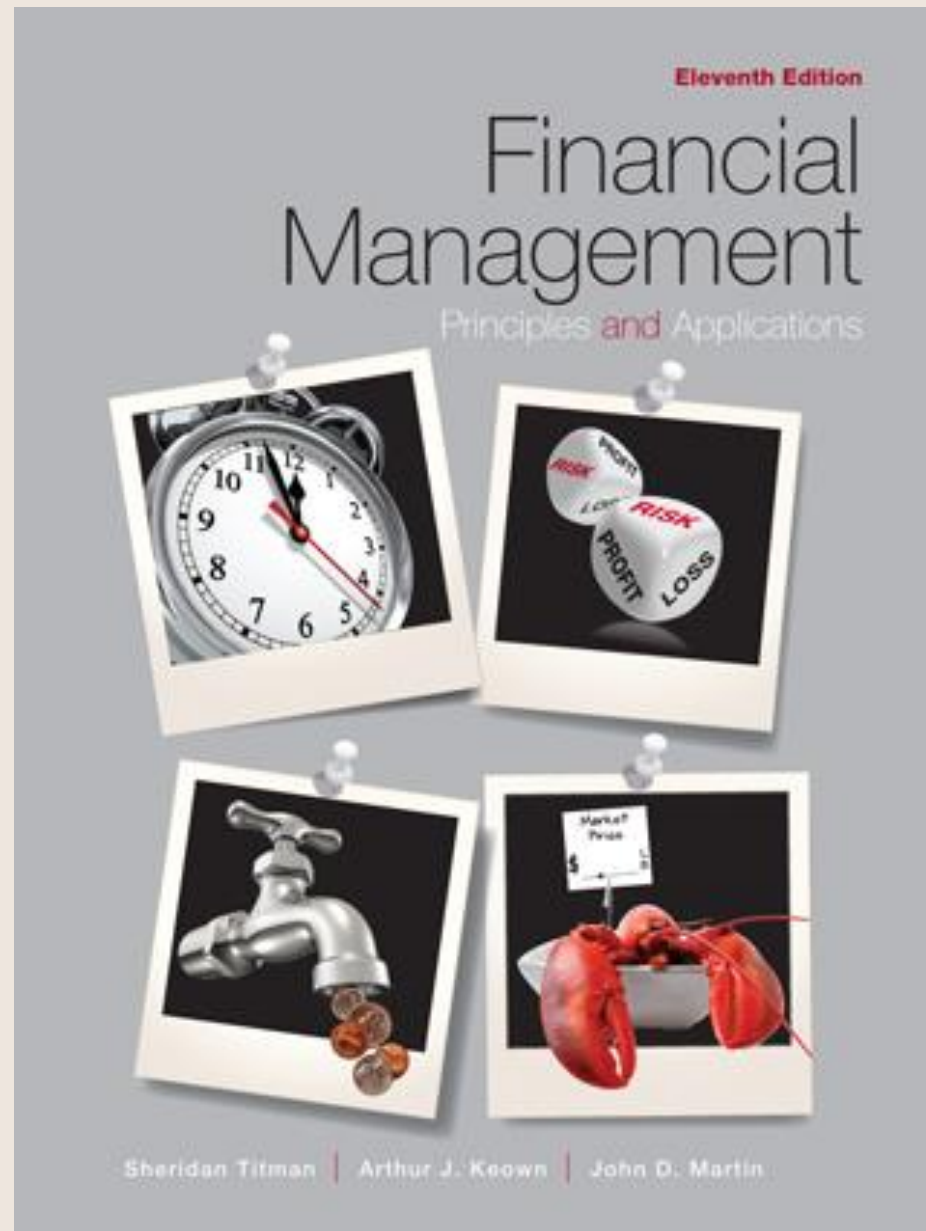


Chapter 18

Working Capital Management



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Learning Objectives

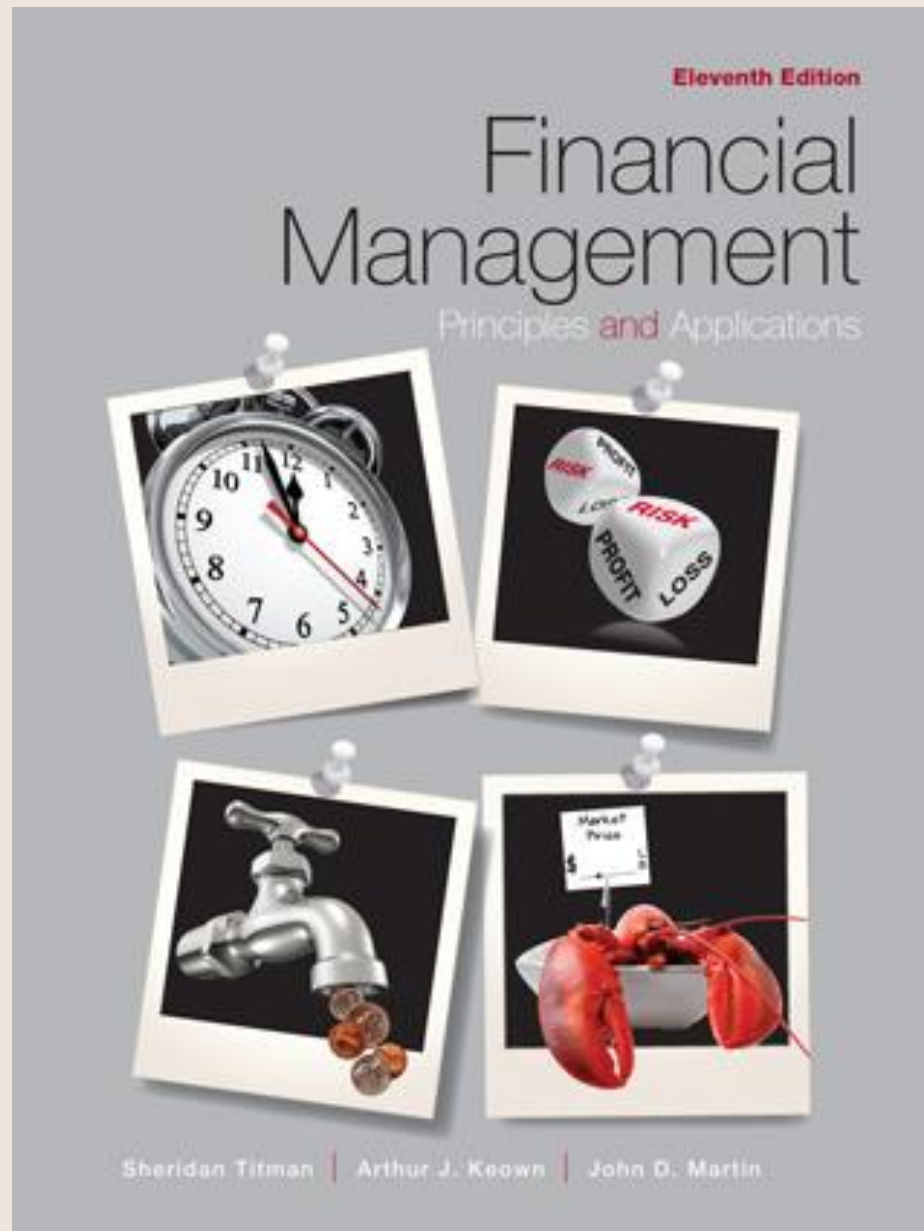
1. Describe the **risk-return tradeoff** involved in firm's working capital.
2. Explain **the principle of self-liquidating debt** as a tool for managing firm liquidity.
3. Use the **cash conversion cycle** to measure the efficiency with which a firm manages its working capital.

Learning Objectives (cont.)

Next week ...

4. *Evaluate the cost of financing* as a key determinant of the management of a firm's use of current liabilities.
5. Understand *the factors underlying a firm's investment* in cash and marketable securities, accounts receivable, and inventory.

18.1 Working Capital Management and the Risk-Return Tradeoff



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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?
 - Should the credit be extended to?
 - Should inventories be bought on credit or cash?
 - If credit is used, when should payment be made?

Measuring Firm Liquidity

- The **current ratio** (current assets divided by current liabilities) and **net working capital** (current assets minus current liabilities) are two popular measures of liquidity.
- Both measures of liquidity provide the same information. However, current ratio can be more easily used for comparing firms.

Measuring Firm Liquidity (cont.)

