

# CHAPTER 2

An Introduction to Cost Terms and Purposes

# BASIC COST TERMINOLOGY

- ◉ Cost—a sacrificed or forgone resource to achieve a specific objective.
- ◉ Actual cost—a cost that has occurred.
- ◉ Budgeted cost—a predicted cost.
- ◉ Cost object—anything for which a cost measurement is desired.
  - Product: BMW X6
  - Department: Assembly
  - Project: R&D project on DVD system enhancement in BMW cars

# BASIC COST TERMINOLOGY, CONCLUDED

- ◉ **Cost accumulation**—the collection of cost data in an organized way by means of an accounting system.
- ◉ **Cost assignment**—a general term that encompasses the gathering of accumulated costs to a cost object in two ways:
  - Tracing accumulated costs with a direct relationship to the cost object and
  - Allocating accumulated costs with an indirect relationship to a cost object.

# DIRECT AND INDIRECT COSTS

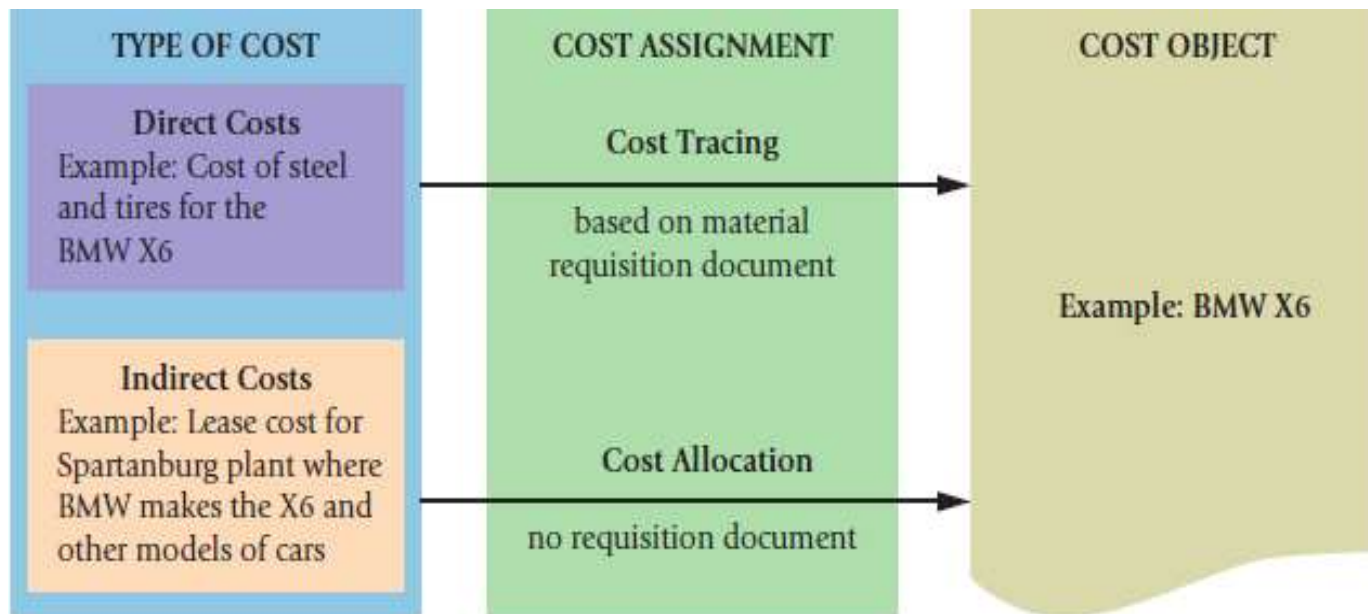
## ⦿ Direct costs

- can be conveniently and economically traced (tracked) to a cost object.

## ⦿ Indirect costs

- cannot be conveniently or economically traced (tracked) to a cost object.
- Instead of being traced, these costs are allocated to a cost object in a rational and systematic manner.

# COST ASSIGNMENT TO A COST OBJECT (BMW EXAMPLE)



# COST EXAMPLES

## ⦿ Direct Costs

- Parts (steel or tires for a car, as an example)
- Assembly line wages

## ⦿ Indirect Costs

- Electricity
- Rent
- Property taxes
- Plant administration expenses

# FACTORS AFFECTING DIRECT/INDIRECT COST CLASSIFICATION

- ⦿ The materiality of the cost in question.
- ⦿ The available information-gathering technology.
- ⦿ Design of operations.
  
- ⦿ NOTE: a specific cost may be both a direct cost of one cost object and an indirect cost of another cost object. Give Examples.

# COST BEHAVIOR

- ◉ Variable costs—change in total in proportion to changes in the related level of activity or volume of output produced.
- ◉ Fixed costs—remain unchanged in total, for a given time period, despite changes in the related level of activity or volume of output produced.
- ◉ Costs are fixed or variable only with respect to a specific activity or a given time period.



