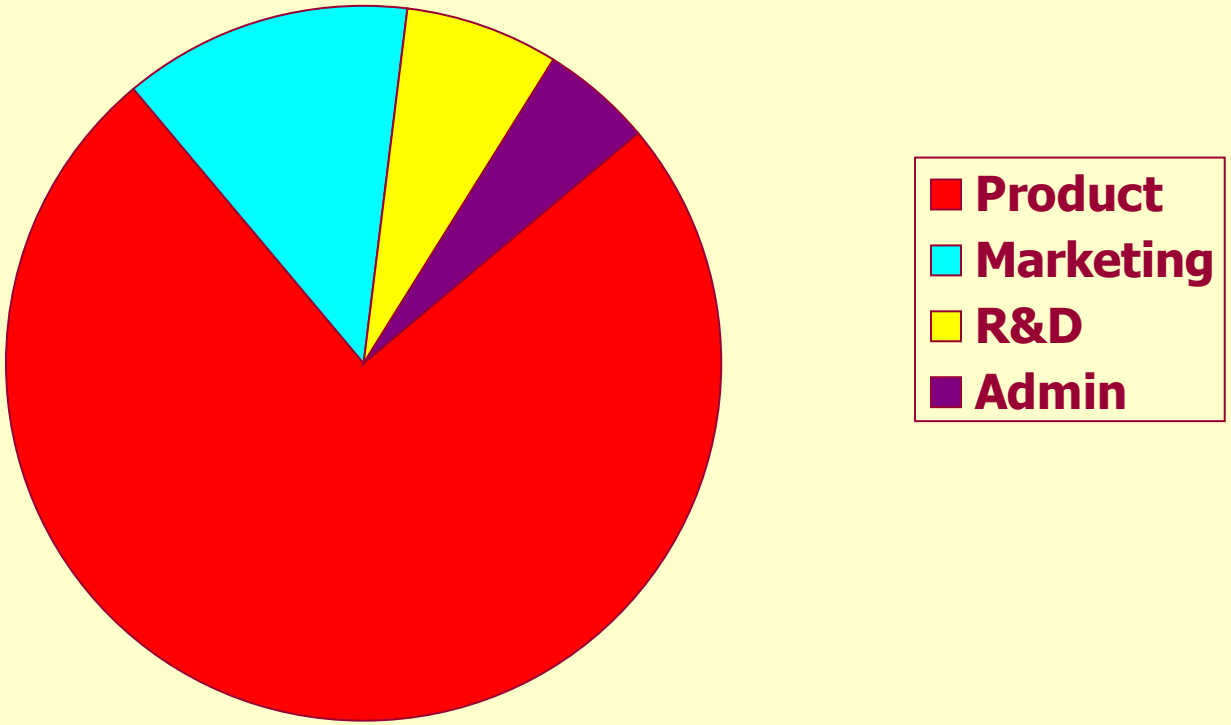
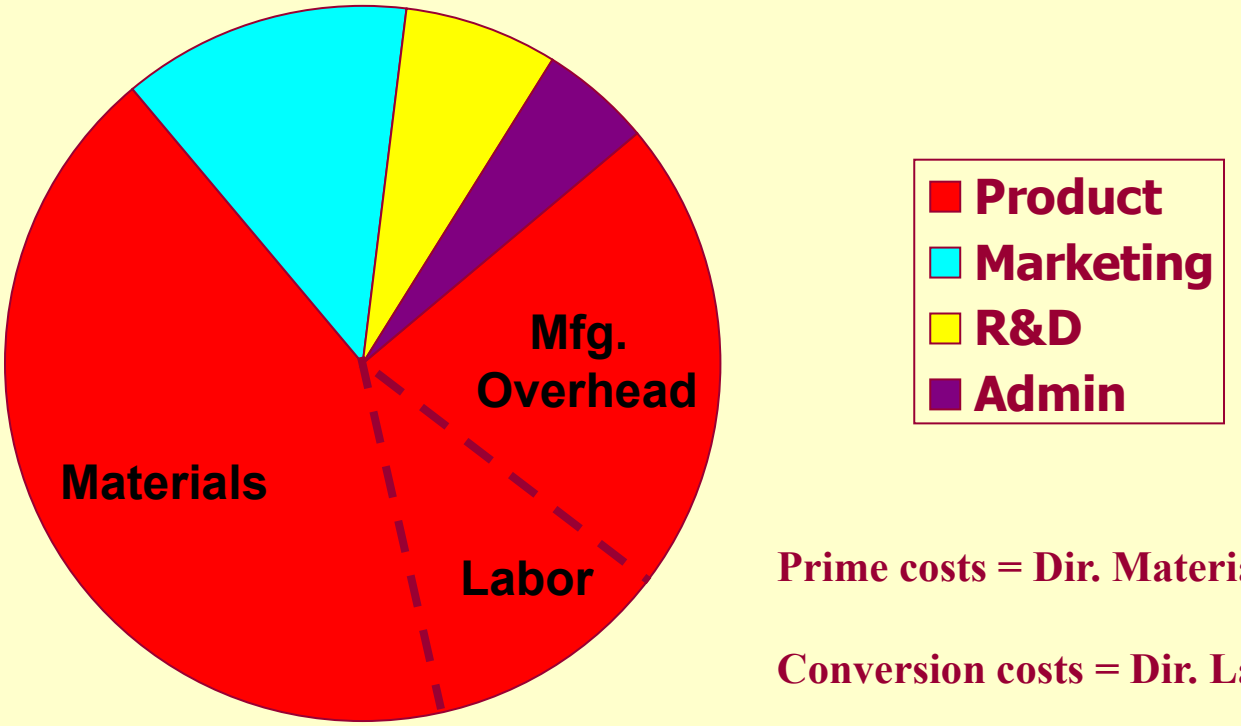
COST CONCEPTS AND CLASSIFICATIONS

COST CLASSIFICATIONS
Functional



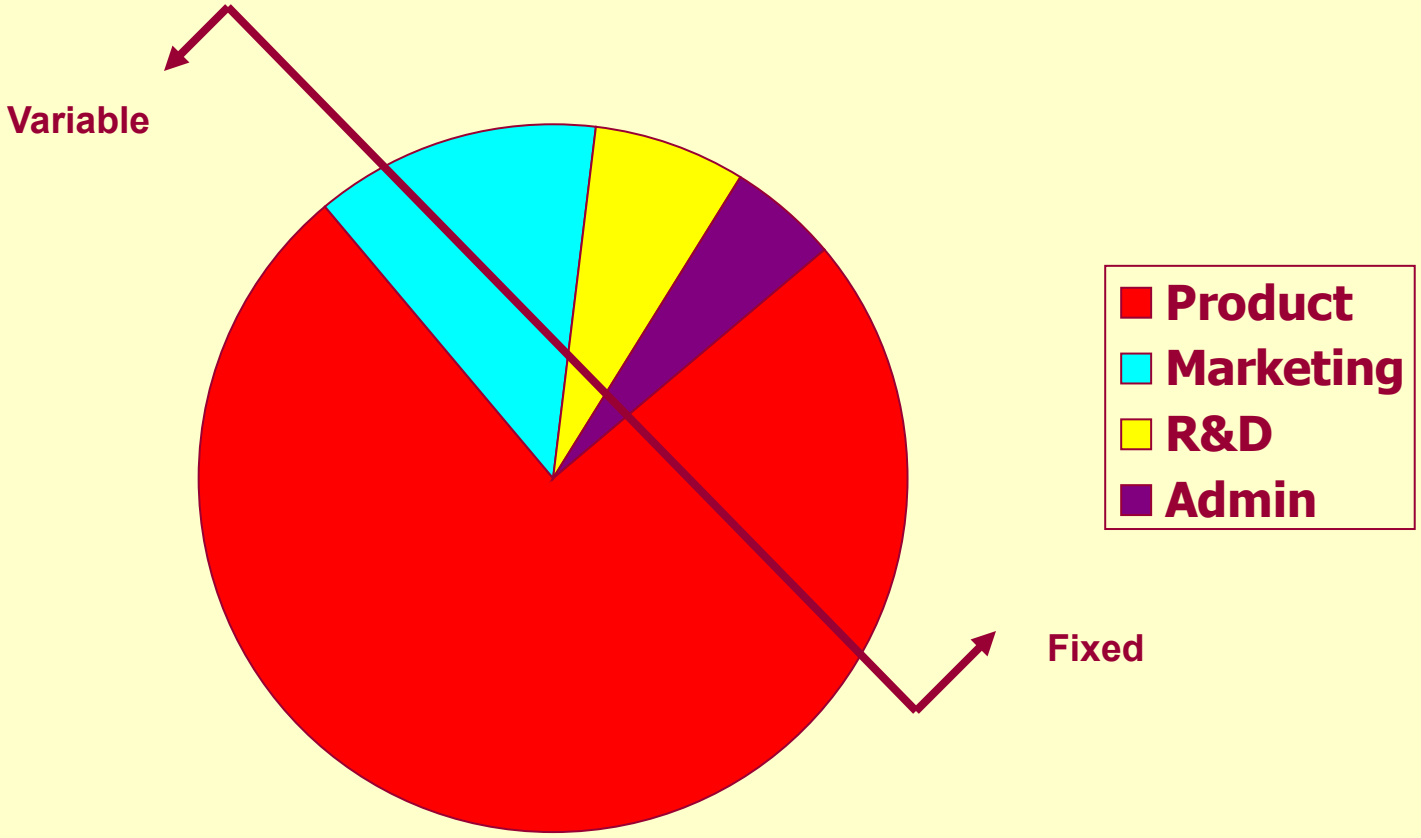
COST CLASSIFICATIONS
Functional – Product Detail



