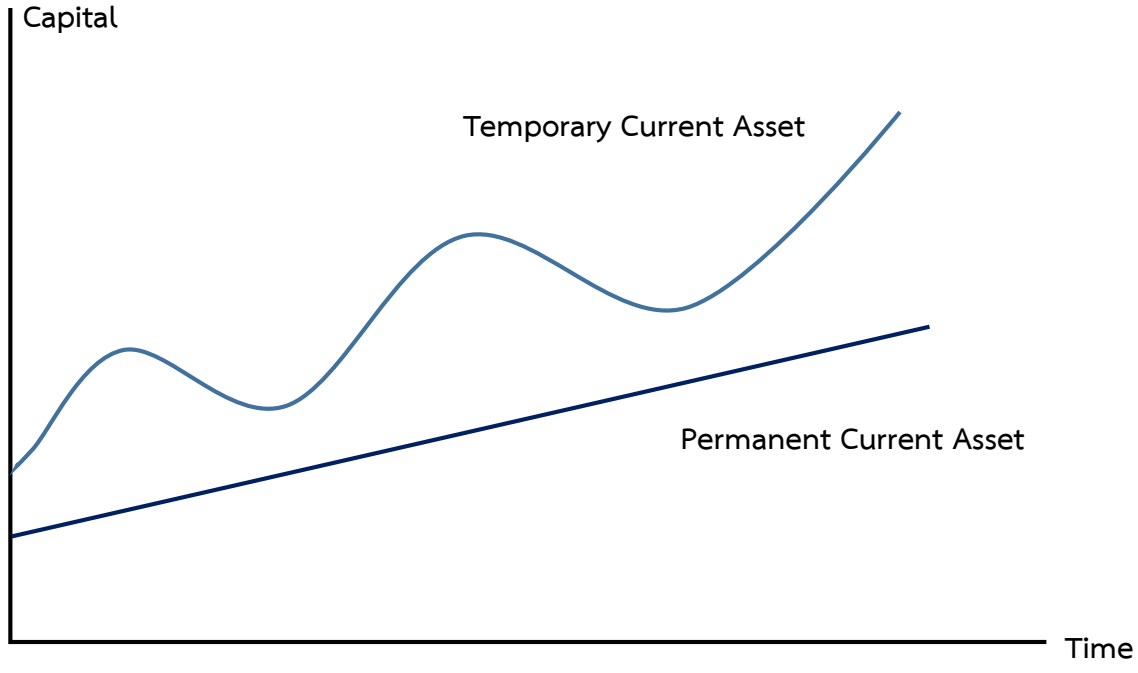
- Net Operating Capital

  = Net Working Capital + Fixed Assets

  = Total Assets – Current Liabilities

Current Asset Management

Current Assets



Current Asset Investment Policy

1. Conservative / Relax policy

   = high investment

2. Moderate policy

   = as necessary

3. Aggressive policy