# COST BEHAVIOR, CONT'D

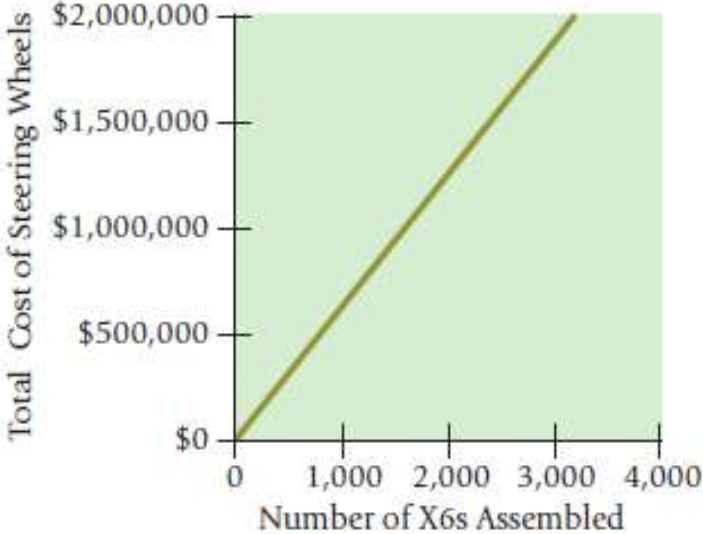
- ◉ Variable costs are constant on a per-unit basis. If a product takes 5 pounds of materials each, it stays the same per unit regardless if one, ten, or a thousand units are produced.
- ◉ Fixed costs per unit change inversely with the level of production. As more units are produced, the same fixed cost is spread over more and more units, reducing the cost per unit.

# COST BEHAVIOR SUMMARIZED

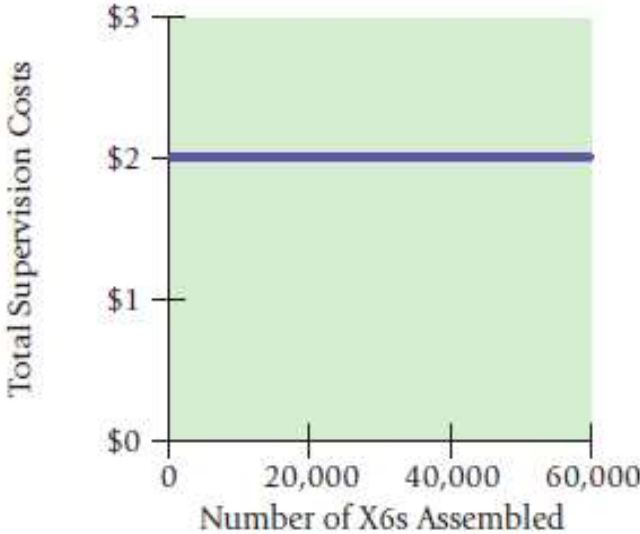
Variable Costs	<b><u>Total Dollars</u></b> Change in proportion with output More output = More cost	<b><u>Cost Per Unit</u></b> Unchanged in relation to output
Fixed Costs	Unchanged in relation to output	Change inversely with output More output = lower cost per unit

# GRAPHS OF VARIABLE AND FIXED COSTS

**PANEL A: Variable Cost of Steering Wheels at \$60 per BMW X6 Assembled**



**PANEL B: Supervision Costs for the BMW X6 assembly line (in millions)**



# OTHER COST CONCEPTS

## ◉ Cost driver—

- a variable, such as the level of activity or volume, that causally affects costs over a given time span.
- Examples.

## ◉ Relevant range—

- the band or range of normal activity level (or volume) in which there is a specific relationship between the level of activity (or volume) and the cost in question.
- For example, fixed costs are considered fixed only within the relevant range.

# MULTIPLE CLASSIFICATIONS OF COSTS

- Costs may be classified as:
  - Direct/Indirect, and
  - Variable/Fixed
- These multiple classifications give rise to important cost combinations:
  - Direct and variable
  - Direct and fixed
  - Indirect and variable
  - Indirect and fixed

# A COST CAVEAT

- Unit costs should be used cautiously. Because unit costs change with a different level of output or volume, it may be more prudent to base decisions on a total cost basis.
  - Unit costs that include fixed costs should always reference a given level of output or activity.
  - Unit costs are also called average costs.
  - Managers should think in terms of total costs rather than unit costs for many decisions.