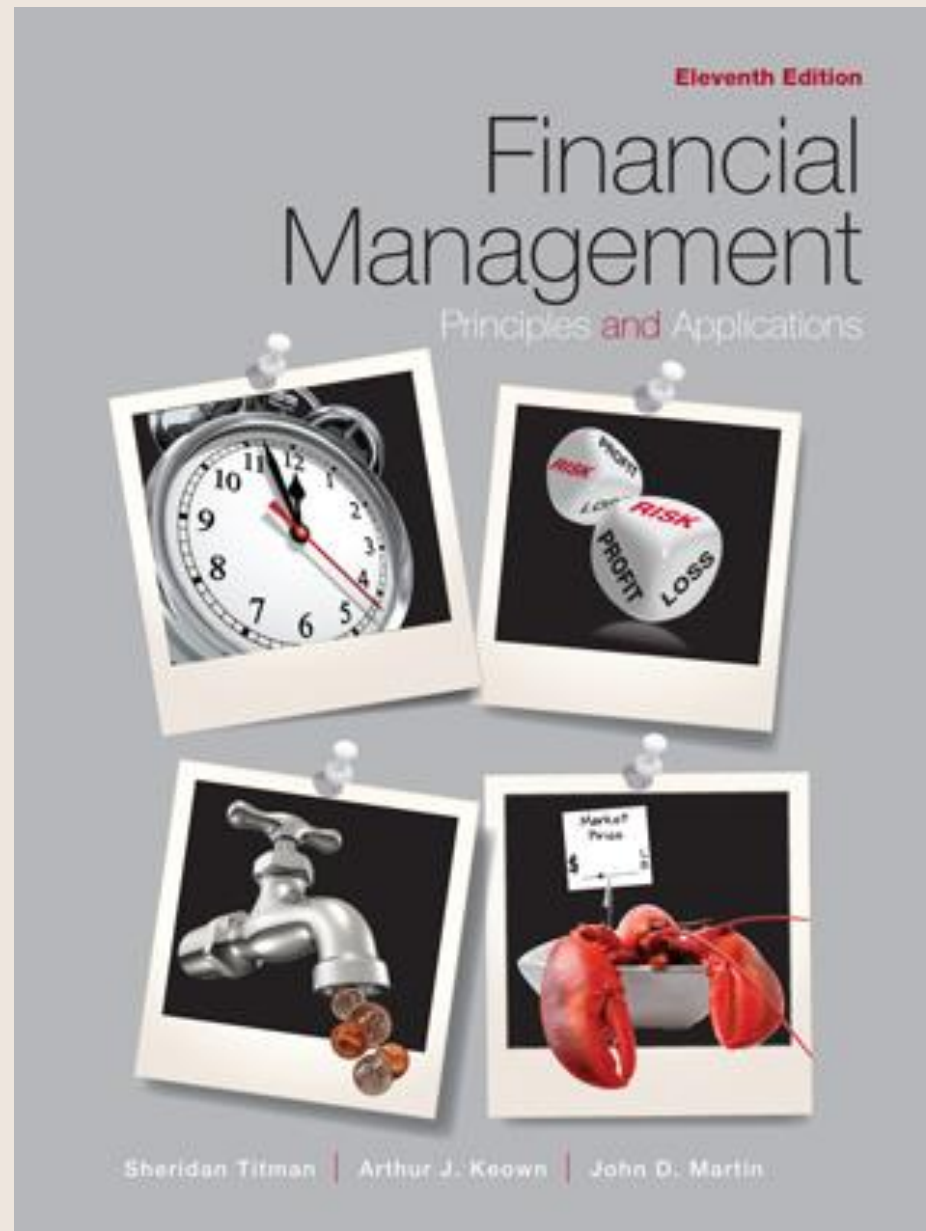
- Here the net working capital for two firms is very different (due to differences in firm sizes) but the current ratio is equal. Current ratio is a better measure of comparison of liquidity among firms.

	Firm A	Firm B
Current Assets	\$100,000	\$10,000
Current Liabilities	\$50,000	\$5,000
Net Working Capital	\$50,000	\$5,000
Current Ratio	2.0	2.0

Managing Firm Liquidity

- Managing a firm's liquidity requires balancing the firm's investments in current assets in relation to its current liabilities.
 - This can be accomplished (fulfil) by minimizing the use of current assets by efficiently managing its inventories and accounts receivable and
 - by seeking out (search) the most favorable accounts payable terms
 - and monitoring its use of short-term borrowing.

18.2 Working Capital Policy



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Working Capital Policy

- Managing the firm's net working capital involves deciding on an investment strategy for financing the firm's current assets and liabilities.
- Since each financing source comes with advantages and disadvantages, the financial manager has to decide on the optimal source for the firm.

The Principle of Self-Liquidating Debt

- This principle states that the ***maturity of the source of financing should be matched with the length of time*** that the financing is needed.

Permanent and Temporary Asset Investments

- **Temporary investments in assets** include current assets that will be liquidated and not replaced within the current year.
 - For example, cash and marketable securities, and seasonal fluctuation in inventories.

Permanent and Temporary Asset Investments (cont.)

- **Permanent investments** are composed of investments in assets that the firm expects to hold for a period longer than one year.
 - For example, the firm's minimum level of current assets such as accounts receivable and inventories, as well as fixed assets.

Spontaneous, Temporary, and Permanent Sources of Financing

- **Spontaneous sources of financing** arise spontaneously out of the day-to-day operations of the business and consist of trade credit and other forms of accounts payable (such as wages and salaries payable, tax payable, interest payable).