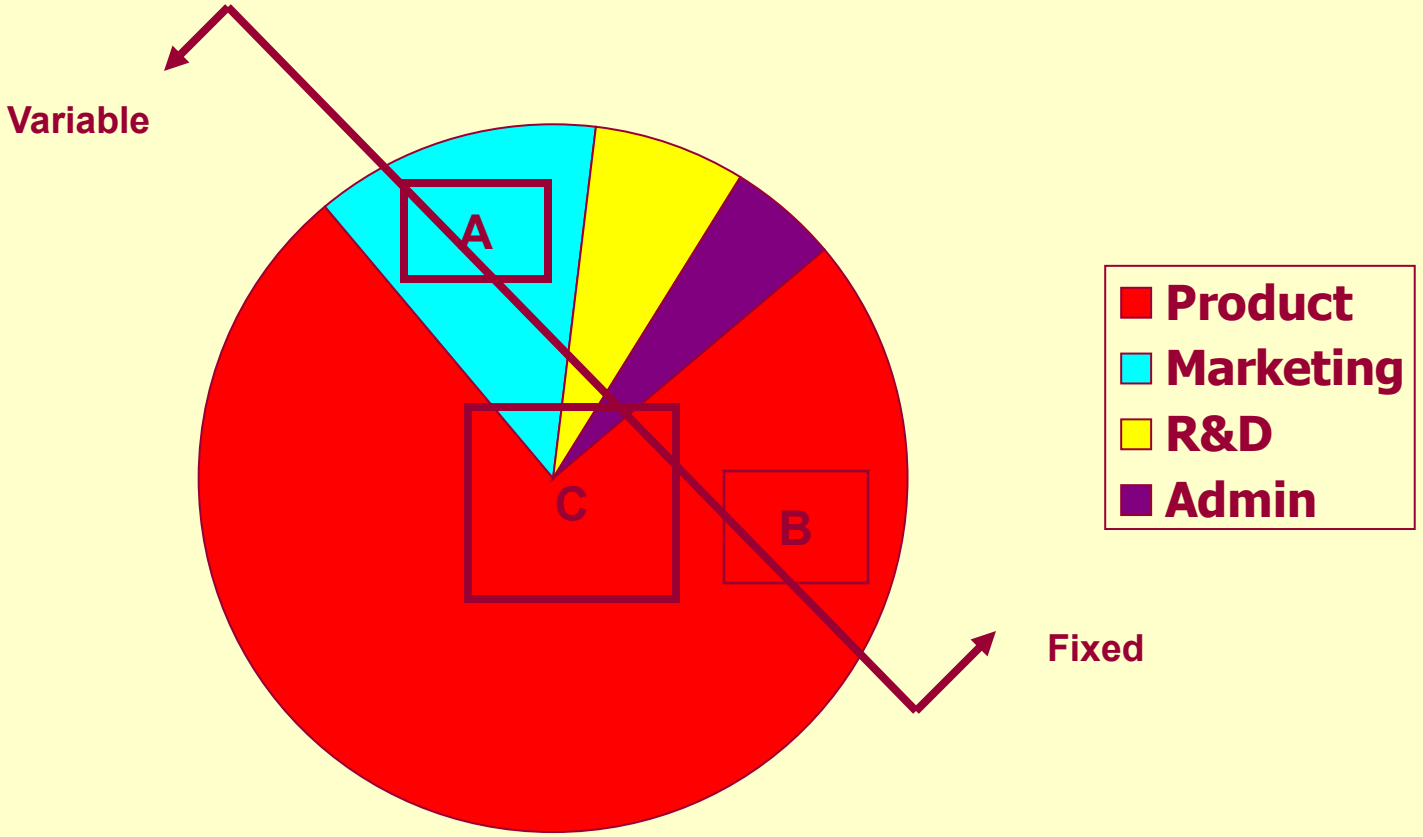
Prime costs = Dir. Materials + Dir. Labor

