

Cost Behavior

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

Cost Behavior

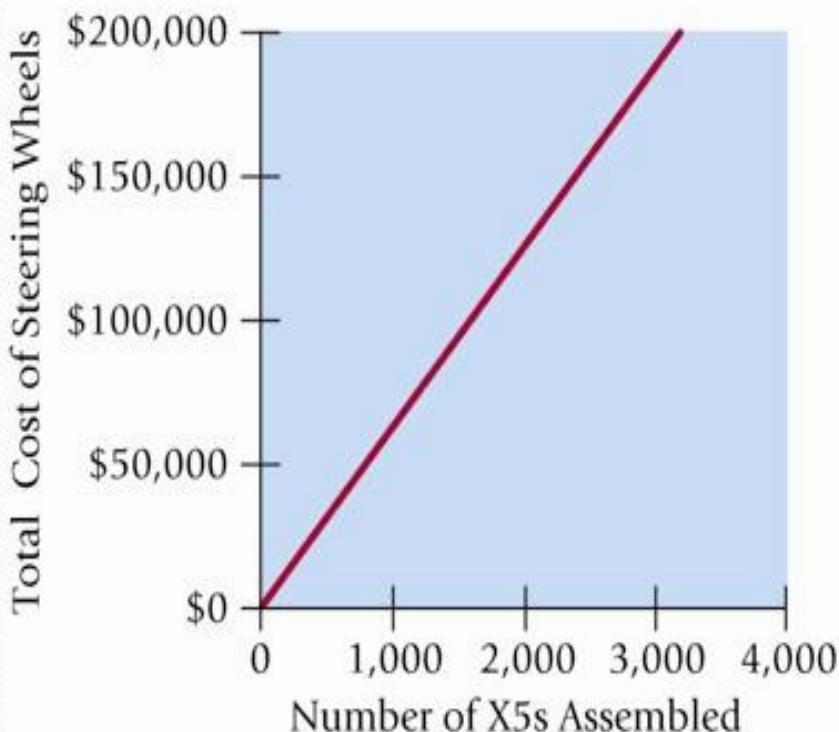
- Variable costs are constant on a per-unit basis. If a product takes 5 pounds of materials each, it stays the same per unit regardless if one, ten, or a thousand units are produced.
- Fixed costs change inversely with the level of production. As more units are produced, the same fixed cost is spread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

Cost Behavior Summarized

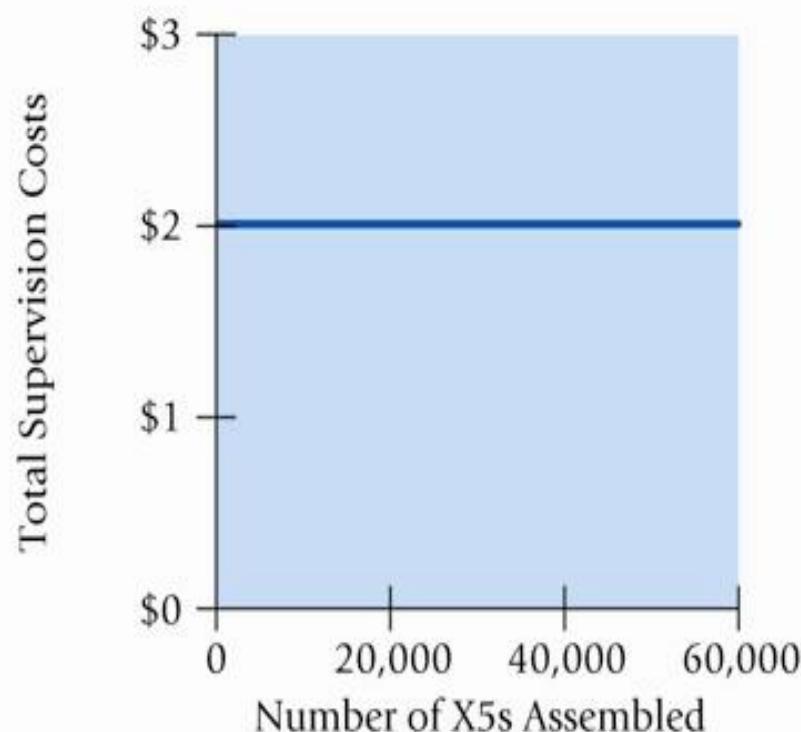
	Total Dollars	Cost Per Unit
Variable Costs	<p>Change in proportion with output</p> <p>More output = More cost</p>	Unchanged in relation to output
Fixed Costs	<p>Unchanged in relation to output</p>	<p>Change inversely with output</p> <p>More output = lower cost per unit</p>

