FN201: Lecture Note 3
Working Capital Management

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Firm’s Capital

- Net Working Capital

  = Current Assets – Current Liabilities

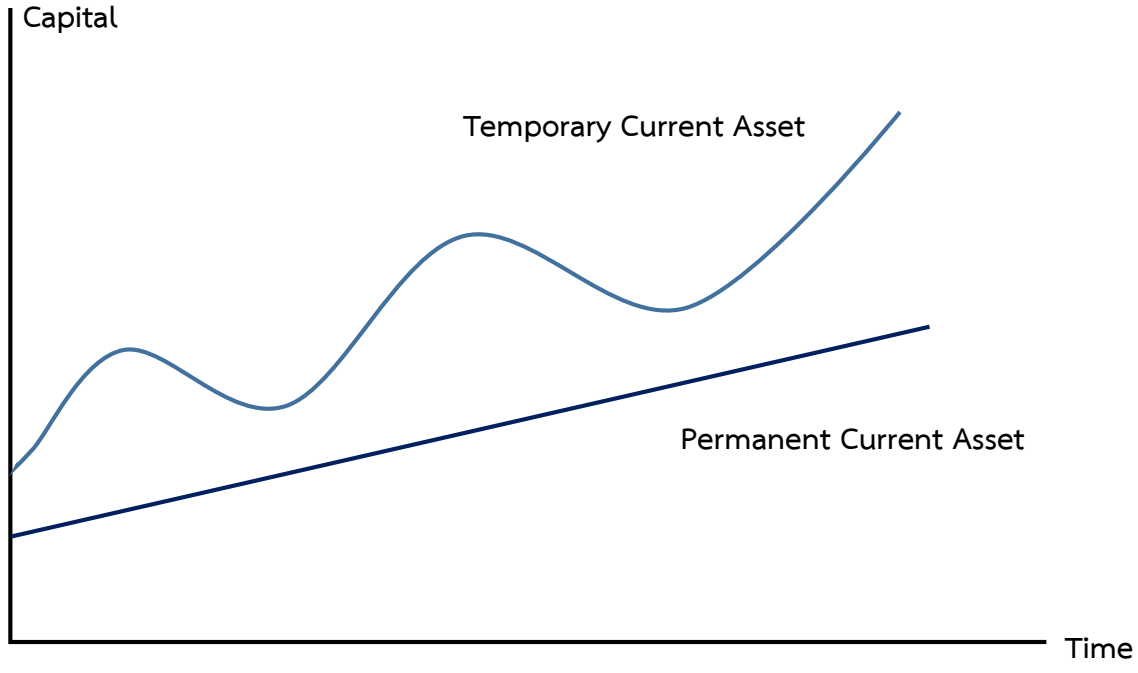
- Net Operating Capital

  = 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