Spontaneous, Temporary, and Permanent Sources of Financing (cont.)

- **Temporary sources of financing** typically consist of current liabilities the firm incurs on (expose) a discretionary basis. The firm's management must make an overt (obvious) decision to use temporary sources of financing.
 - For example, unsecured bank loans, commercial paper, short-term loans secured by the firm's inventories or accounts receivables.

Spontaneous, Temporary, and Permanent Sources of Financing (cont.)

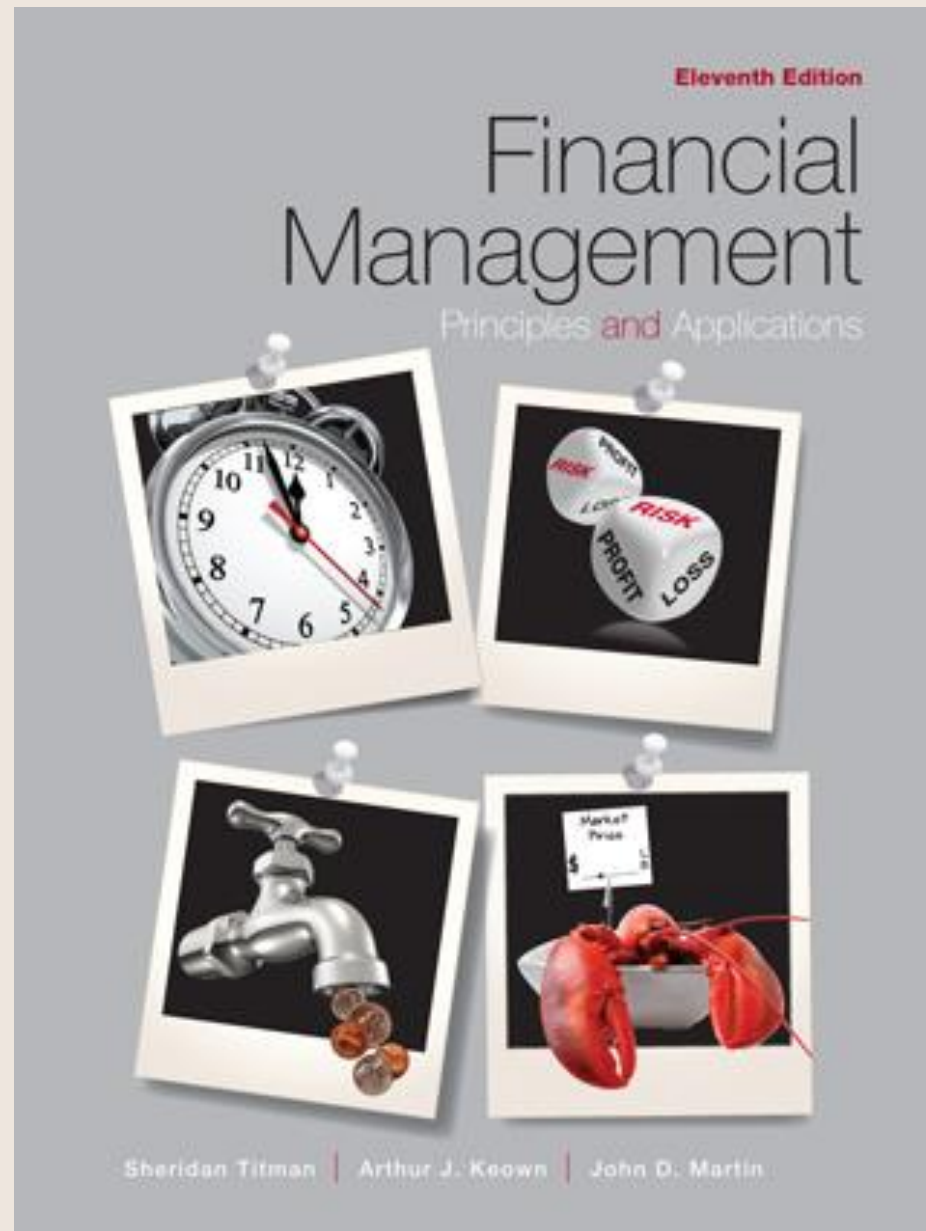
- **Permanent sources of financing** are called permanent since the financing is available for a longer period of time than a current liability.
 - For example, intermediate term loans, bonds, preferred stock and common equity.

The Principle of Self-Liquidating Debt

As you remember....

- This principle states that the ***maturity of the source of financing should be matched with the length of time*** that the financing is needed.