Cost Behavior Visualized

**PANEL A: Variable Cost of Steering Wheels
at \$60 per BMW X5 Assembled**



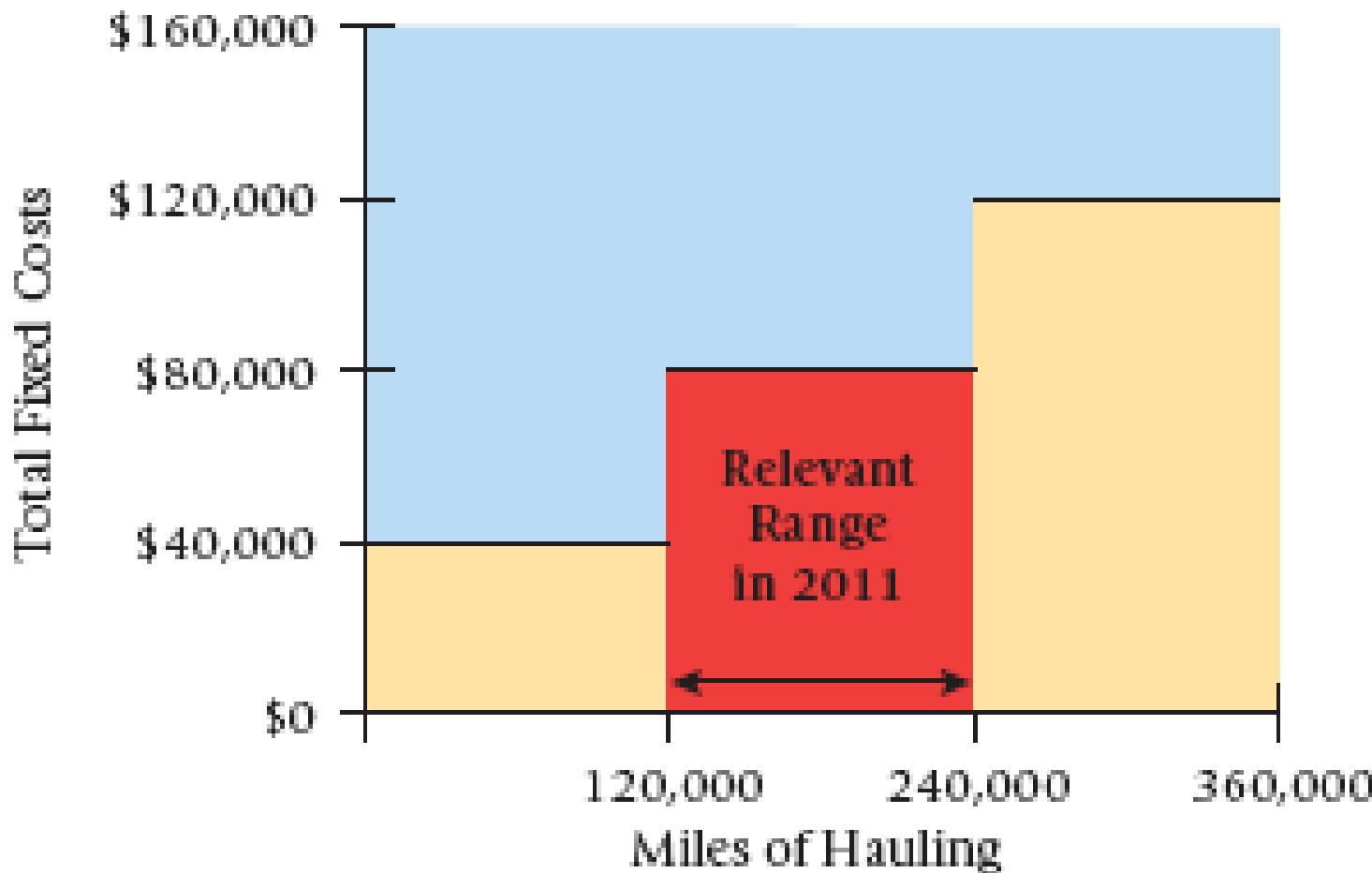
**PANEL B: Supervision Costs for the BMW X5
assembly line (in millions)**



Other Cost Concepts

- Cost driver—a variable that causally affects costs over a given time span
- Relevant range—the band of normal activity level (or volume) in which there is a specific relationship between the level of activity (or volume) and a given cost
 - For example, fixed costs are considered fixed only within the relevant range.

Relevant Range Visualized



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 dollar 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.

Multiple Classification 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

Multiple Classification of Costs, Visualized

		Assignment of Costs to Cost Object	
Cost- Behavior Pattern	Variable Costs	Direct Costs	Indirect Costs
		<ul style="list-style-type: none">• Cost object: BMW X5s produced <p>Example: Tires used in assembly of automobile</p>	<ul style="list-style-type: none">• Cost object: BMW X5s produced <p>Example: Power costs at Spartanburg plant. Power usage is metered only to the plant, where multiple products are assembled.</p>
	Fixed Costs	<ul style="list-style-type: none">• Cost object: BMW X5s produced <p>Example: Salary of supervisor on BMW X5 assembly line</p>	<ul style="list-style-type: none">• Cost object: BMW X5s produced <p>Example: Annual lease costs at Spartanburg plant. Lease is for whole plant, where multiple products are produced.</p>