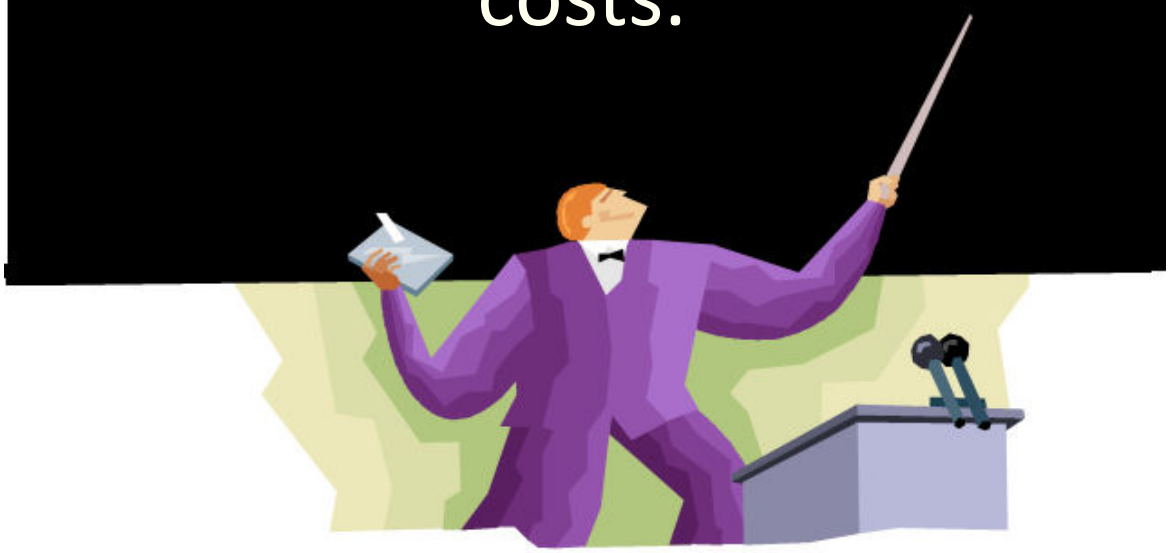
Reference Book: Managerial Accounting by Garrison, Noreen, and Brewer (14th Edition)

Cost Behavior: Analysis and Use

Learning Objective 1

Understand how fixed and variable costs behave and how to use them to predict costs.



Cost Behavior and Its Significance

Cost Behavior: It is defined as how a cost will react or change as changes takes place in the level of business activity.

An understanding of cost behavior is the key to many decisions in an organizations.

Managers who understand how costs behave are better able to predict future costs.

For example, a decision to double production of a particular product might result in the incurrence of far greater costs that could be generated in additional revenues.

That's why, a manager must be able to accurately predict what costs will be at various activity levels.

Types of Cost Behavior Patterns

- There are three cost behavior patterns – **fixed, variable,** and **mixed**.
- The relative proportion of each type of cost present in a firm/organization is known as cost structure.
- For example, a firm might have many fixed costs but few variable costs or mixed costs.
- It also might have many variable costs but few fixed costs.
- A firm's cost structure is very significant in that the decision making process can be affected by the relative amount of fixed and variable cost that is present in the cost structure.