Conversion costs = Dir. Labor + Total Mfg. Overhead

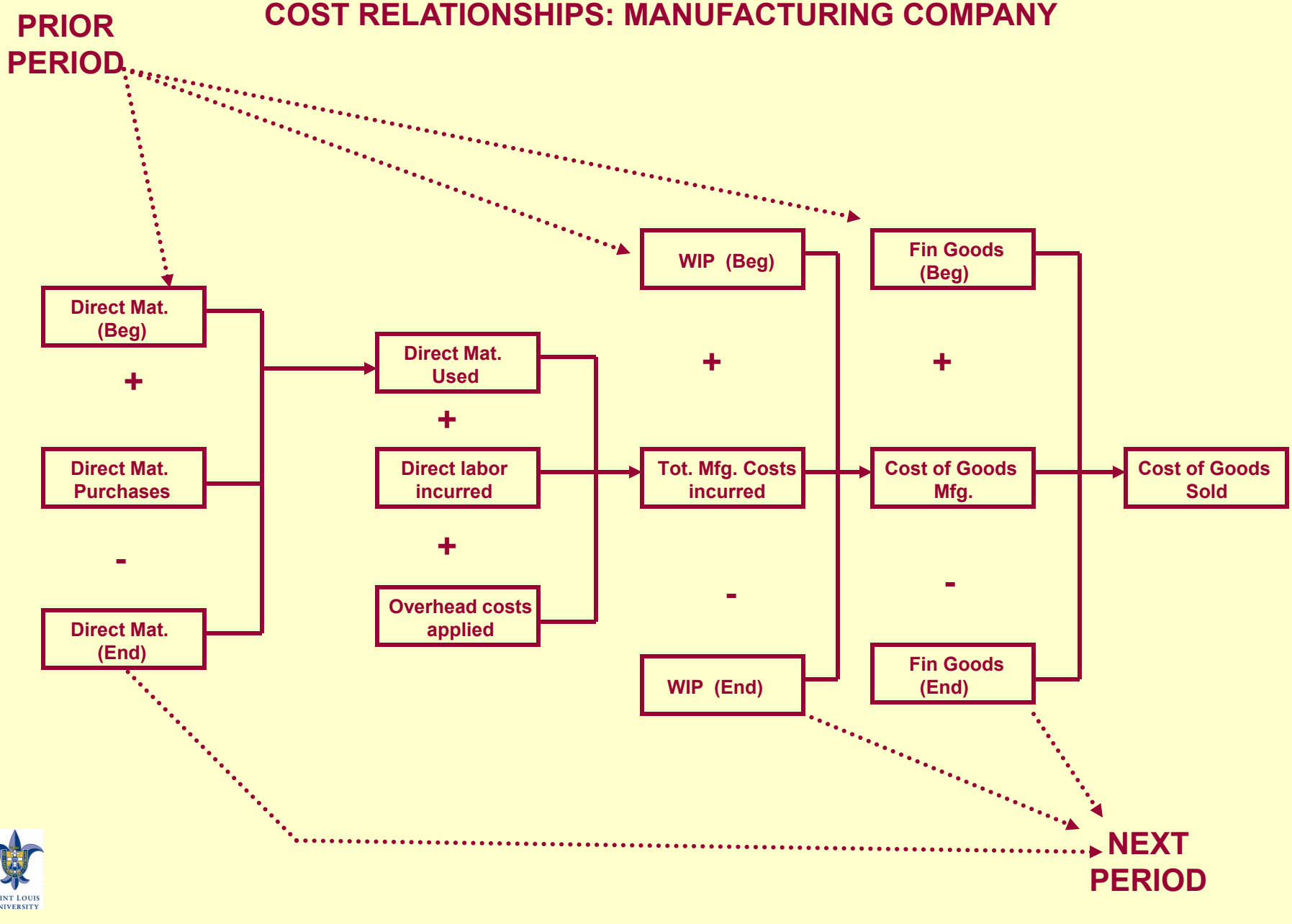
COST CLASSIFICATIONS
Behavioral



COST CLASSIFICATIONS
Responsibility

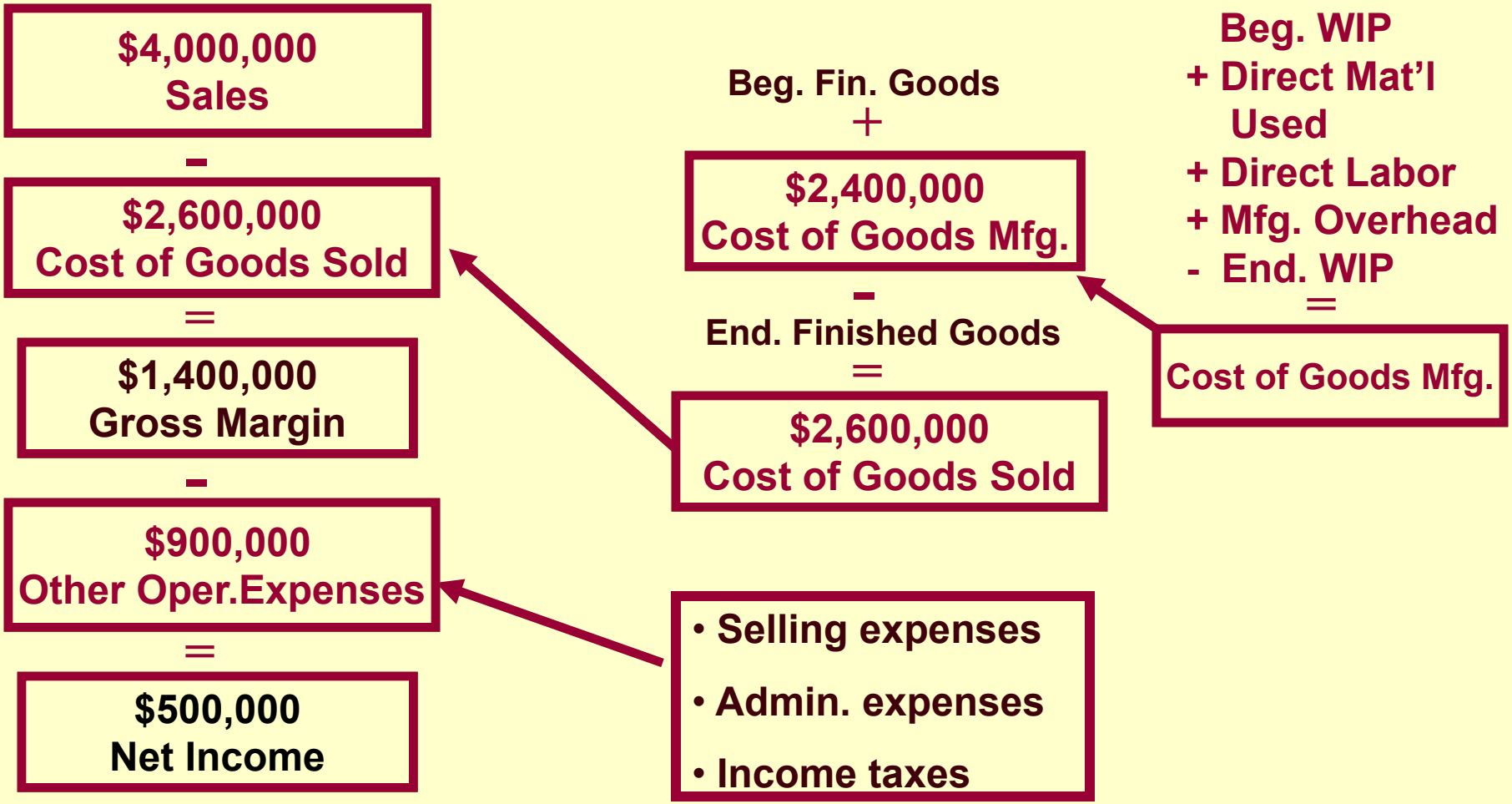


COST RELATIONSHIPS: MANUFACTURING COMPANY



Income Statement

Manufacturing Company



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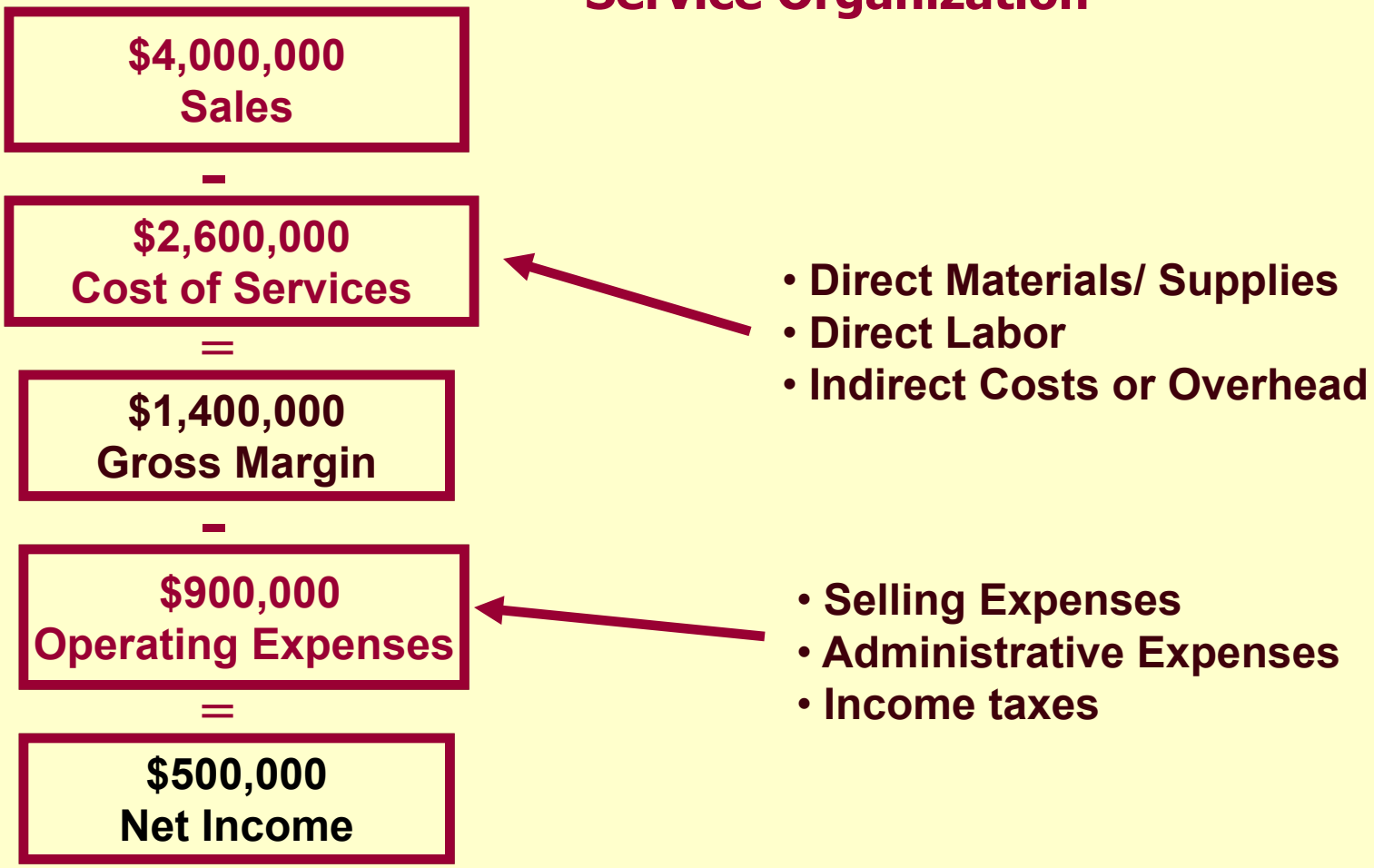
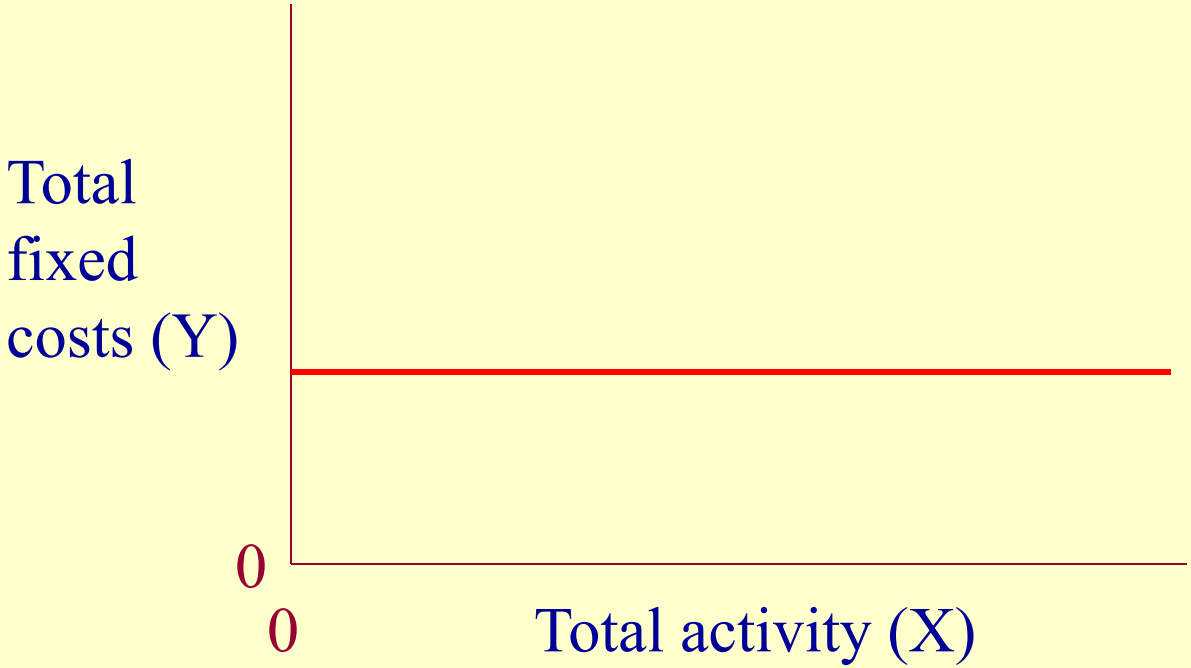
INCOME STATEMENT