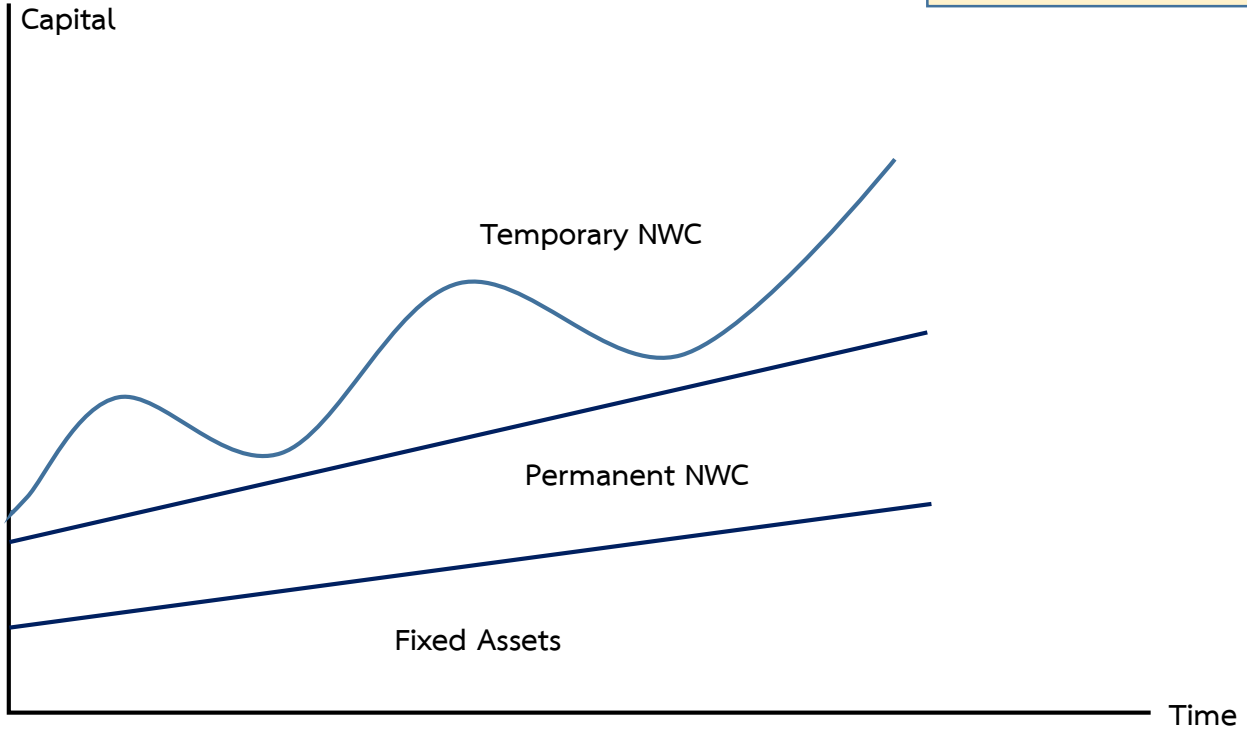
   = Low investment

Ratio	Policy	Liquidity	Risk	Profitability (ROA)
	1. Relax			
	2. Moderate			
	3. Aggressive			

Current Asset Financing Policy

Net Working Capital = CA - CL

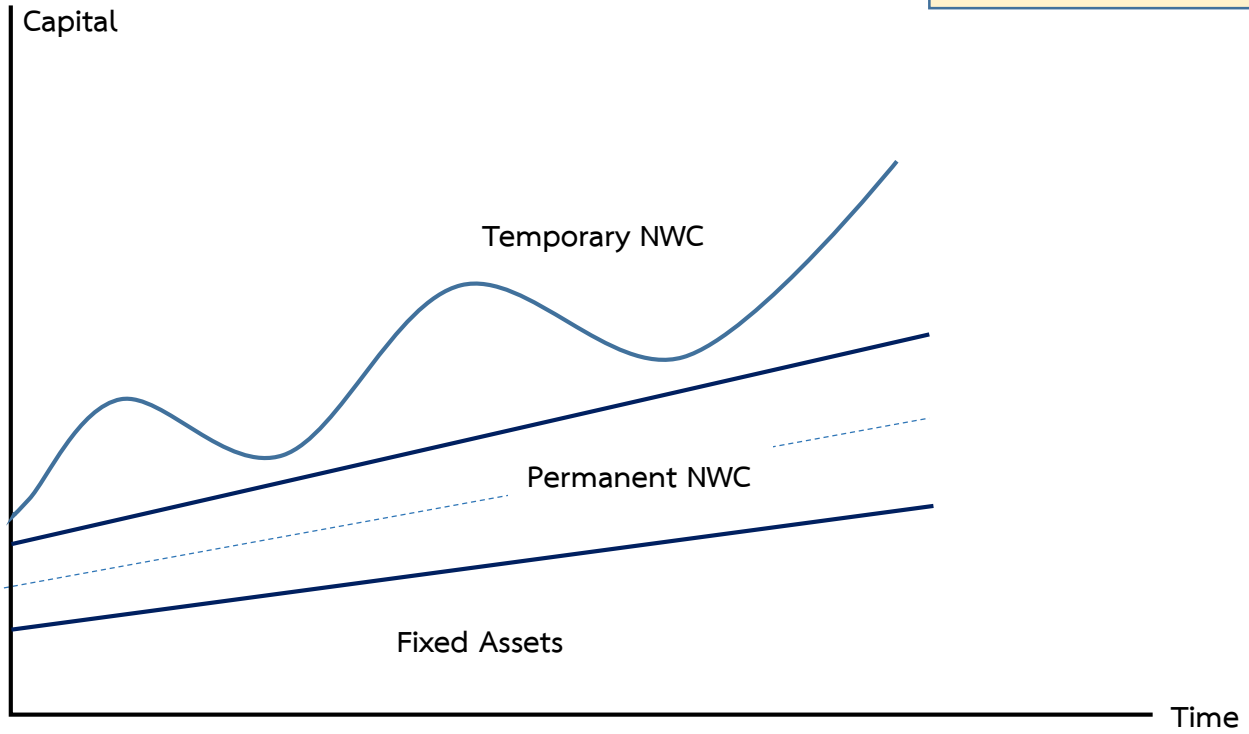
1. Self-Liquidating Financing Approach / Maturity Matching