Types of Cost Behavior Patterns – Variable

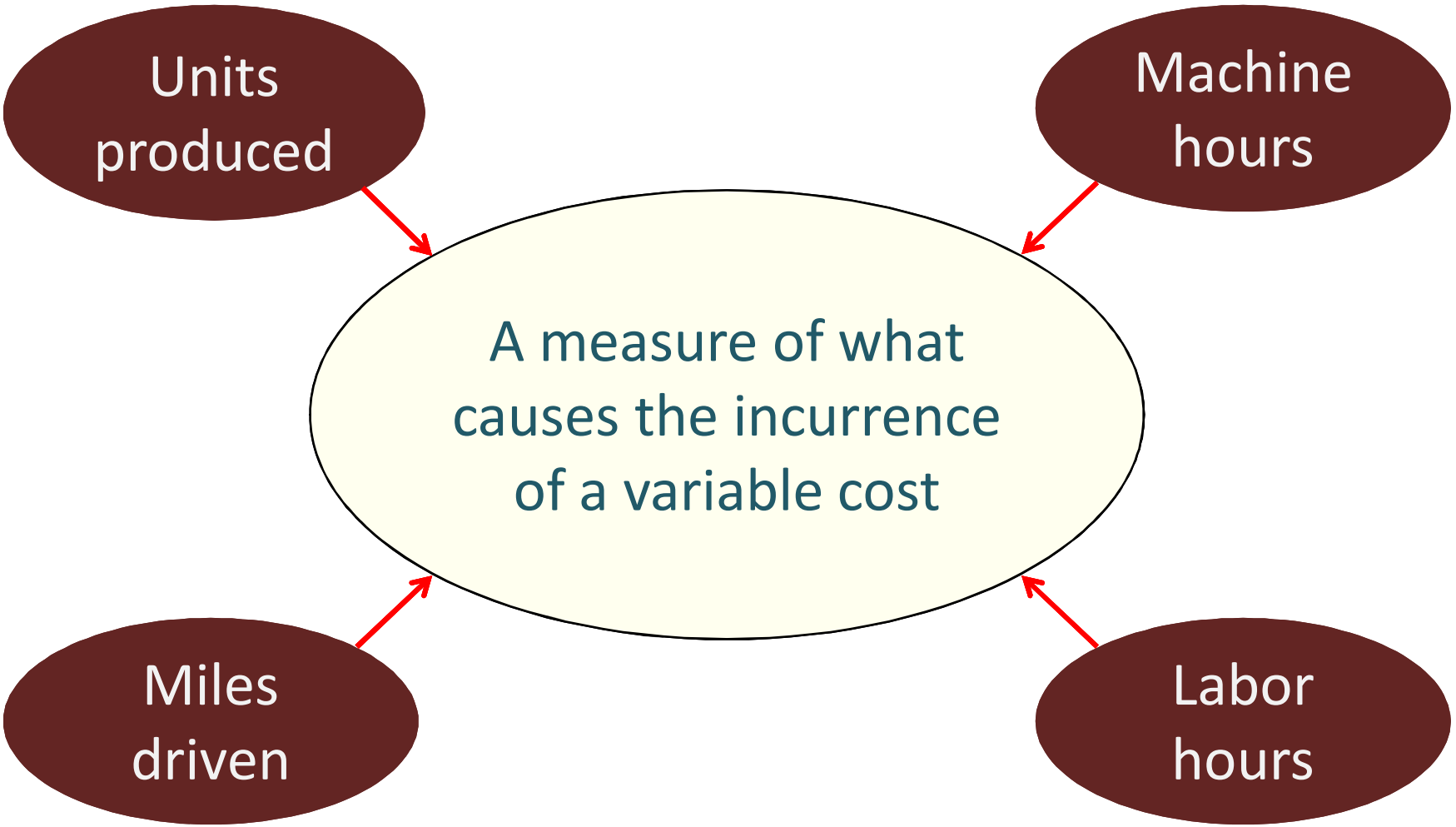
A variable cost is a cost whose total dollar amount varies in direct proportion to changes in the activity level, i.e., cost of goods sold, direct materials, direct labor, variable elements of manufacturing overhead (indirect materials, supplies, power), variable elements of selling and administrative cost (sales commission, shipping cost, etc.).

Summary of Variable and Fixed Cost Behavior		
Cost	**In Total**	**Per Unit**
Variable	**Total variable cost is proportional to the activity level within the relevant range.**	
Fixed	Total fixed cost remains the same even when the activity level changes within the relevant range.	Fixed cost per unit goes down as activity level goes up.

Variable Costs and Activity Base

- A variable cost varies with respect to something. That something is its **"activity base"**.
- An activity base is a measure of whatever causes the incurrence of variable cost.
- Some of the most common activity bases are machine hours, units produced, units sold, direct labor hours, number of miles driven by salesperson, number of pounds of laundry, number of customers, etc.
- Total variable cost changes as the activity level changes, it is important to note that a variable cost is constant if expressed on a per unit basis