18.3 Operating and Cash Conversion Cycles



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Operating and Cash Conversion Cycles

- Operating and cash conversion cycles indicate **how effectively a firm has managed its working capital.**
- **The shorter** these two cycles are, the **more efficient is the firm's working capital management.**

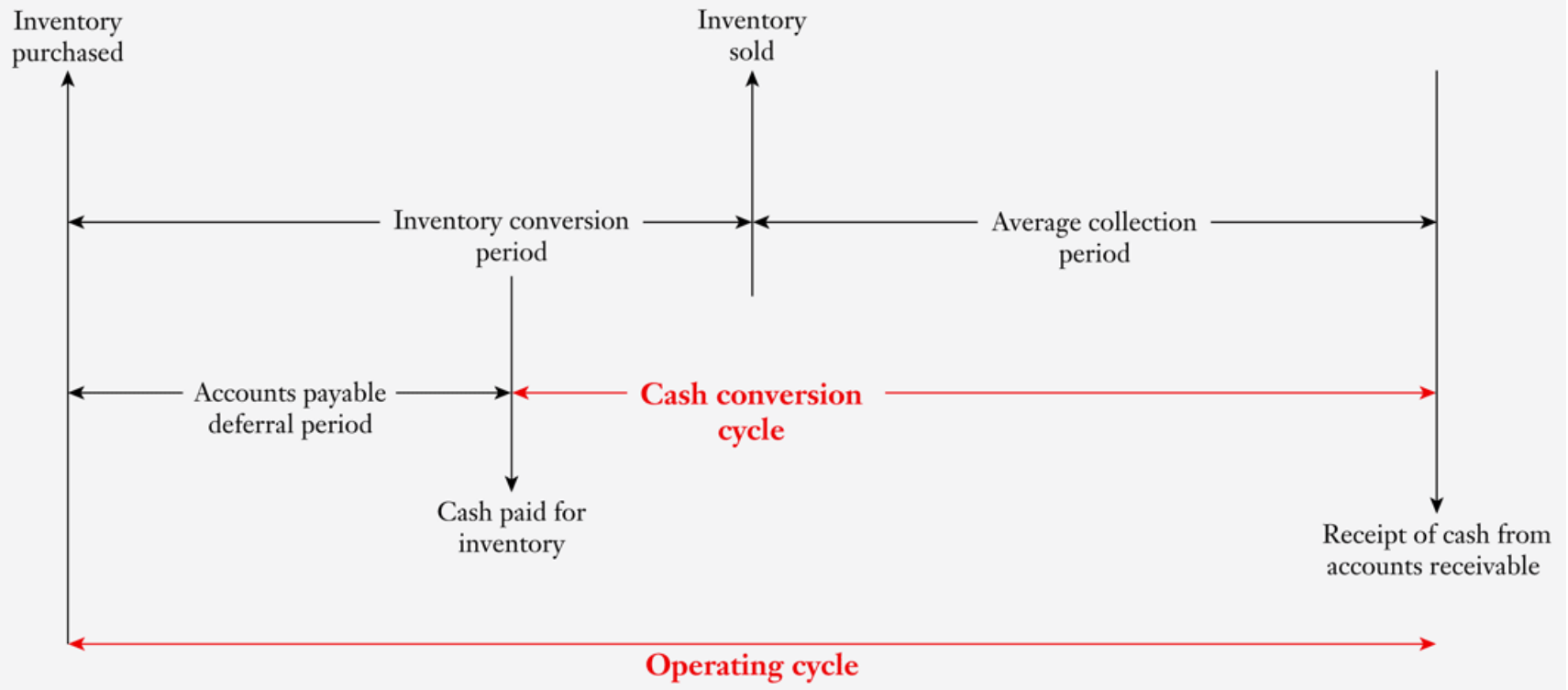
Measuring Working Capital Efficiency

- The **operating cycle** measures the time period that elapses from the date that an item of inventory is purchased until the firm collects the cash from its sale.
- If an item is sold on credit, this date is when the accounts receivable is collected.

$$\text{Operating Cycle} = \text{Inventory Conversion Period} + \text{Average Collection Period}$$

STEP 1: **Picture** the problem

We can visualize the operating and cash conversion cycles using the diagram found in Figure 18.3 as follows:



Measuring Working Capital Efficiency (cont.)

- When the firm is able to purchase (get) items of inventory on credit, cash is not tied up (attached) for the full length of its operating cycle.
- This is known as the **accounts payable deferral (obligation) period**.

$$\text{Accounts Payable Deferral Period} = \frac{365}{\left(\frac{\text{Cost of Goods Sold}}{\text{Accounts Payable}} \right)}$$

Measuring Working Capital Efficiency (cont.)