Current Asset Financing Policy

Net Working Capital = CA - CL

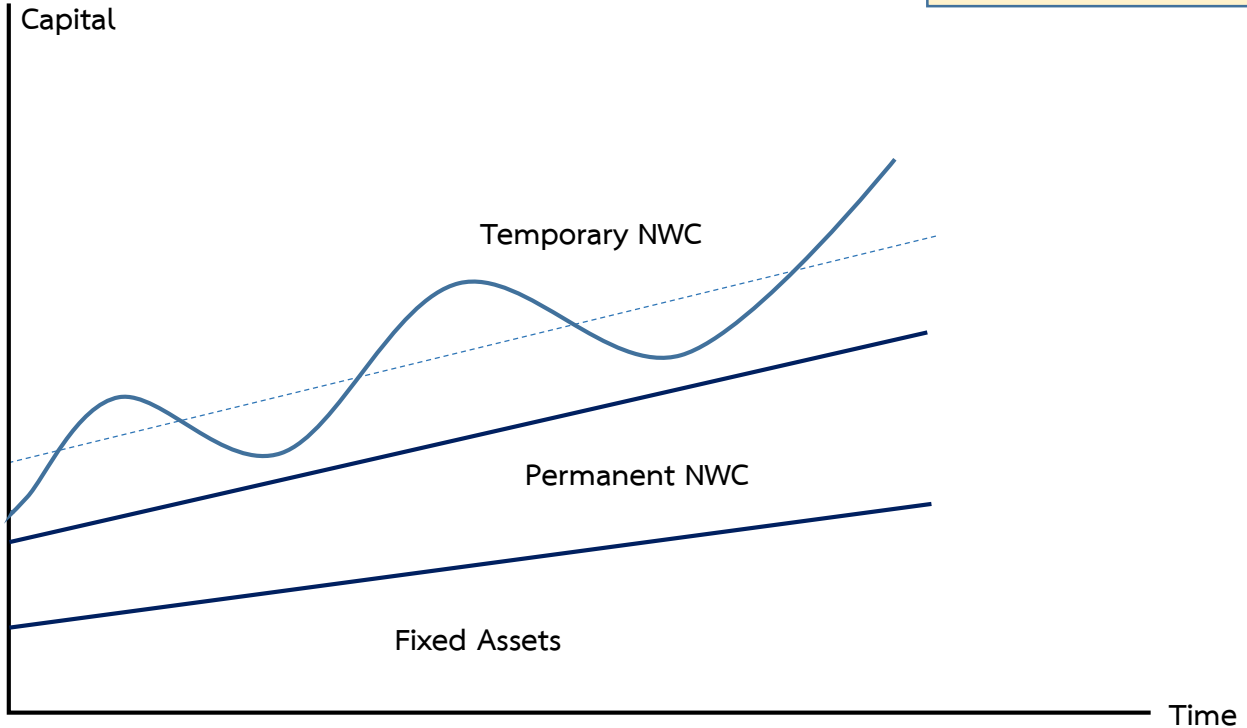
2. Aggressive Financing Approach



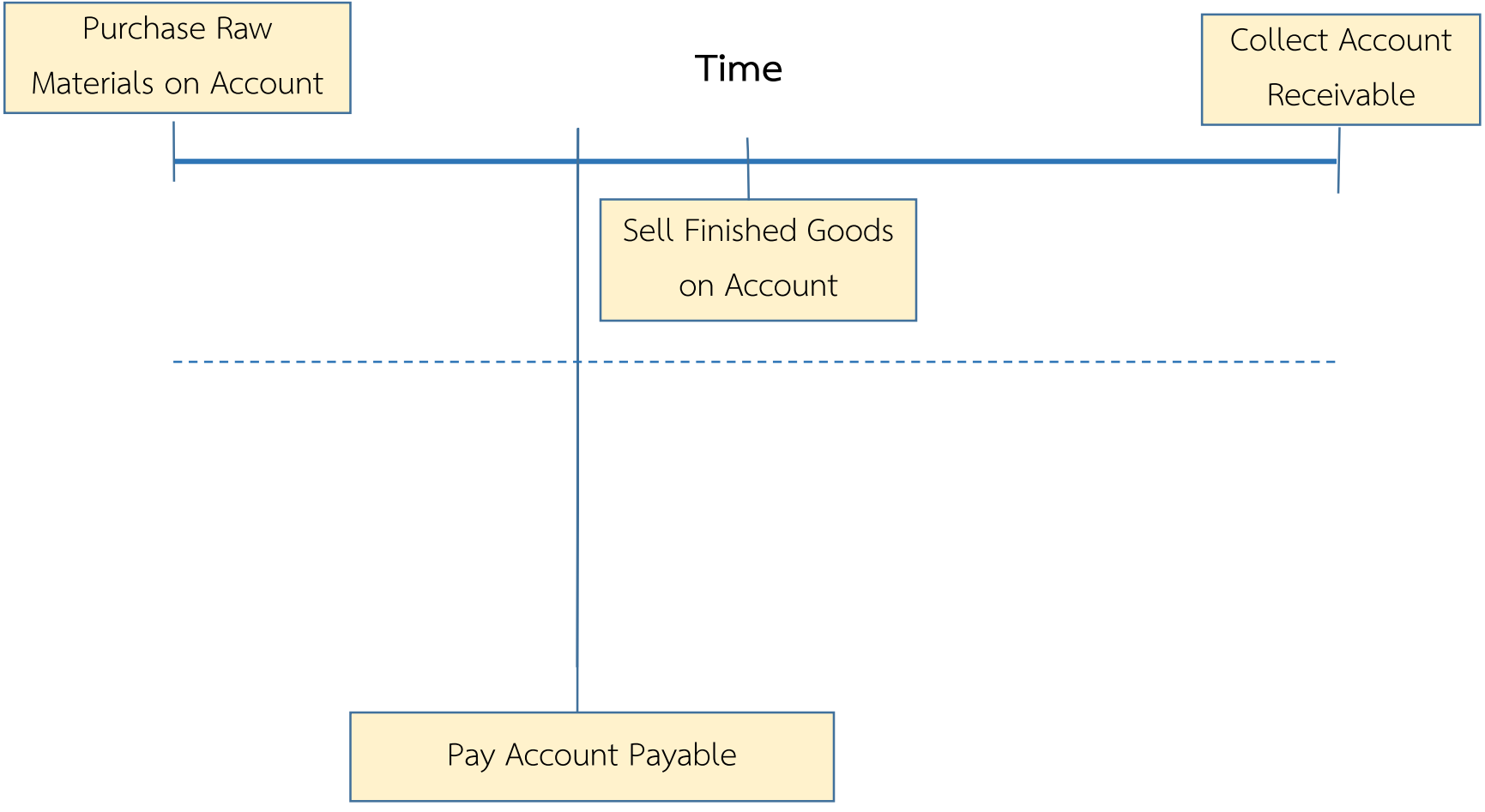
Current Asset Financing Policy

Net Working Capital = CA - CL

3. Conservative Financing Approach



Cash Cycle / Cash Conversion Period



Cash Management

Cash tied up in the operation of firm (1)