Service Organization



Basic Cost Behavior Patterns

Total fixed costs do not respond to changes in unit level cost drivers within a period.



Fixed Costs

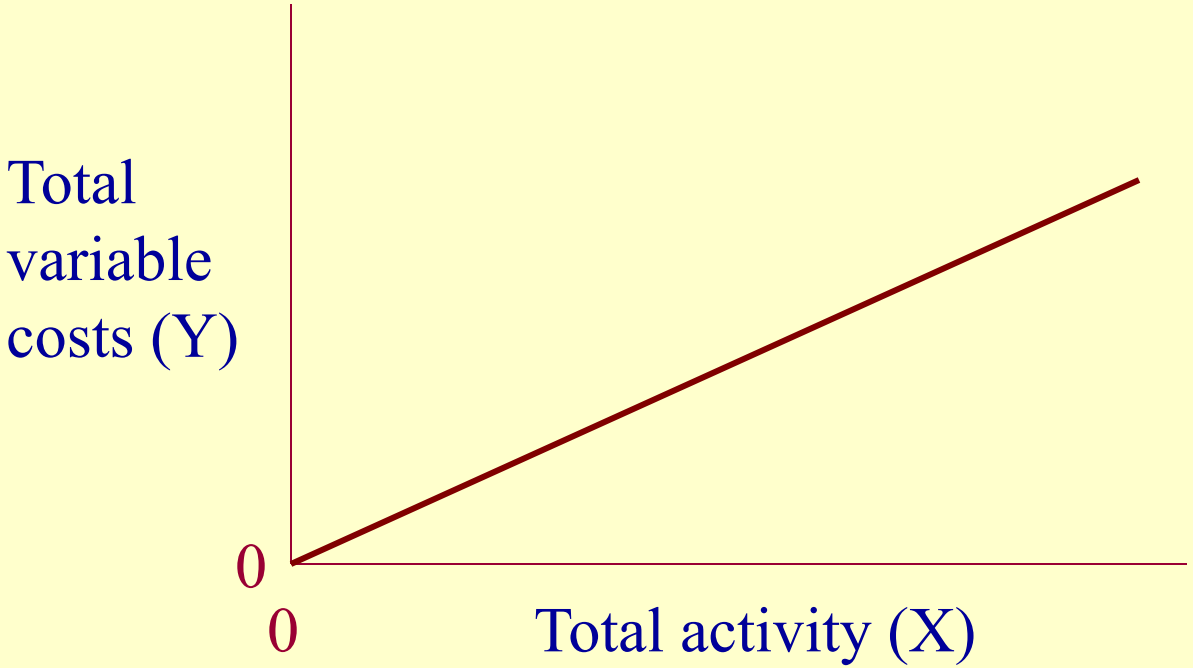
Committed fixed costs are required to maintain the current service or production capacity to fill previous legal commitments.

Fixed Costs

Discretionary fixed costs are set at a fixed amount each year at the discretion of management.

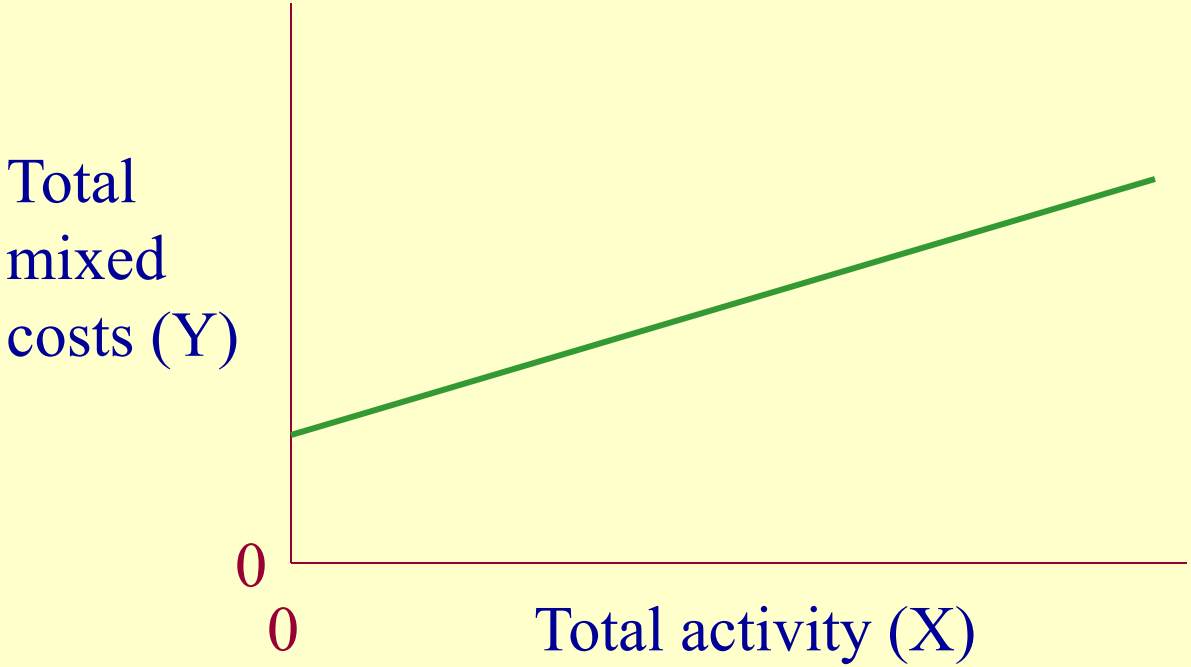
Basic Cost Behavior Patterns

Total variable costs increase in proportion to increases in unit level cost drivers.