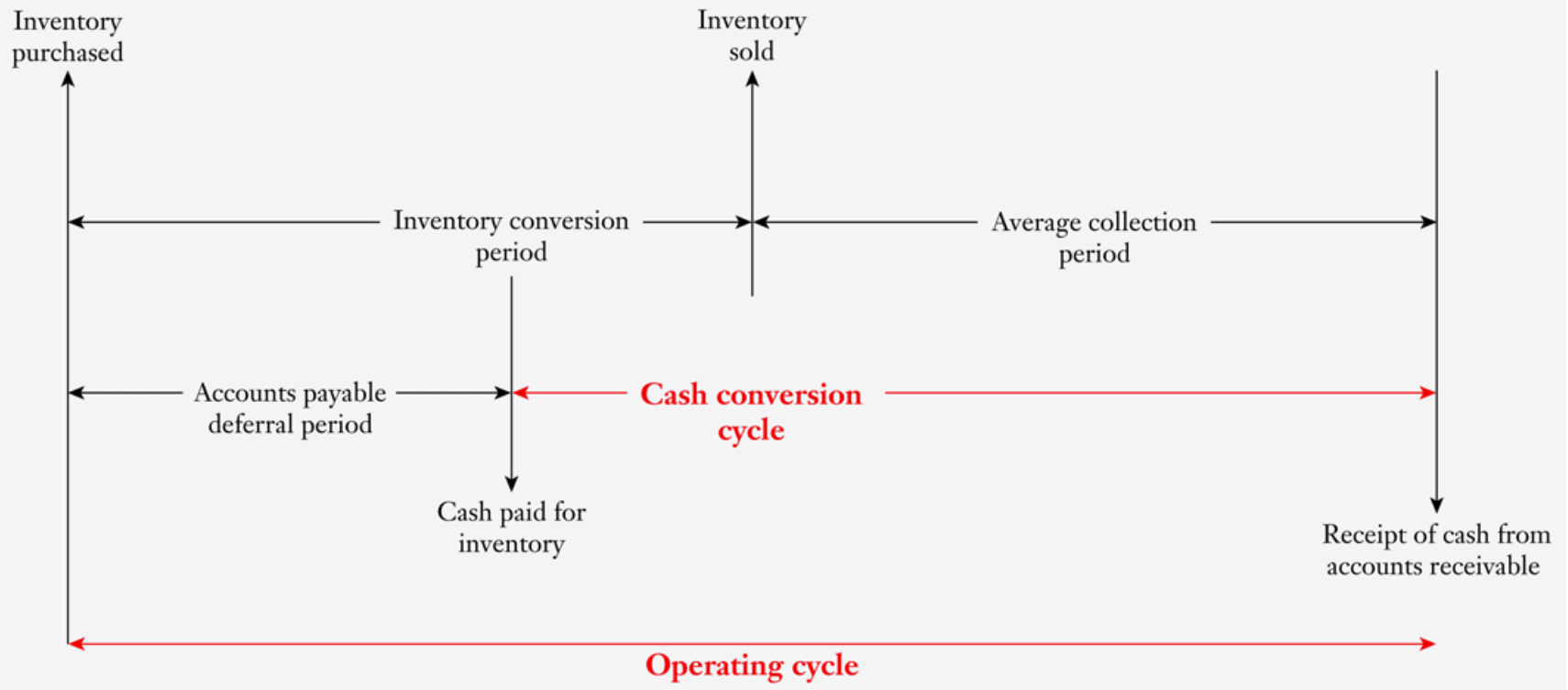
- **Cash conversion cycle** is shorter than the operating cycle as the firm does not have to pay for the items in its inventory
- This period equal to the length of Operating Cycle - The Account Payable Deferral Period.

Cash Conversion Cycle = Operating Cycle – Accounts Payable Deferral Period

$$\text{Operating Cycle} = \text{Inventory Conversion Period} + \text{Average Collection Period}$$

STEP 1: **Picture** the problem

We can visualize the operating and cash conversion cycles using the diagram found in Figure 18.3 as follows:



Calculating the Operating and Cash Conversion Cycle

- Figure 18-3 calculations are based on the following information:
 - Annual credit sales = \$15 million
 - Cost of goods sold = \$12 million
 - Inventory = \$3 million
 - Accounts receivable = \$3.6 million
 - Accounts payable outstanding = \$ 2million

Calculating the Operating and Cash Conversion Cycle (cont.)

- To calculate the operating cycle, (1) we first need to compute the inventory conversion period.