Income Statement Data	
	Year Ending, First Quarter 1999
Sales	$3,968
Cost of goods sold	3,518

Balance Sheet Data		
	End of First Quarter 1998	End of First Quarter 1999
Inventory	$470	$468
Accounts receivable	471	481
Accounts payable	304	303

Cash Management

Cash tied up in the operation of firm (1)

a. Suppose that each year the company spends total cash for overall operations at $5,475 billion. How much minimum cash does the company need to have?

b. Suppose United States manufacturers are able to reduce inventory levels to a year average value of $250 billion and average accounts receivable to $300 billion. By how many days will this reduce the cash conversion cycle?

c. Suppose that with the same level of inventories, accounts receivable, and accounts payable, United States manufacturers can increase production and sales by 10 percent. What will be the effect on the cash conversion cycle?

Cash Management

Cash tied up in the operation of firm (2)

MAX Company, a producer of paper dinnerware, has annual sales $10 million and a cost of goods sold of 75% of sales. MAX has an average age of inventory of 60 days, an average collection period 40 days, and an average payment period of 35 days.

Find - Cash that MAX needs to use in cash conversion cycle

- If MAX could reduce average collection period by 5 days

Cash Planning

Cash budget (cash forecast)

= a statement of the firm's planned inflows and outflows of cash that is used to estimate its short-term cash requirements

Sales and expenditure forecast

- cash
- credit collection

Cash Planning

Cash budget preparing

	Jan.		Feb.		. . .		Nov.		Dec.
Cash receipts	$XXX		$XXG				$XXM		$XXT
Less: Cash disbursements	XXA		XXH		. . .		XXN		XXU
Net cash flow	$XXB		$XXI				$XXO		$XXV
Add: Beginning cash	XXC	→	XXD	→	XXJ	→	XXP	→	XXQ
Ending cash	$XXD		$XXJ				$XXQ		$XXW
Less: Minimum cash balance	XXE		XXK		. . .		XXR		XXY
Required total financing			$XXL				$XXS		
Excess cash balance	$XXF								$XXZ

Account Receivable Management

Credit Policy

1. Credit standard (5 C’s)

   “character, capacity, capital, collateral, condition”