Basic Cost Behavior Patterns

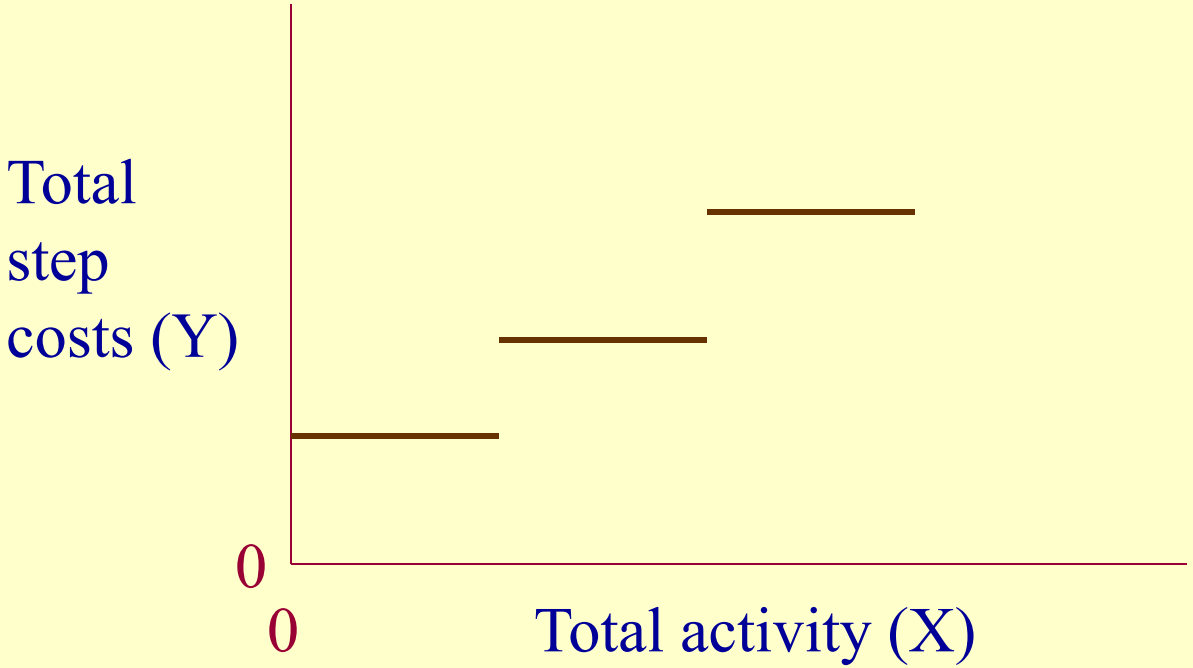
Total mixed costs contain fixed and variable cost elements. They increase, but not in direct proportion to increases in unit level cost drivers.



Sometimes called **semivariable costs**

Basic Cost Behavior Patterns

Total step costs are constant over a range of activity for a unit level cost driver but moves to a different amount at different ranges.

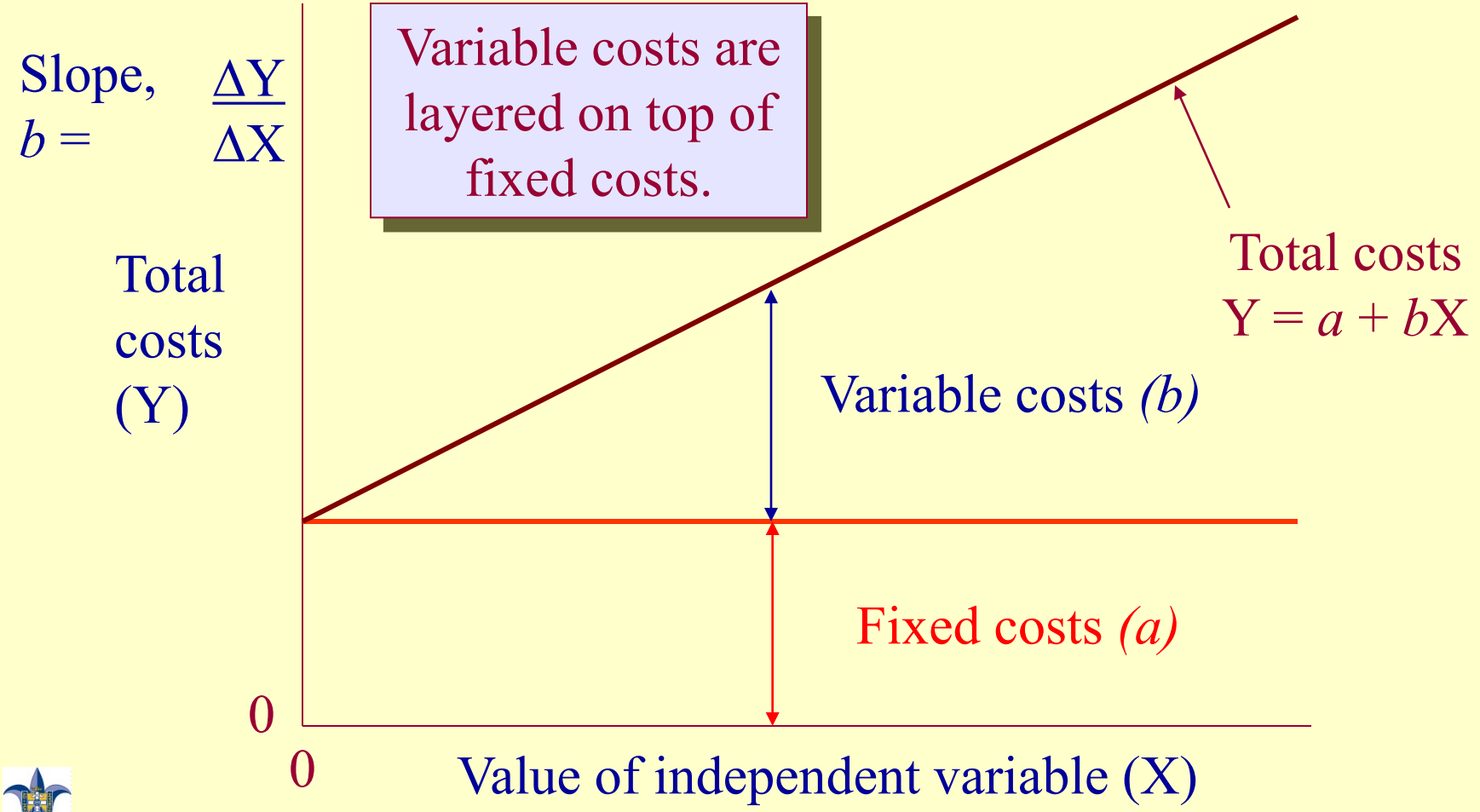


Basic Cost Behavior Patterns

Pizza Hut

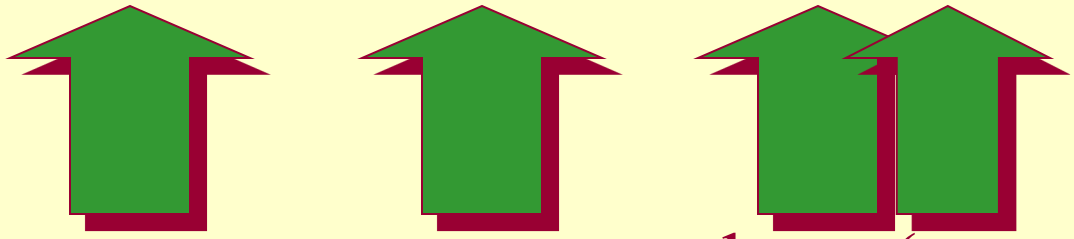
- **Variable costs--**The cost of the ingredients used to make the pizzas
- **Fixed costs--**Depreciation, property taxes, and property insurance
- **Mixed costs**--Cost of electricity
- **Step costs**--Employee wages