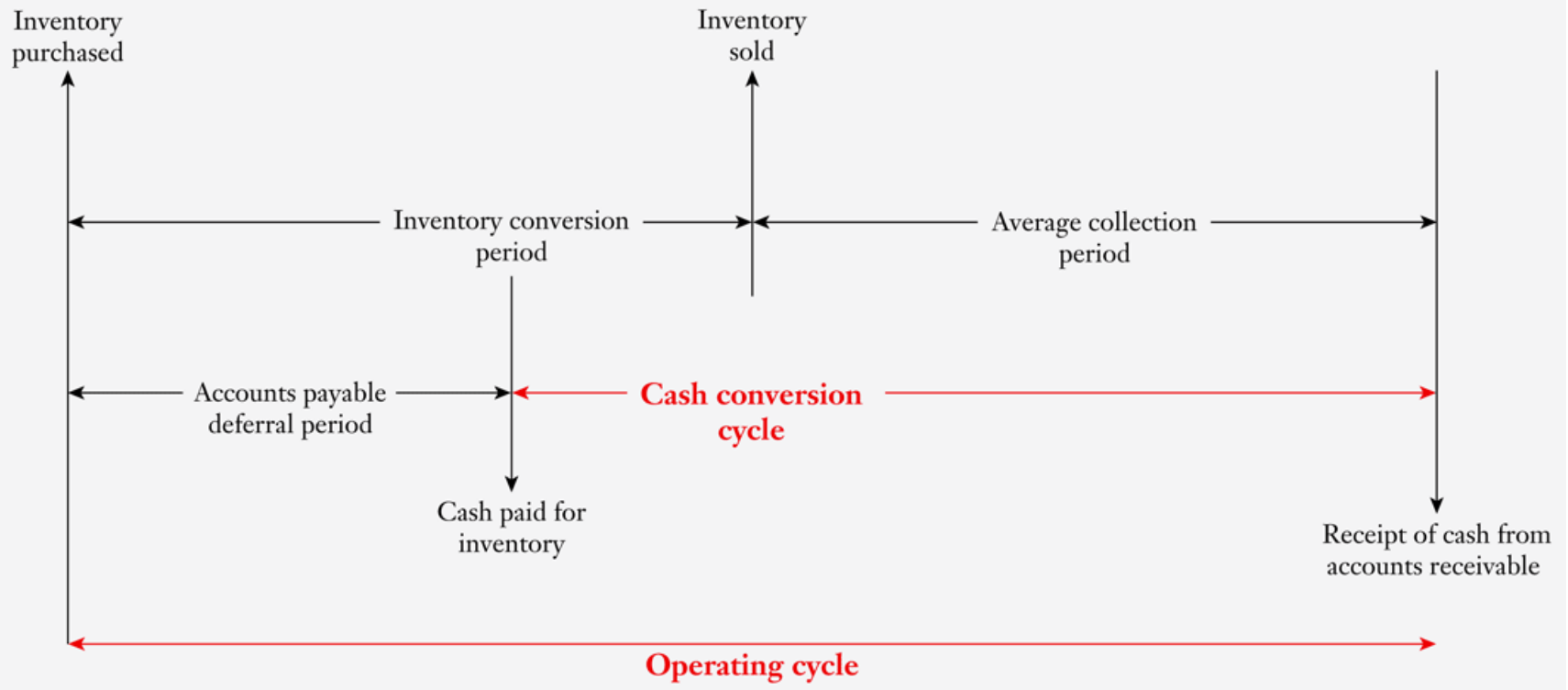
$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Inventory}} = \frac{\$12,000,000}{\$3,000,000} = 4.0$$

$$\text{Inventory Conversion Period} = \frac{365}{\text{Inventory Turnover Ratio}} = \frac{365}{4.0} = 91 \text{ days}$$

$$\text{Operating Cycle} = \text{Inventory Conversion Period} + \text{Average Collection Period}$$

STEP 1: Picture the problem

We can visualize the operating and cash conversion cycles using the diagram found in Figure 18.3 as follows:



Calculating the Operating and Cash Conversion Cycle (cont.)

- To calculate the cash conversion cycle, we (2) need to calculate the **accounts payable deferral period**.

$$\text{Accounts Payable Deferral Period} = \frac{365}{\left(\frac{\text{Cost of Goods Sold}}{\text{Accounts Payable}} \right)}$$

Accounts payable deferral period
= 365 / (12m : 2m) = 61 days

Calculating the Operating and Cash Conversion Cycle (cont.)

The second half of the operating cycle is the number of takes it takes to convert accounts receivable to cash (or **average collection period**).

$$\text{Average Collection Period} = \frac{\text{Accounts Receivable}}{\text{Daily Credit Sales}} = \frac{\text{Accounts Receivable}}{\left(\frac{\text{Annual Credit Sales}}{365} \right)}$$

(3) Average collection period =
 $3,6\text{m} / (15\text{m} : 365) = 85 \text{ days}$

Calculating the Operating and Cash Conversion Cycle (cont.)

