FN 201: Lecture Note 4
Working Capital Management

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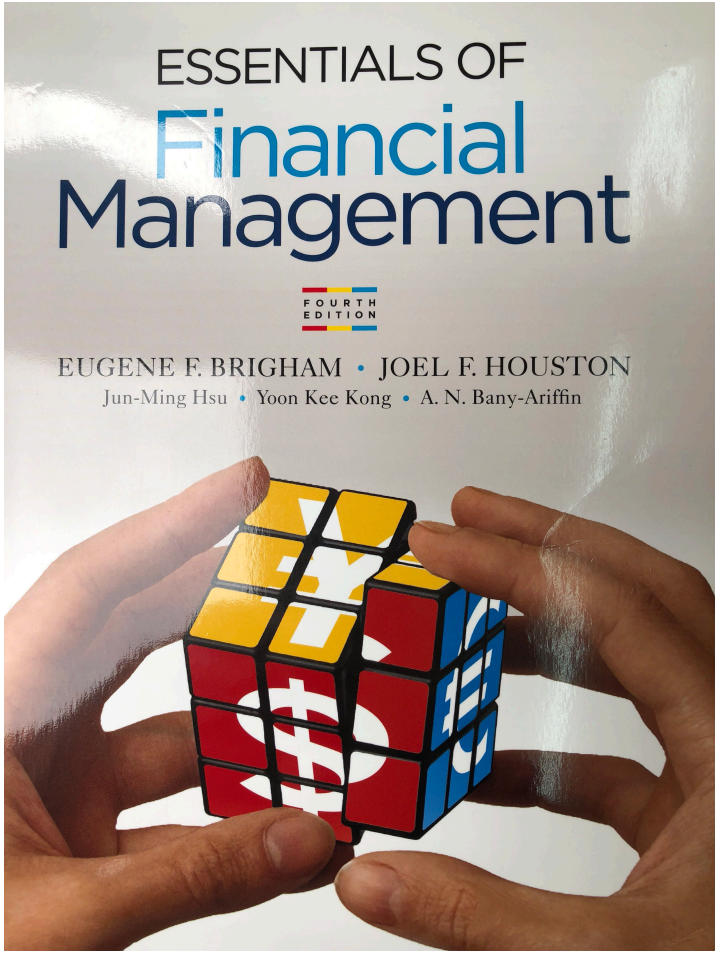
Reading

- Brigham, E.F., Houston, J.F., Hsu, JM., Kong, Y.K., Bany-Ariffin, A.N. (2018). Essentials of Financial Management. 4th Edition, Cengage Learning.

Chapter 17



Key Concepts and Skills

- Describe the operating and cash cycles and why they are important
- List the different types of short-term financial policy
- Summarize the essentials of short-term financial planning
- Explain the sources and uses of cash on the balance sheet