Total Cost Behavior With A Single Unit Level Cost Driver



Equation for Total Costs

$$Y = a + bX$$



total costs

vertical axis intercept (an approximation of fixed costs)

slope (an approximation of variable costs per unit of X)

value of independent variable

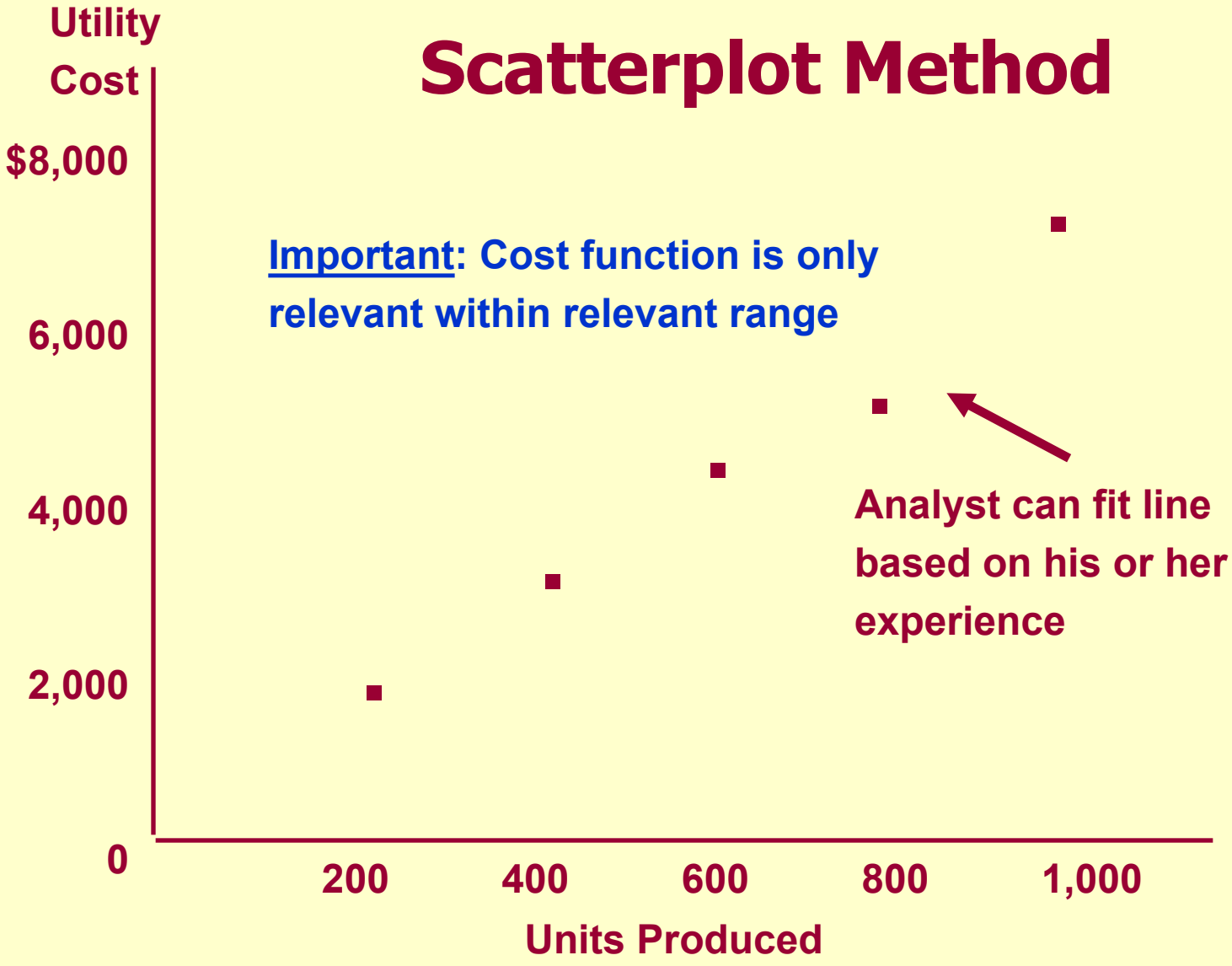
Methods for Separating Mixed Cost Into Fixed and Variable Components

- Scatterplot Method
- The High-Low Method
- Specific quantitative methods
  - The Method of Least Squares

Mixed Costs: An Example

Month	Utility Costs	Unit Produced
January	$2,000	200
February	2,500	400
March	4,500	600
April	5,000	800
May	7,500	1,000

Scatterplot Method



High-Low Cost Estimation

		Number of Shipments	Packaging Costs
Low activity period	January	6,000	$17,000
	February	9,000	26,000
High activity period	March	12,000	32,000
	April	10,000	20,000

$$\text{Variable cost per unit } (b) = \frac{\text{Difference in total costs}}{\text{Difference in activity}}$$

Continued on next slide

$$b = \frac{\$32,000 - \$17,000}{12,000 - 6,000}$$

High-Low Cost Estimation

Variable cost per unit (b) = $2.50

January

a = Total costs - Variable costs

$17,000 = a + ($2.50 x 6,000 shipments)

a = $2,000

March

$32,000 = a + ($2.50 x 12,000 shipments)

a = $2,000

Same answer!

High-Low Cost Estimation

$$Y = \$2{,}000 \times \$2.50X$$

Total packing department costs

Number of shipments

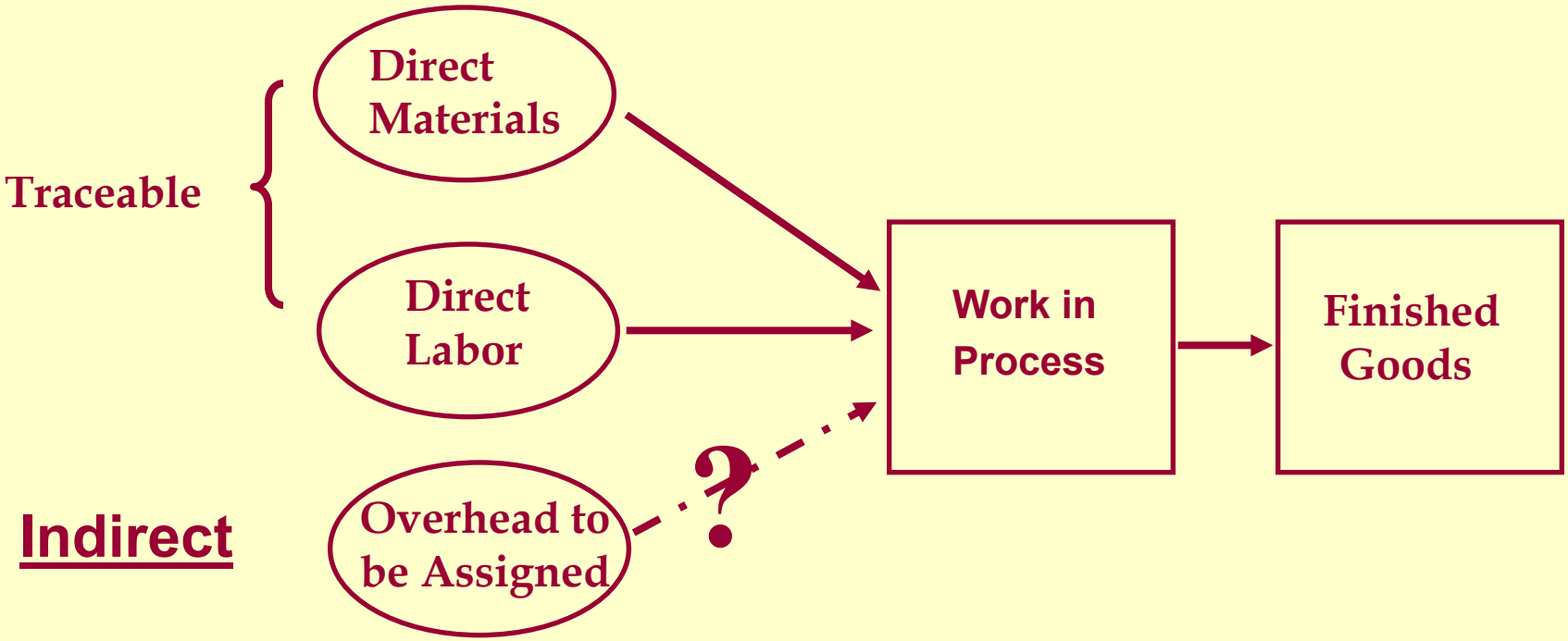
Composition of Manufacturing Costs

Direct materials, the cost of primary raw materials converted into finished goods. The word "direct" indicates costs that are easily or directly traced to a finished product or service.

Manufacturing overhead includes all manufacturing costs other than direct materials and direct labor.

Direct labor, the wages earned by production employees for the time they spend converting raw materials into finished products.