# EXAMPLES OF THE MULTIPLE CLASSIFICATIONS OF COSTS

		Assignment of Costs to Cost Object	
		Direct Costs	Indirect Costs
Cost-Behavior Pattern	Variable Costs	<ul style="list-style-type: none"> <li>• Cost object: BMW X6s produced</li> <li>Example: Tires used in assembly of automobile</li> </ul>	<ul style="list-style-type: none"> <li>• Cost object: BMW X6s produced</li> <li>Example: Power costs at Spartanburg plant. Power usage is metered only to the plant, where multiple products are assembled.</li> </ul>
	Fixed Costs	<ul style="list-style-type: none"> <li>• Cost object: BMW X6s produced</li> <li>Example: Salary of supervisor on BMW X6 assembly line</li> </ul>	<ul style="list-style-type: none"> <li>• Cost object: BMW X6s produced</li> <li>Example: Annual lease costs at Spartanburg plant. Lease is for whole plant, where multiple products are produced.</li> </ul>

# DIFFERENT TYPES OF FIRMS

- ◉ Manufacturing-sector companies purchase materials and components and convert them into finished products.
- ◉ Merchandising-sector companies purchase and then sell tangible products without changing their basic form.
- ◉ Service-sector companies provide services (intangible products) like legal advice or audits.



# TYPES OF INVENTORY

- ◉ Direct materials—resources in-stock and available for use
- ◉ Work-in-process (or progress)—products started but not yet completed, often abbreviated as WIP
- ◉ Finished goods—products completed and ready for sale
  
- ◉ Note: Merchandising-sector companies hold only one type of inventory: merchandise inventory

# COMMONLY USED CLASSIFICATIONS OF MANUFACTURING COSTS

- Also known as inventoriable costs
  - Direct materials—acquisition costs of all materials that will become part of the cost object.
  - Direct labor—compensation of all manufacturing labor that can be traced to the cost object.
  - Indirect manufacturing—factory costs that are not traceable to the product in an economically feasible way.
    - Examples include lubricants, indirect manufacturing labor, utilities, and supplies.
    - Called **Manufacturing Overhead (MOH)**.