Outline

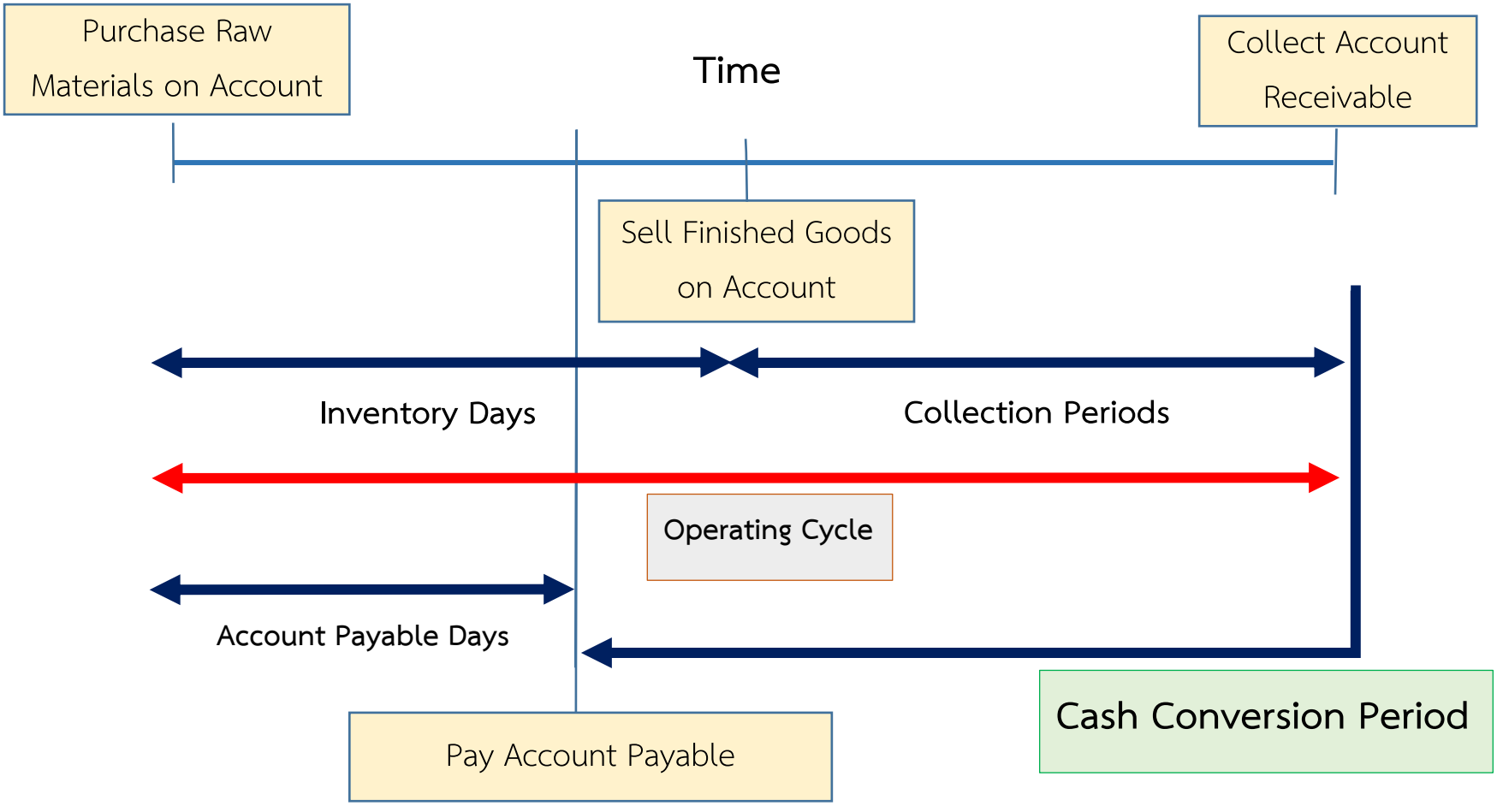
1. The Operating Cycle and the Cash Cycle
2. Some Aspects of Short-Term Financial Policy
3. Short-Term Borrowing

1. The Operating Cycle and the Cash Cycle

Sources and Uses of Cash

- Balance sheet identity (rearranged)
  - NWC + fixed assets = long-term debt + equity
  - NWC = cash + other CA – CL
  - Cash = long-term debt + equity + CL – CA other than cash – fixed assets
- Sources
  - Increasing long-term debt, equity, or current liabilities
  - Decreasing current assets other than cash, or fixed assets
- Uses
  - Decreasing long-term debt, equity, or current liabilities
  - Increasing current assets other than cash, or fixed assets

Cash Cycle / Cash Conversion Period



The Operating Cycle

- Operating cycle – time between purchasing the inventory and collecting the cash from sale of the inventory

- Inventory period – time required to purchase and sell the inventory

- Accounts receivable period – time required to collect on credit sales

Operating cycle = inventory period + accounts receivable period

Cash Cycle

- Cash cycle
  - Amount of time we finance our inventory
  - Difference between when we receive cash from the sale and when we have to pay for the inventory

- Accounts payable period – time between purchase of inventory and payment for the inventory

Cash cycle = Operating cycle – Accounts payable period

Example 1

Calculating Cycles Consider the following financial statement information for the Bulldog Icers Corporation:

Item	Beginning		Ending
Inventory	$9,215		$10,876
Accounts receivable	5,387		5,932
Accounts payable	7,438		7,847
Net sales		$85,682	
Cost of goods sold		57,687	

Calculate the operating and cash cycles. How do you interpret your answer?