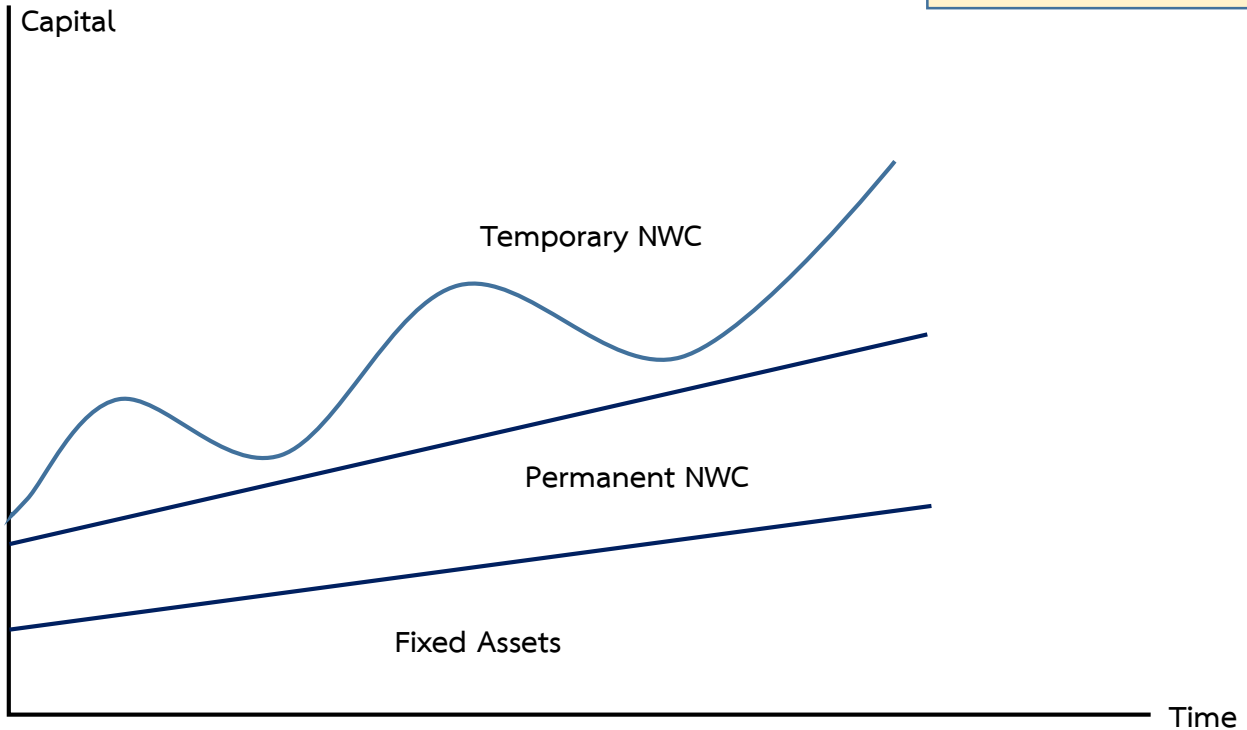
   = Low investment

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

Current Asset Financing Policy

Net Working Capital = CA - CL

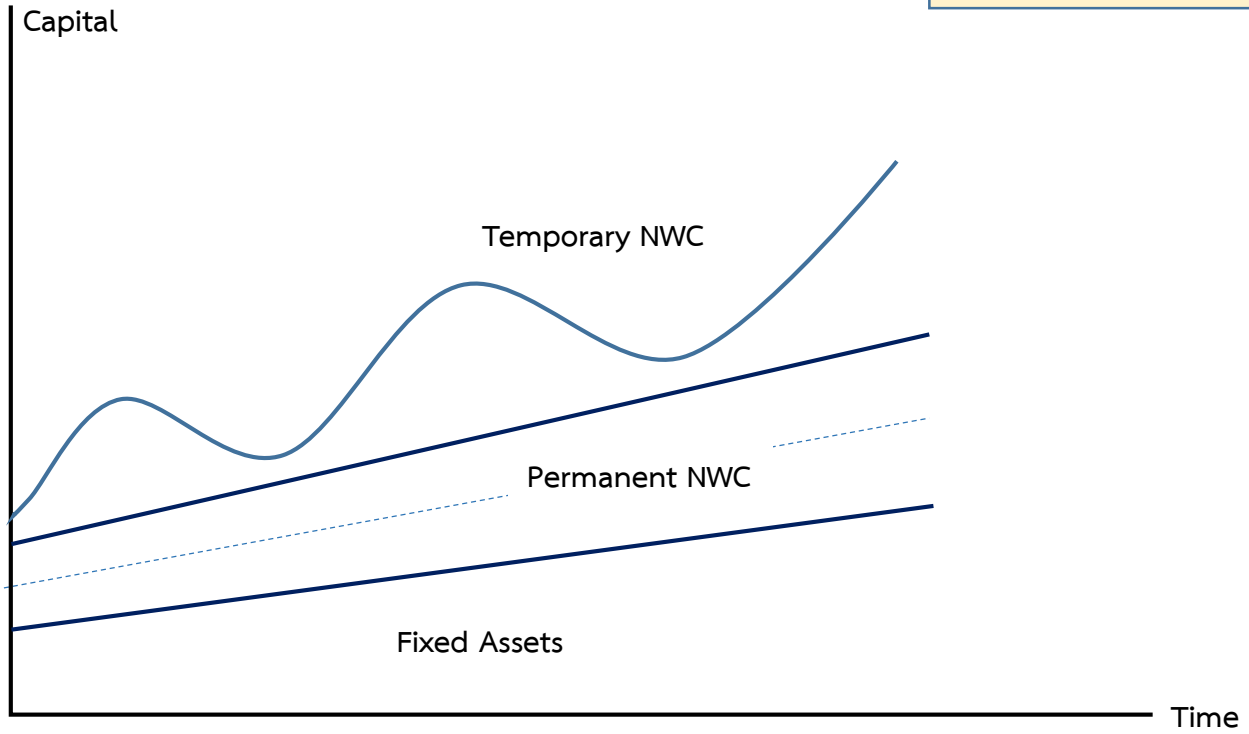
1. Self-Liquidating Financing Approach / Maturity Matching