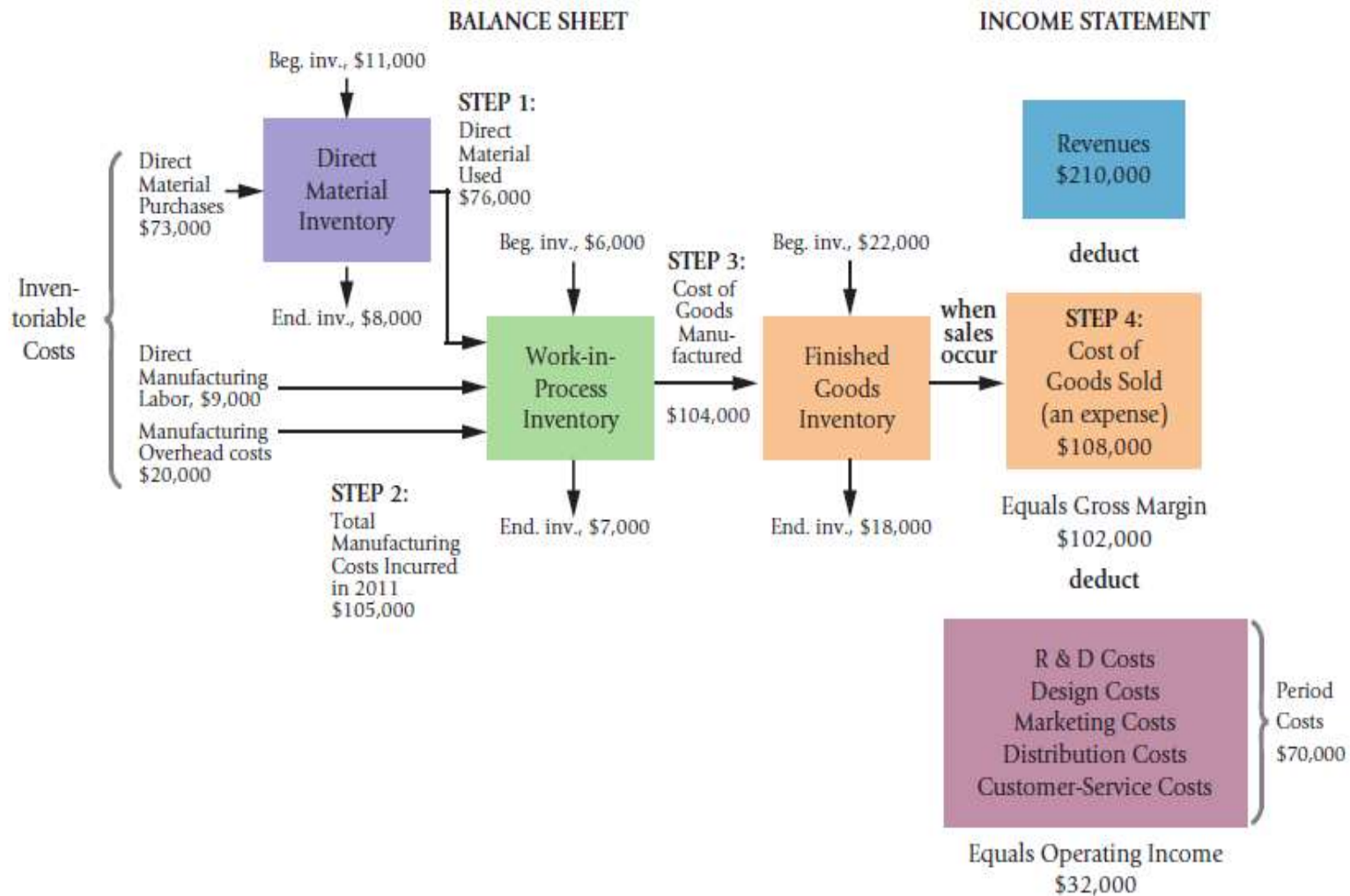
# INVENTORIABLE COSTS VS. PERIOD COSTS

- ◉ Inventoriable costs are all costs of a product that are considered assets in a company's balance sheet when the costs are incurred and that are expensed as cost of goods sold only when the product is sold. For manufacturing companies, all manufacturing costs are inventoriable costs.
- ◉ Period costs are all costs in the income statement other than cost of goods sold. They are treated as expenses of the accounting period in which they are incurred.

# COST FLOWS

- The Cost of Goods Manufactured and the Cost of Goods Sold section of the Income Statement are accounting representations of the actual flow of costs through a production system.
  - Note how inventoriable costs to through the balance sheet accounts of work-in-process and finished goods inventory before entering the cost of goods sold in the income statement.

# COST FLOWS ILLUSTRATED



# MULTIPLE-STEP INCOME STATEMENT, PART ONE

STEP 4

	A	B	C	D
1	<b>PANEL A: INCOME STATEMENT</b>			
2	<b>Cellular Products</b>			
3	<b>Income Statement</b>			
4	<b>For the Year Ended December 31, 2014 (in thousands)</b>			
5	Revenues		\$210,000	
6	Cost of goods sold:			
7	Beginning finished goods inventory, January 1, 2014	\$ 22,000		
8	Cost of goods manufactured (see Panel B)	<u>104,000</u>	←	
9	Cost of goods available for sale	126,000		
10	Ending finished goods inventory, December 31, 2014	<u>18,000</u>		
11	Cost of goods sold		<u>108,000</u>	
12	Gross margin (or gross profit)		102,000	
13	Operating costs:			
14	R&D, design, mktg., dist., and cust.-service cost	70,000		
15	Total operating costs		<u>70,000</u>	
16	Operating income		<u>\$ 32,000</u>	
17				

# MULTIPLE-STEP INCOME STATEMENT, PART TWO

18	PANEL B: COST OF GOODS MANUFACTURED						
19	Cellular Products						
20	Schedule of Cost of Goods Manufactured <sup>a</sup>						
21	For the Year Ended December 31, 2014 (in thousands)						
22	Direct materials:						
23	Beginning inventory, January 1, 2014		\$11,000				
24	Purchases of direct materials		<u>73,000</u>				
25	Cost of direct materials available for use		84,000				
26	Ending inventory, December 31, 2014		<u>8,000</u>				
27	Direct materials used			\$ 76,000			
28	Direct manufacturing labor			9,000			
29	Manufacturing overhead costs:						
30	Indirect manufacturing labor		\$ 7,000				
31	Supplies		2,000				
32	Heat, light, and power		5,000				
33	Depreciation—plant building		2,000				
34	Depreciation—plant equipment		3,000				
35	Miscellaneous		<u>1,000</u>				
36	Total manufacturing overhead costs			<u>20,000</u>			
37	Manufacturing costs incurred during 2014			105,000			
38	Beginning work-in-process inventory, January 1, 2014			<u>6,000</u>			
39	Total manufacturing costs to account for			111,000			
40	Ending work-in-process inventory, December 31, 2014			<u>7,000</u>			
41	Cost of goods manufactured (to income statement)			<u>\$104,000</u>			
42	<sup>a</sup> Note that this schedule can become a schedule of cost of goods manufactured and sold simply by including the beginning and ending finished goods inventory figures in the supporting schedule rather than in the body of the income statement.						

# OTHER COST CONSIDERATIONS

- ◉ Prime cost is a term referring to all direct manufacturing costs (materials and labor).
- ◉ Conversion cost is a term referring to direct labor and indirect manufacturing costs.
- ◉ Overtime labor costs are considered part of indirect overhead costs.



THANK YOU