Conventional Product Costing

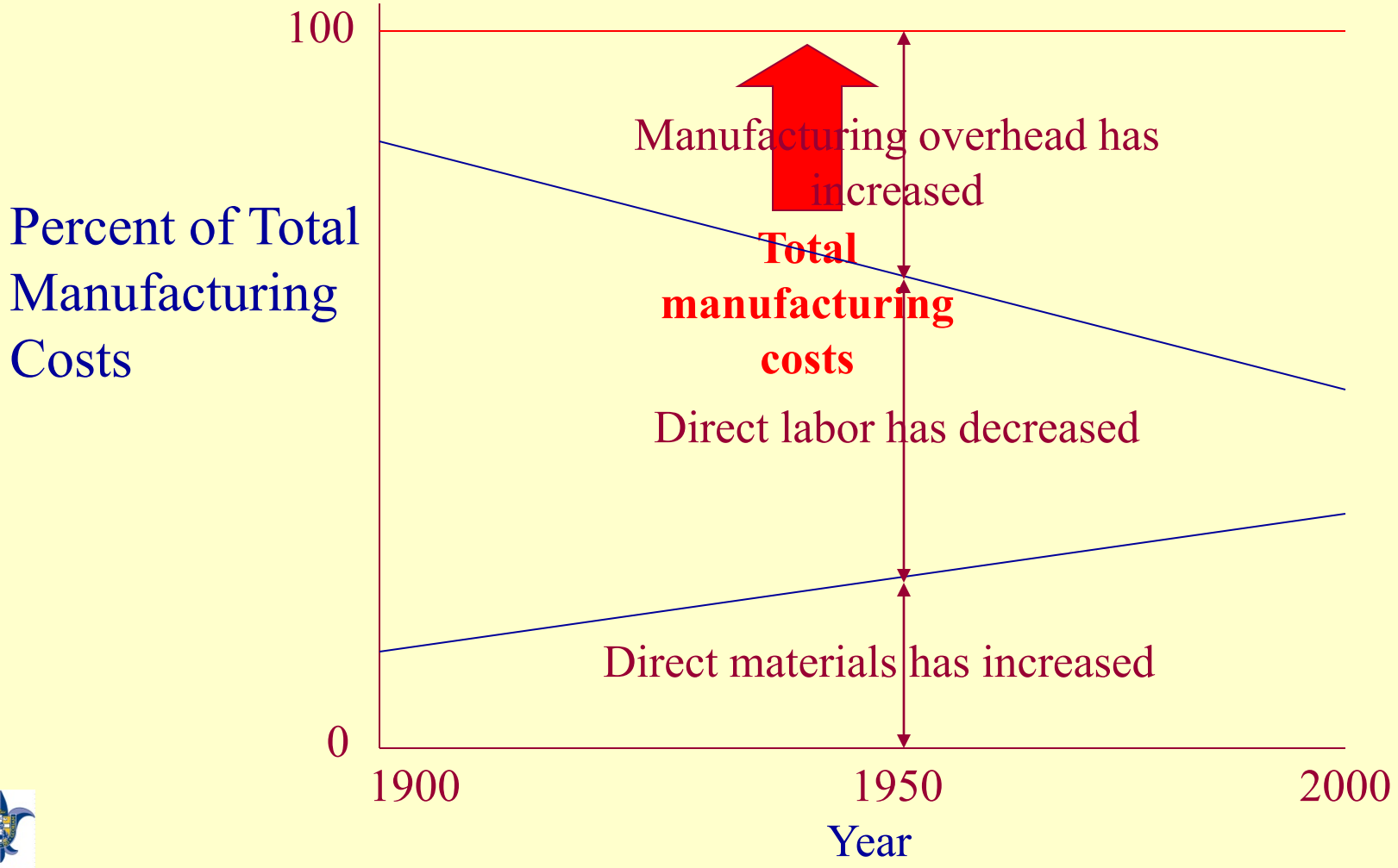


Composition of Manufacturing Costs

- Prime costs = Direct materials + Direct labor

- Conversion costs = Direct labor + Manufacturing overhead (fixed & variable)

Changing Composition of Total Manufacturing Costs



The Basic Concept of Overhead Application

Applied overhead = Overhead rate x Actual activity

Key considerations

- **Applied overhead is the basis for computing per-unit overhead cost**
- **Applied overhead is rarely equal to a period's actual overhead costs.**

CONVENTIONAL PRODUCT COSTING
Overhead Application

$$\text{Predetermined Overhead Rate} = \frac{\text{Total budgeted overhead}}{\text{Expected level of activity *}}$$

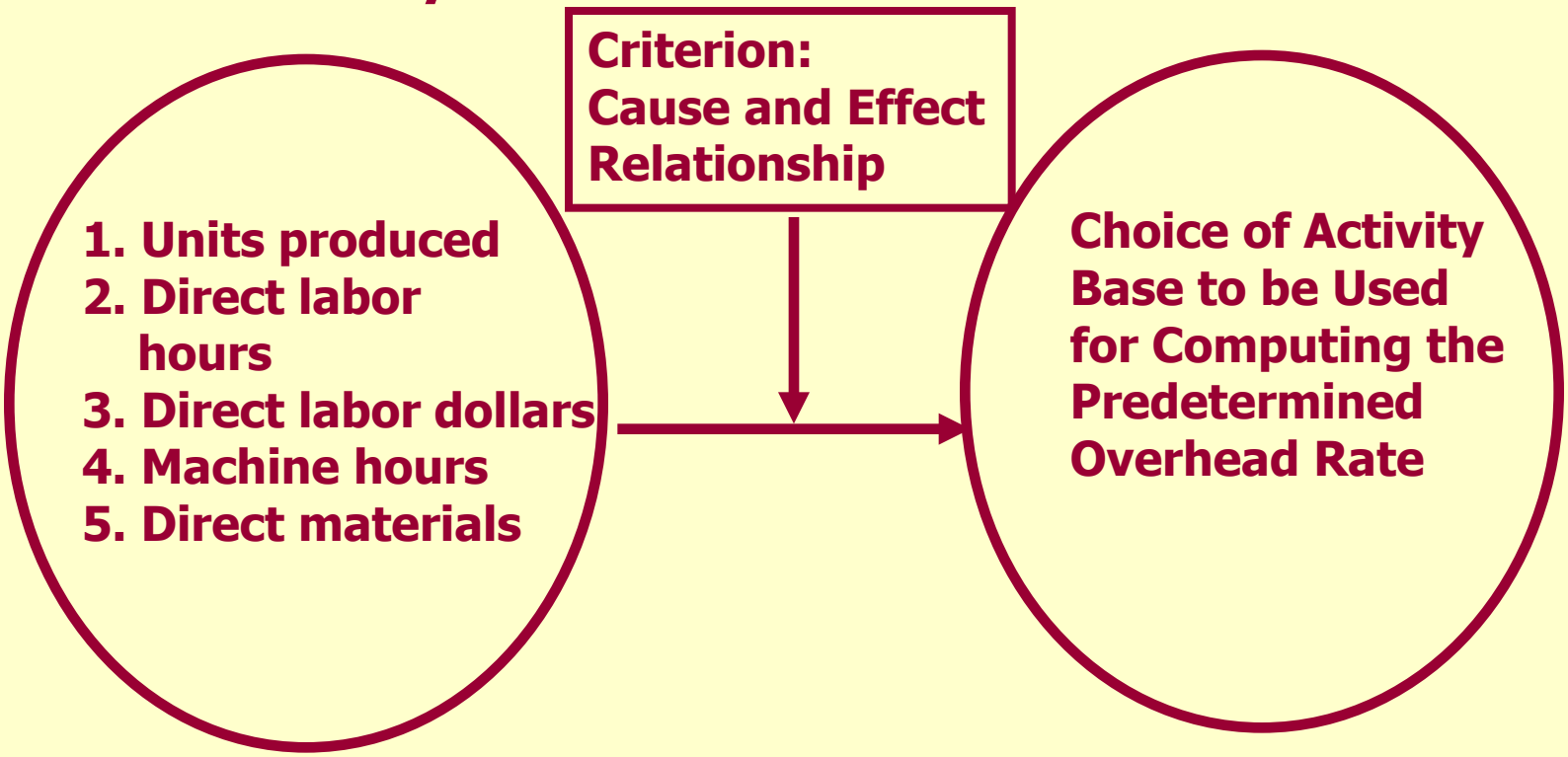
- Conventional costing typically used volume (or a surrogate for volume such as DLH)