Current Asset Financing Policy

Net Working Capital = CA - CL

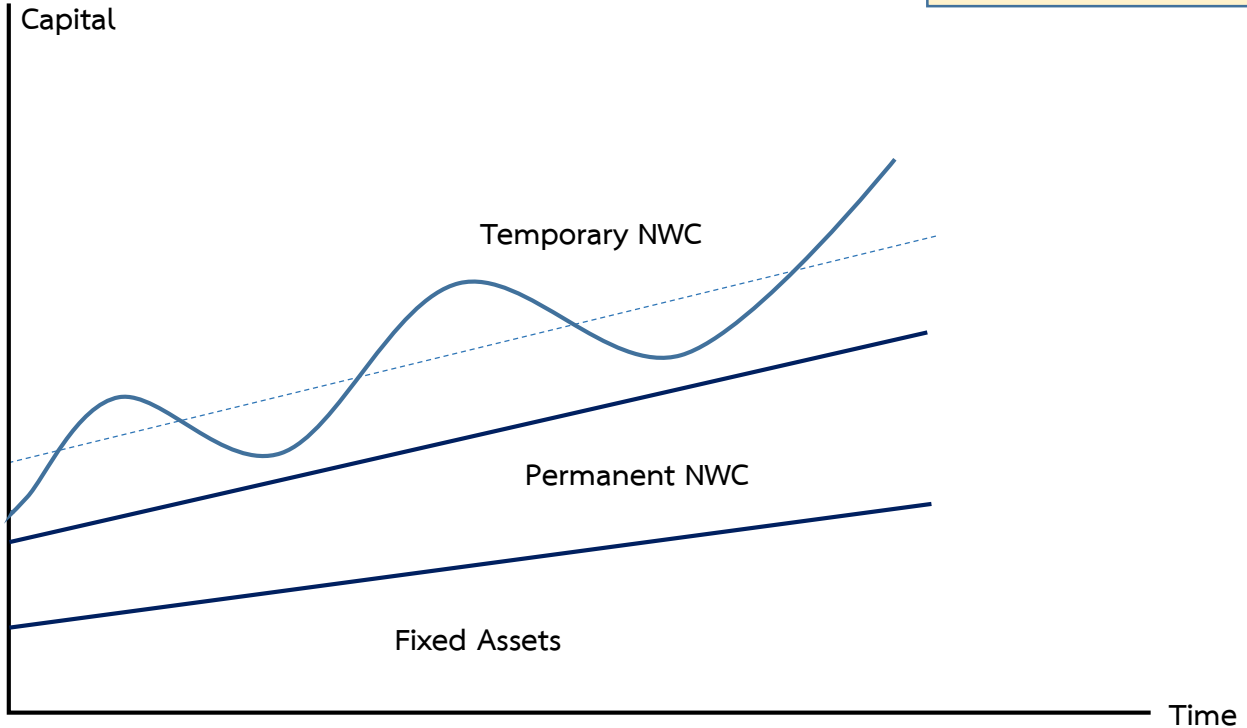
2. Aggressive Financing Approach