2. Credit period
3. Cash discount
4. Collection policy

Account Receivable Management

Credit terms

1. Cash discount period – i.e. 2/10
2. Credit period – i.e. net 45, net 45 EOM
3. Seasonal dating – i.e. net 90, Oct. 1

   2/30, net 60, Nov. 1

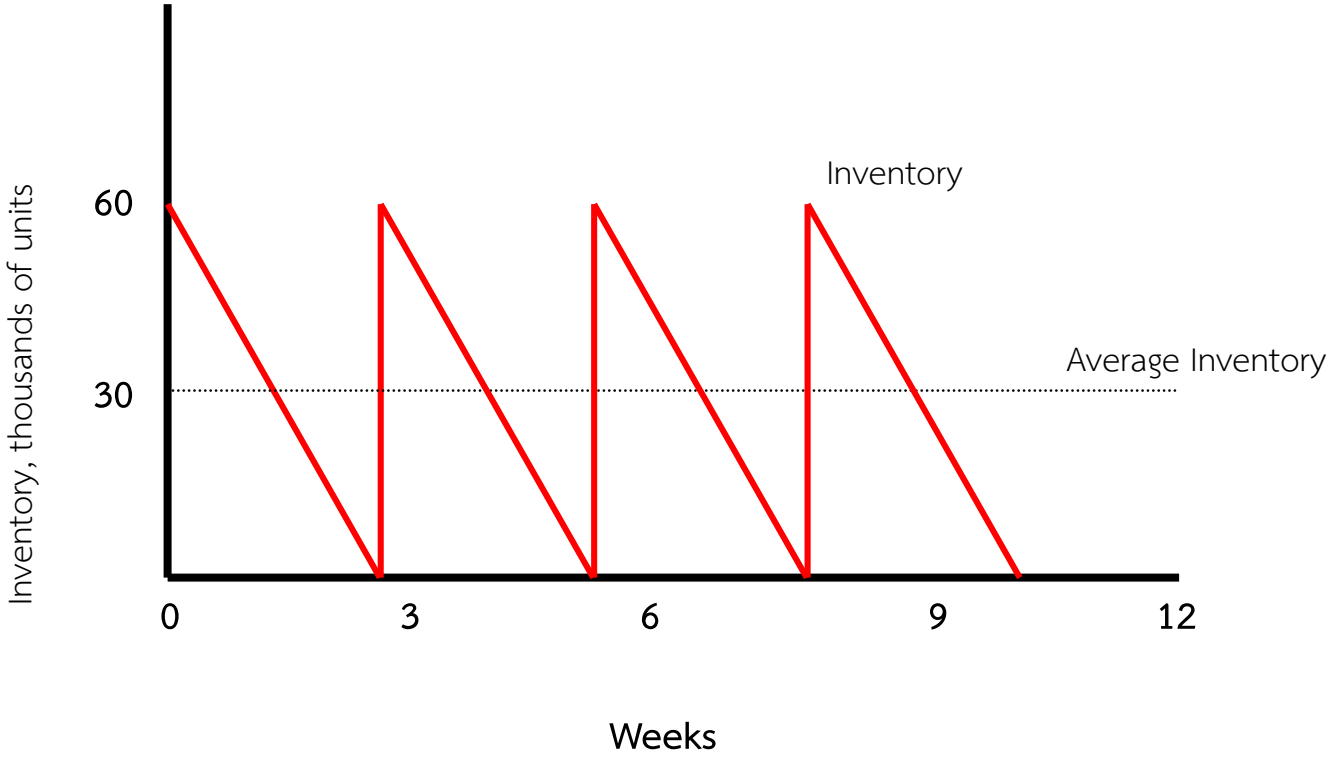
Inventory Management

- Components of Inventory
  - Raw materials
  - Work in process
  - Finished goods