- Problems
  - Budgeted overhead contains both fixed and variable costs

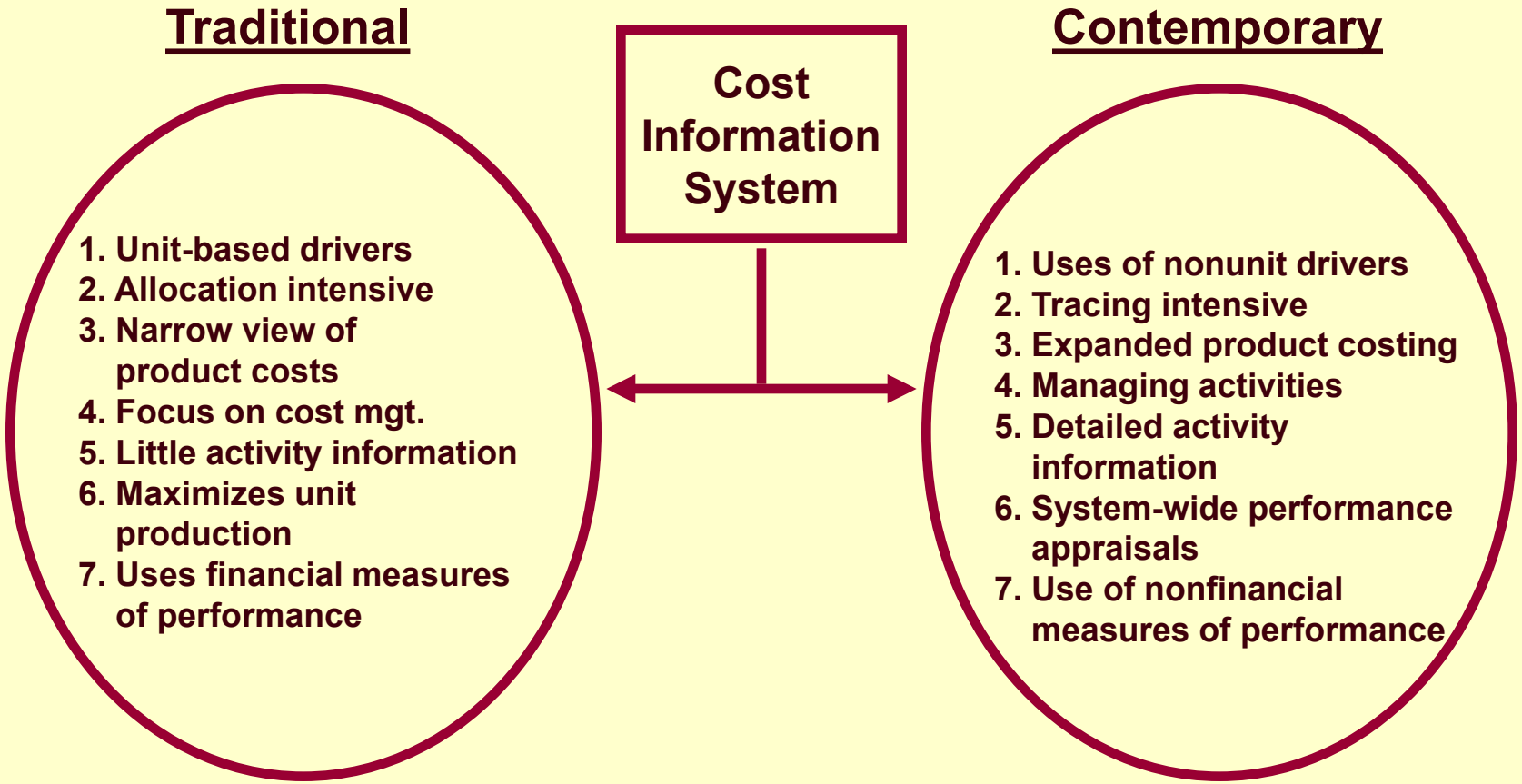
  - Selection of expected level of activity

Select An Appropriate Activity Base

Possible Measures of Production Activity



Comparison of Traditional and Contemporary Cost Management Systems



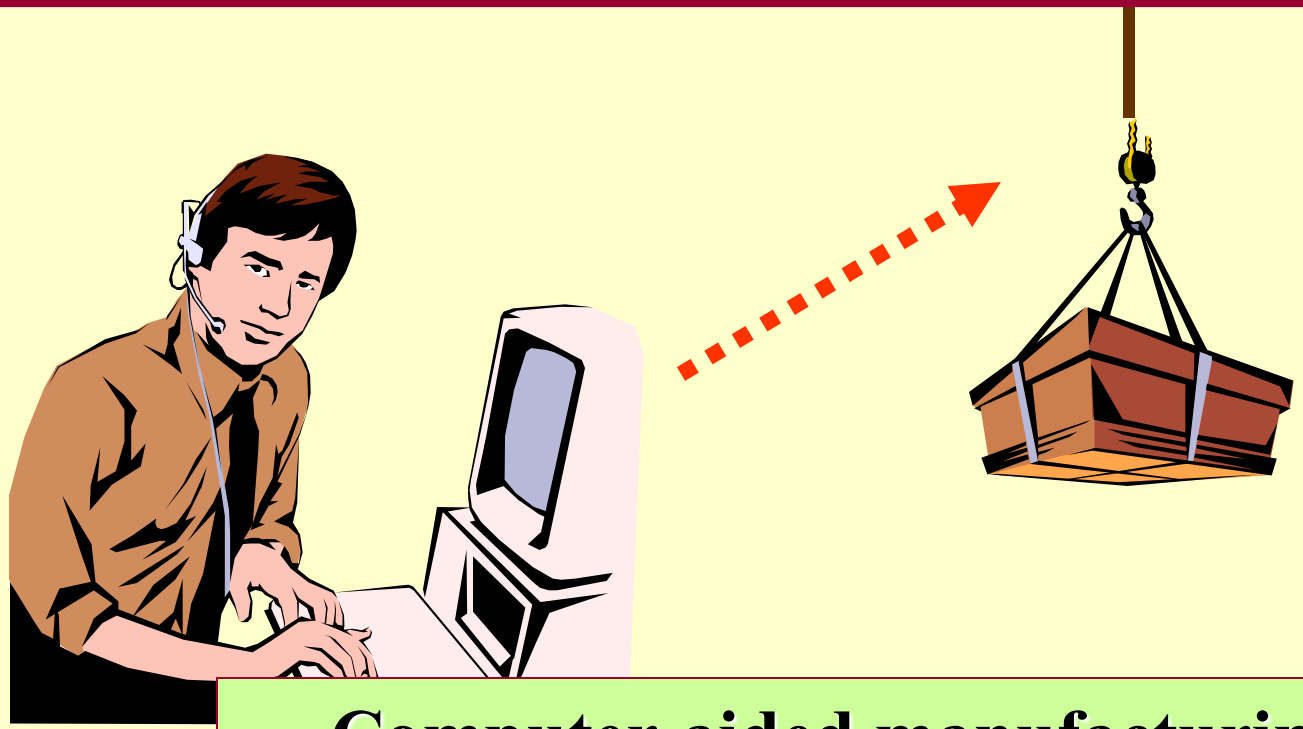
Impact of Computers on Manufacturing

Automatic identification systems (AIS) allow inventory and production information to be entered into a computer without writing or keying.

Impact of Computers on Manufacturing

Computer-aided design (CAD) involves the use of computers to design products.

Impact of Computers on Manufacturing

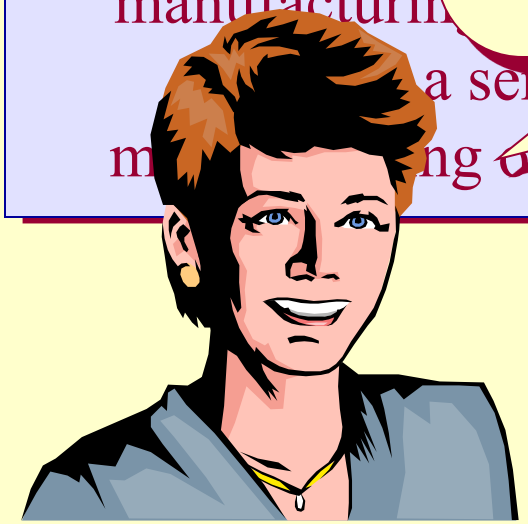


Computer-aided manufacturing (CAM) involves the use of computers to control machine operations.

Impact of Computers on Manufacturing

In their advanced stages, factories utilizing flexible manufacturing systems and computer-integrated manufacturing are sometimes referred to as "lights-out factories"because they ***can be operated in the dark***.

Flexible ma
systems (FMS)
of compu
manufacturin
a serie
m ng op



extension of CAD, CAM, and FMS concepts to a completed automated and computer-controlled factory.

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