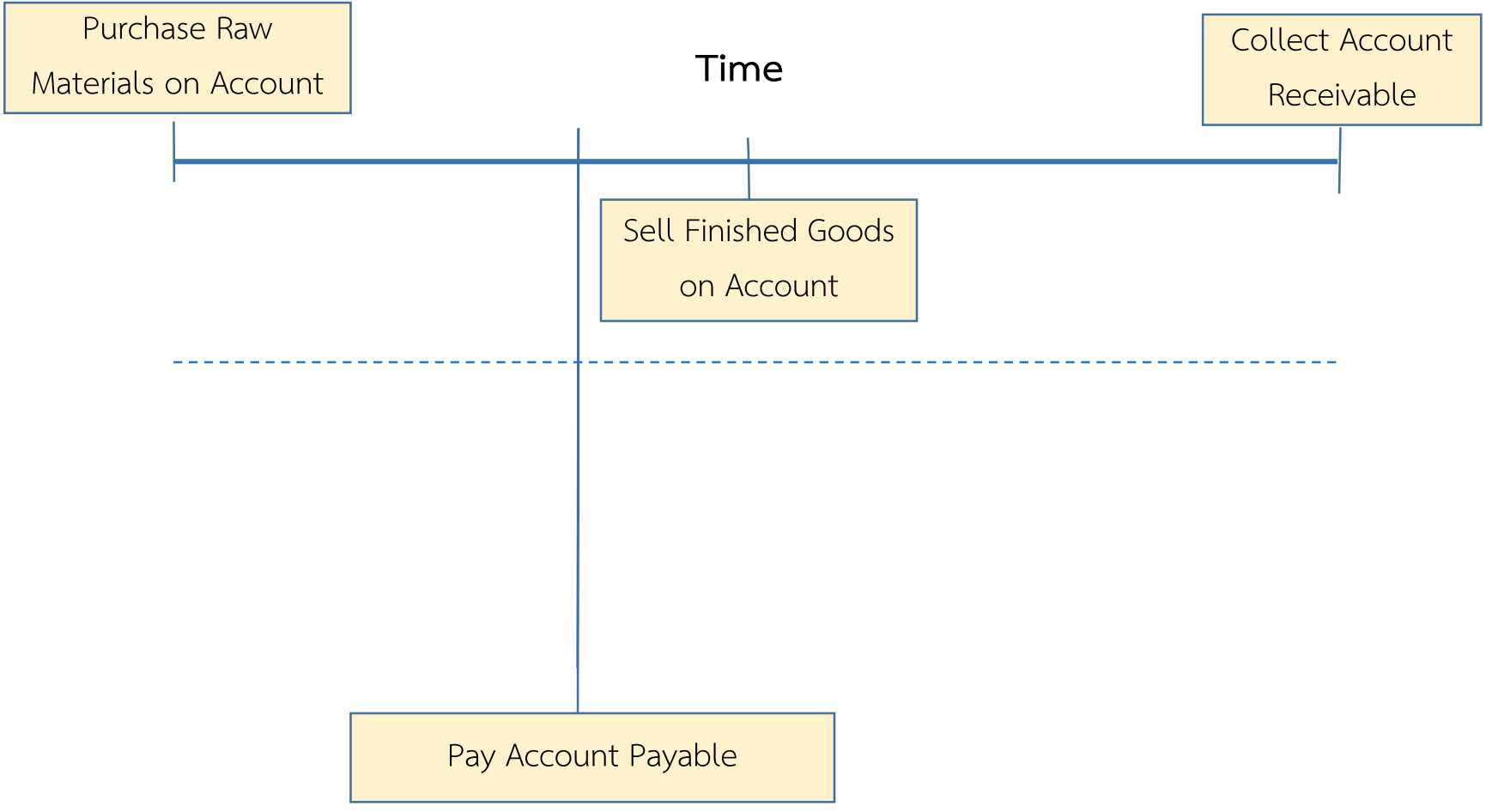
Current Asset Financing Policy

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)