Example 2

Cash tied up in the operation of firm

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

2. Some Aspects of Short-Term Financial Policy

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)
$\frac{\text{CA}}{\text{Total Asset}}$	**1. Relax**	High	Low	Low
	2. Moderate	M	M	M
	3. Aggressive	Low	High	High

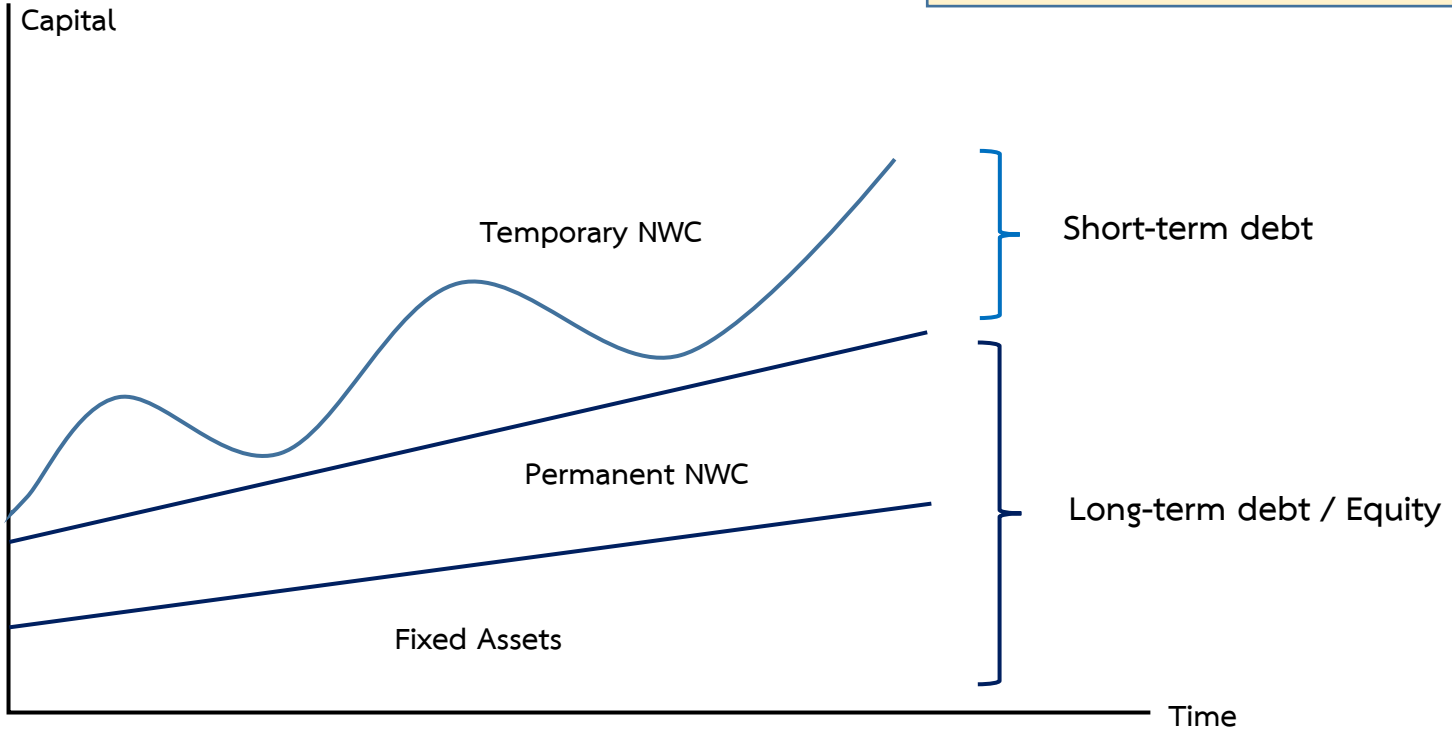
Temporary vs. Permanent Assets

- Temporary current assets
  - Sales or required inventory build-up may be seasonal.
  - Additional current assets are needed during the “peak” time.
  - The level of current assets will decrease as sales occur.
- Permanent current assets
  - Firms generally need to carry a minimum level of current assets at all times.
  - These assets are considered “permanent” because the level is constant, not because the assets aren’t sold.