- Goal = Minimize amount of cash tied up in inventory

- Tools used to minimize inventory
  - Just-in-time
  - Lean manufacturing

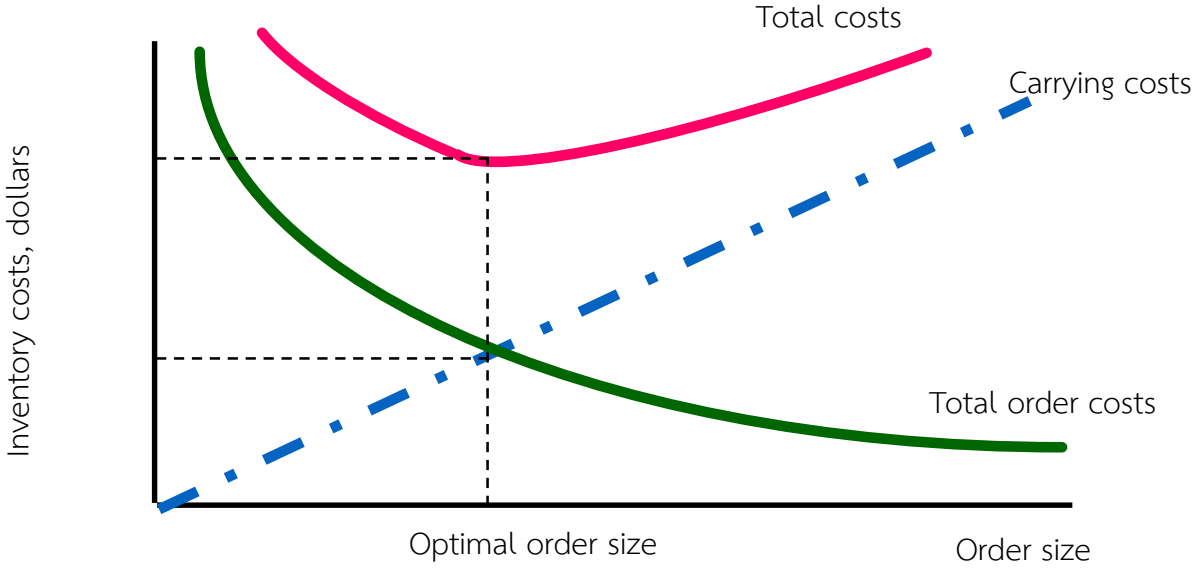
Inventory Management



Inventory Management

Determination of optimal order size

Economic Order Quantity (EOQ) - Order size that minimizes total inventory costs.



Inventory Management

Economic Order Quantity (EOQ)

Example:

Assume that ABCompany involves a fixed order cost of $450, while the annual carry cost of the inventory works out at about $55 a ton. Find EOQ when annual sale is $255,000.

Short-Term Financing

Short-Term Financing

1. Trade credit
2. Bank loan

Trade Credit

Example: 2/25, net 60

1. Cash discount
2. Discount period
3. Credit period

Trade Credit

Opportunity cost of foregoing a cash discount

Example: 2/25, net 60

Calculation:

Cost = of principal = => cost rate = in days

How many percentage in a year? => cost rate = ? in 360 days

Trade Credit

Example:

SuperCare Company was offered trade credit 5/10, net 20 from its supplier.

- Calculate the opportunity cost of foregoing a cash discount

Trade Credit

Opportunity cost vs. Credit term components

Example: 2/25, net 60

$$\textbf{Opportunity Cost} = \frac{2 \times 360}{98 \times 35} \times 100\% = 20.9913\%$$

Bank Loan

Short-term bank loan

1. Maturity
2. Promissory note – amount, interest, payment agreement, collateral, other commitments
3. Compensating balance
4. Line of credit
5. Revolving line of credit – interest and commitment fee

Cost of Bank Loan

$$\text{Actual Interest rate} = \frac{\text{Cost of Borrowing}}{\text{Amount of Usable Fund}}$$

$$\text{Interest payment} = \text{Amount of loan x } \frac{\text{Annual percentage rate (APR)}}{\text{Number of periods in the year (m)}}$$

* Annual percentage rate (APR) = Quoted Rate

* Note for line of credit and revolving line of credit

$$\text{Effective annual rate (EAR)} = \left(1 + \frac{\textit{Actual Interest rate}}{\textit{Number of periods in the year}}\right)^{m} - 1.00$$

Interest Rate Calculation for Short-Term Financing

1. Simple Interest
2. Discount interest
3. Compensating balance

Interest Rate Calculation for Short-Term Financing

1. Simple Interest

$$\text{Interest rate} = \frac{\text{Cost of Borrowing}}{\text{Amount of Usable Fund}}$$

Example:

If the bank quotes an annual rate of 12 percent on a simple interest loan of $100,000 for (a) 1 month and (b) 12 months, find annual percentage rate (APR) and effective annual rate (EAR)?

Interest Rate Calculation for Short-Term Financing

2. Discount interest

Example:

If the bank quotes an annual rate of 12 percent on a simple interest loan of $100,000 for (a) 1 month and (b) 12 months, find annual percentage rate (APR) and effective annual rate (EAR) when the bank imposes discount interest?

Interest Rate Calculation for Short-Term Financing

3. Compensating balance

Example:

If the bank quotes an annual rate of 12 percent on a simple interest loan of $100,000 for (a) 1 month and (b) 12 months, find annual percentage rate (APR) and effective annual rate (EAR) when the bank imposes compensating balance 20%? What will happen if the bank also imposes discount interest?

Question?