1	Sales	2,200
2	Cost of goods sold	1,644
3	Other expenses	411
4	Depreciation	20
5	EBIT (1−2−3−4)	125
6	Interest	5
7	Pretax income (5−6)	120
8	Tax at 50%	60
9	Net income (7−8)	60
	Dividend	30
	Earnings retained in the business	30

	2008
Current assets:	
Cash	20
Marketable securities	0
Accounts receivable	125
Inventory	130
Total current assets	275
Fixed assets:	
Gross investment	320
Less depreciation	80
Net fixed assets	240
Total assets	515
Current liabilities:	
Bank loans	25
Accounts payable	110
Total current liabilities	135
Long-term debt	60
Net worth (equity and retained earnings)	320
Total liabilities and net worth	515

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 the company is able to reduce inventory levels to a year average value of $110 billion and average accounts receivable to $100 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)

Garrett Industries turns over its inventory 6 times each year; it has an average collection period of 45 days and an average payment period of 30 days. The firm's annual operating-cycle investment is $3 million. Assume a 360-day year.

a) Calculate firm's operating cycle, cash conversion cycle, its daily cash operating expenditure, and the amount of resources needed to support its cash conversion cycle.

b) Find the firm's cash conversion cycle and resource investment requirement if it makes the following changes simultaneously.

   (1) Shortens the average age of inventory by 5 days.

   (2) Speeds the collection of accounts receivable by an average 10 days.

   (3) Extends the average payment period by 10 days.

c) Discuss possible management that might be able to reduce the cash conversion cycle.