Current Asset Financing Policy

Net Working Capital = CA - CL

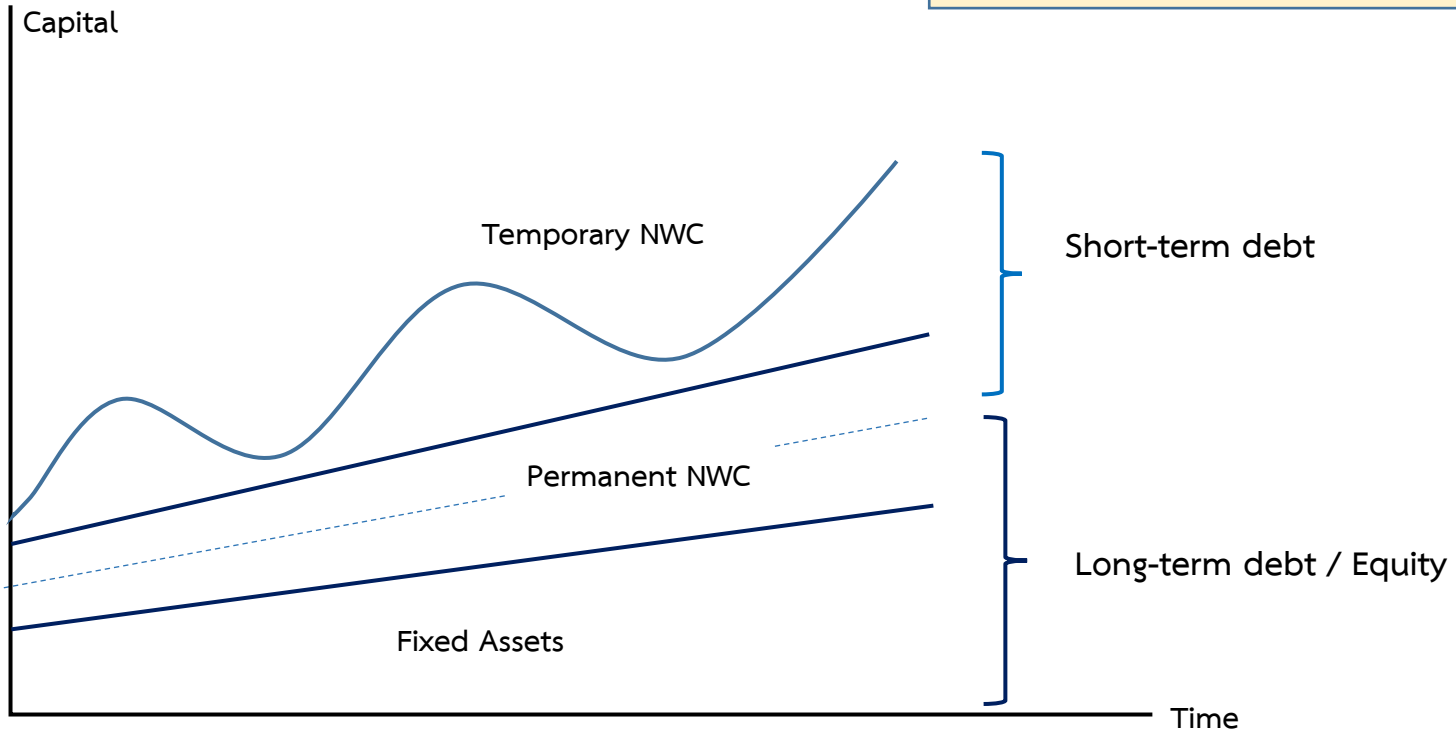
1. Self-Liquidating Financing Approach / Maturity Matching