- Hence, **the Operating Cycle** = Inventory conversion period + Average collection period = 91 + 85 days = 176 days

- Finally

Cash Conversion Cycle = Operating Cycle – Accounts Payable Deferral Period

Cash conversion cycle = 176 days – 61 days
= 115 days

Figure 18.3

The Cash Conversion Cycle

A firm's operations typically follow a sequence of milestones: the purchase of items for inventories, the sale of items from inventory for credit, and the collection of accounts receivable. The period of time required for this entire process is called the operating cycle. However, for firms that are able to purchase items for their inventories on credit using accounts payable, the cash conversion cycle is shorter than the operating cycle by the number of days that the firm has to pay its accounts payable.

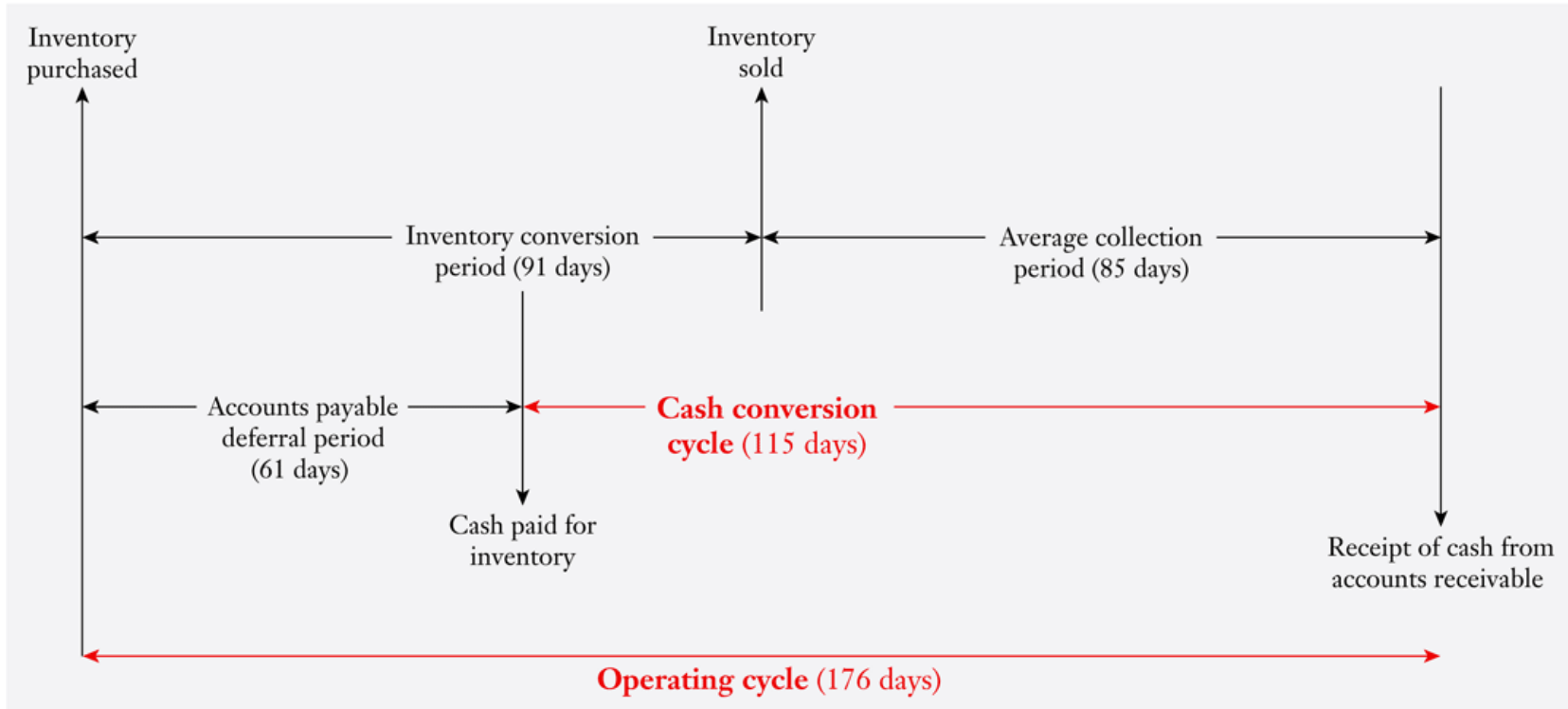


Figure 18.3 (Cont.)

Key Terms

- Cash conversion cycle
- Inventory conversion period
- Principle of self-liquidating debt
- Spontaneous sources of financing
- Temporary sources of financing