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

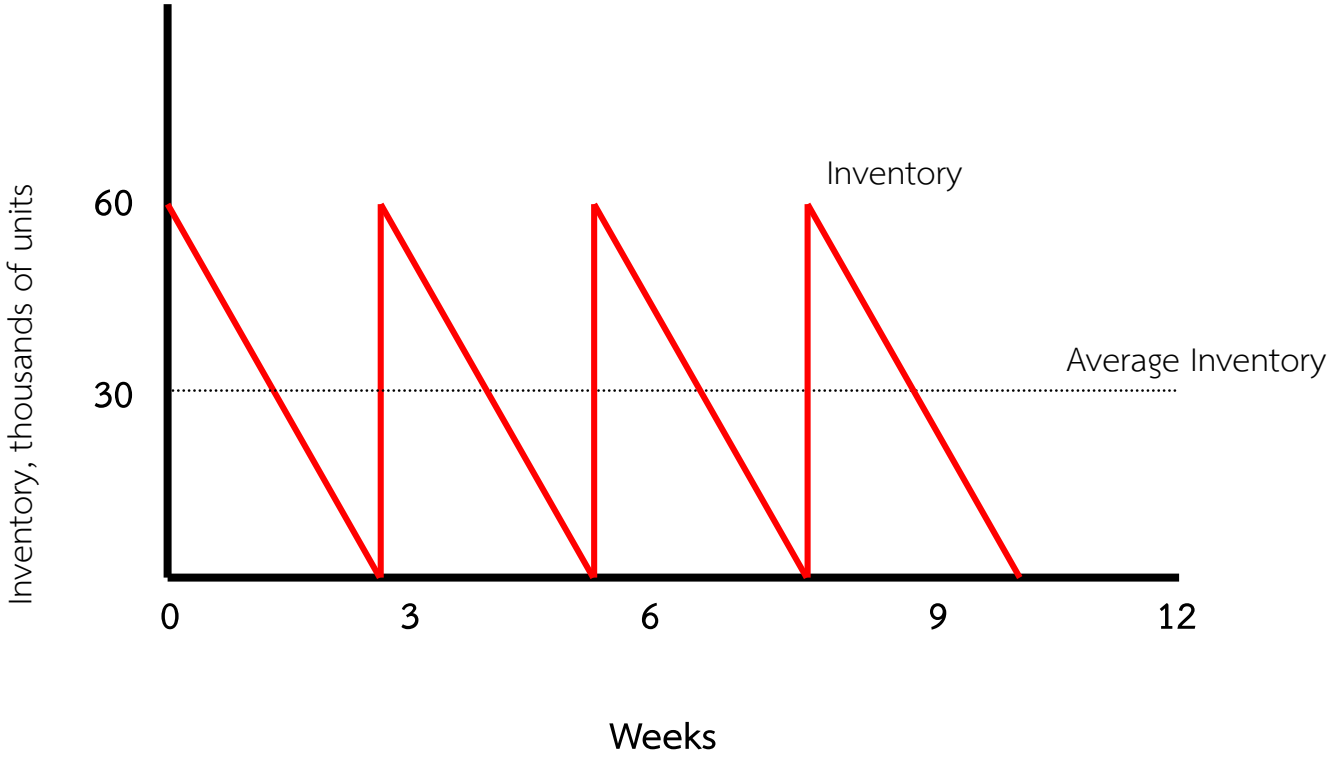
Inventory Management

- 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

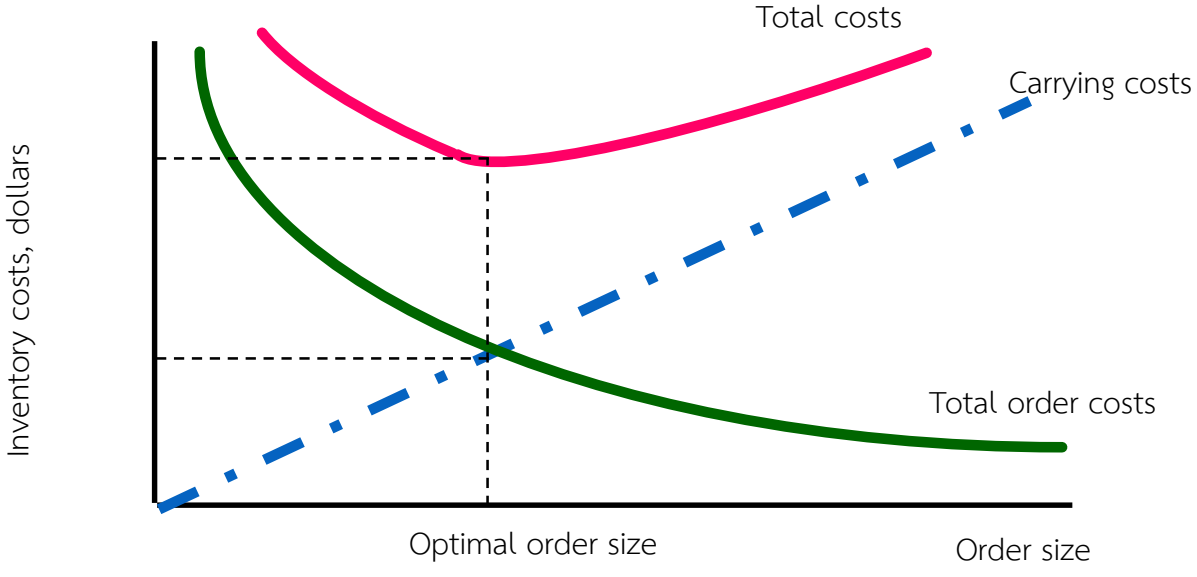
Inventory Management



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?