Current Asset Financing Policy

Net Working Capital = CA - CL

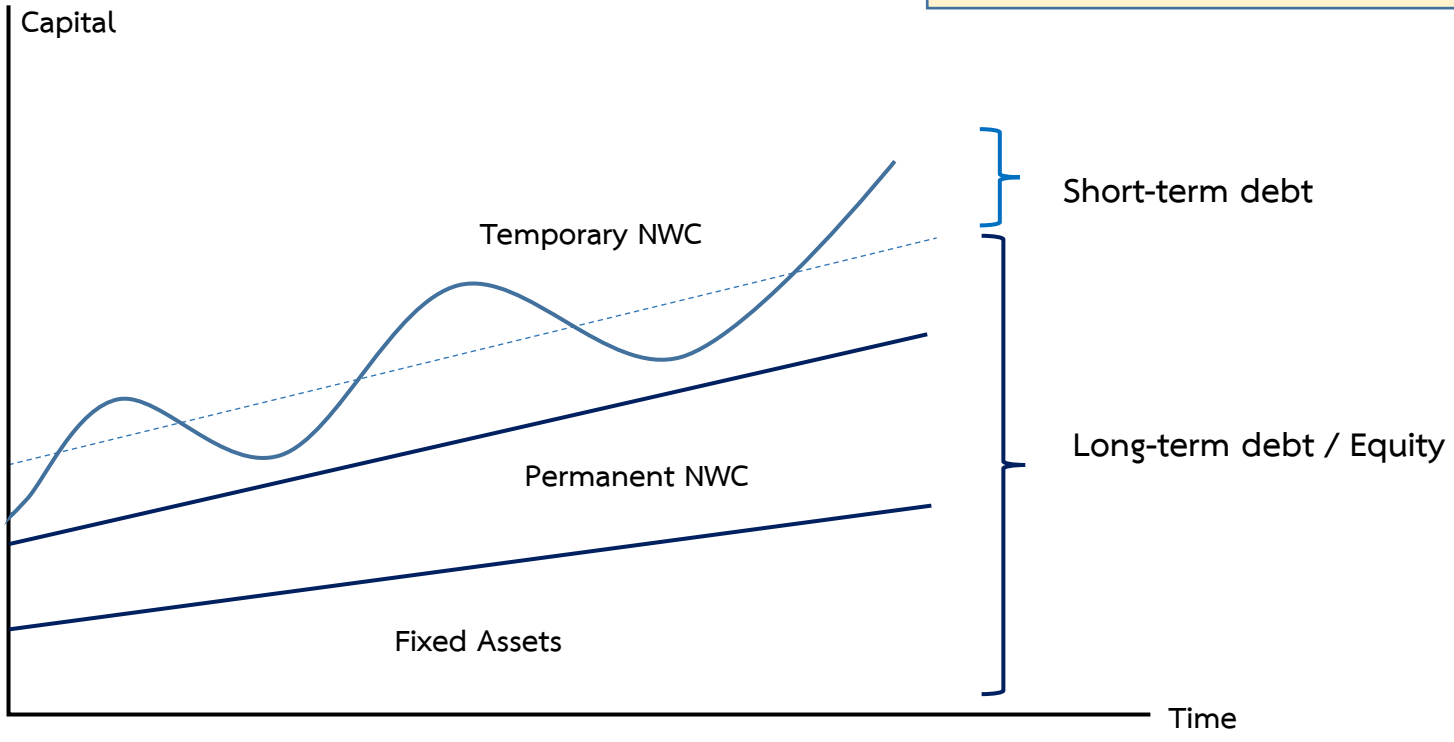
2. Aggressive Financing Approach



Current Asset Financing Policy

Net Working Capital = CA - CL

3. Conservative Financing Approach



3. Short-Term Financing

Short-Term Financing

1. Trade credit
2. Bank loan

Trade Credit

Example: 2/25, net 60

1. ~~Cash discount = 2%~~ √
2. Discount period = 25 days
3. Credit period = 60 days

Free Trade Credit

Costly Trade Credit

Trade Credit

Opportunity cost of foregoing a cash discount

Example: 2/25, net 60

Calculation:

Cost = \$2 of principal = \$98 => cost rate = 2/98 in 35 days = (60 – 25)

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

$$\textbf{Opportunity Cost} = \frac{2\times360}{98\times35}\times100\% = 20.9913\%$$

Trade Credit

Example:

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

a. Calculate the opportunity cost of foregoing a cash discount

b. If trade value in 2012 was $4,500,000, how much would the company lose in term of indirect cost?

Trade Credit

Opportunity cost vs. Credit term components

Example: 2/25, net 60

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

<u>General form:</u>

$$\textbf{Opportunity Cost} = \frac{(Discount\ rate)\times 360}{(1-Discount\ rate)\times(Credit\ period\ -Discount\ period)}\times 100\%$$

Types of Bank Loan

- Unsecured Loans
- Secured Loans
- Commercial Paper
- Trade Credit
- etc.

Cost of Bank Loan

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

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

* Annual percentage rate (APR) = Quoted Rate

* Note for line of credit and revolving line of credit

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

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?

CB: Usable fund = Principal x (1 – CB rate)

CB + DI: Usable Fund = Principal x (1 – CB rate – Discount Rate)

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Question?