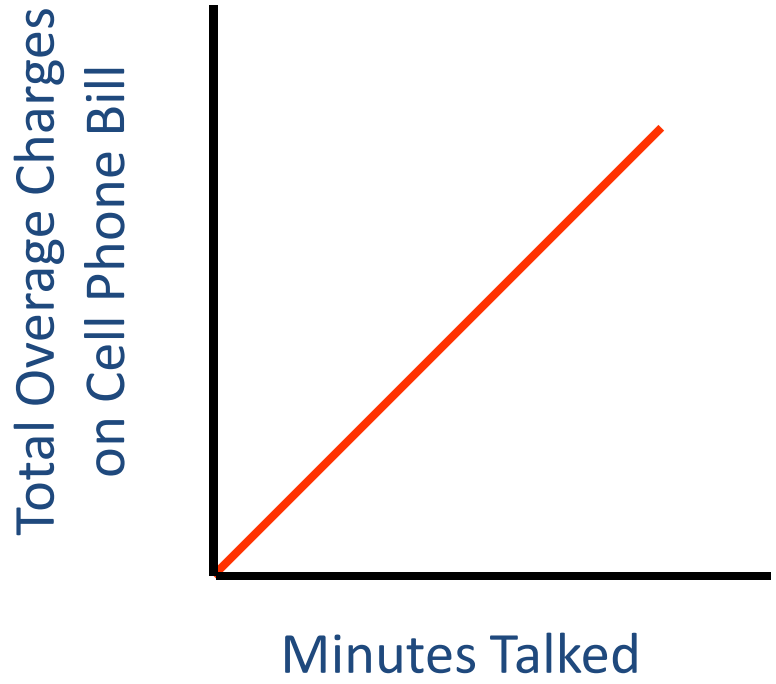
The Activity Base (also called a cost driver)



True Variable Cost – An Example

As an example of an activity base, consider overage charges on a cell phone bill. The activity base is the number of minutes used above the allowed minutes in the calling plan.

Fuel cost for producing electricity in a power plant. The activity base is the amount of electricity produced.



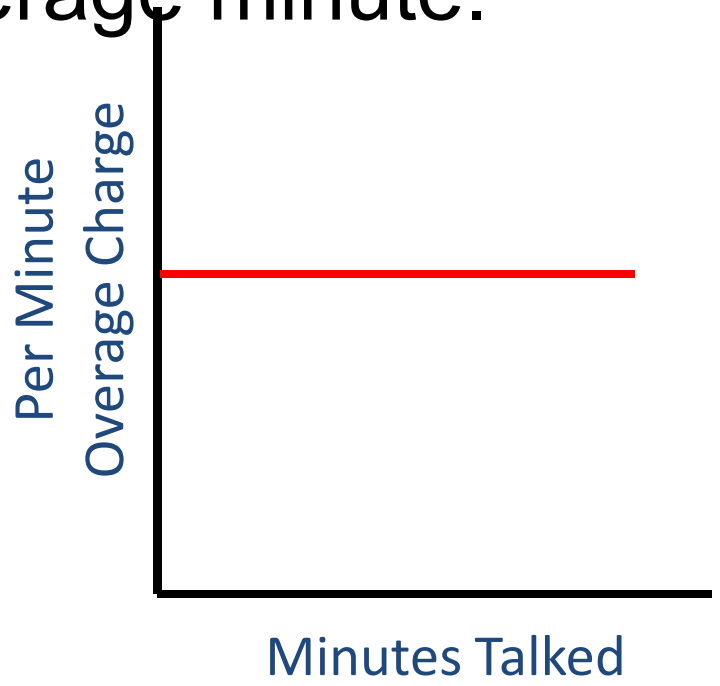
Types of Cost Behavior Patterns – Variable

Variable costs remain constant if expressed on a per unit basis.

Summary of Variable and Fixed Cost Behavior		
Cost	**In Total**	**Per Unit**
Variable	**Total variable cost is proportional to the activity level within the relevant range.**	**Variable cost per unit remains the same over wide ranges of activity.**
Fixed	Total fixed cost remains the same even when the activity level changes within the relevant range.	Fixed cost per unit goes down as activity level goes up.

Variable Cost Per Unit – An Example

Referring to the cell phone example, the cost per overage minute is constant, for example 45 cents per overage minute.



Extent of Variable Costs

The proportion of variable costs *differs* across organizations. For example . . .

A public utility like Florida Power and Light, with large investments in equipment, will tend to have *fewer* variable costs.

A manufacturing company like Black and Decker will often have *many* variable costs.

Some service companies have *high* variable costs, while other service companies have *high* fixed costs.

A merchandising company like Wal-Mart usually has a *high proportion* of variable costs, like cost of sales.

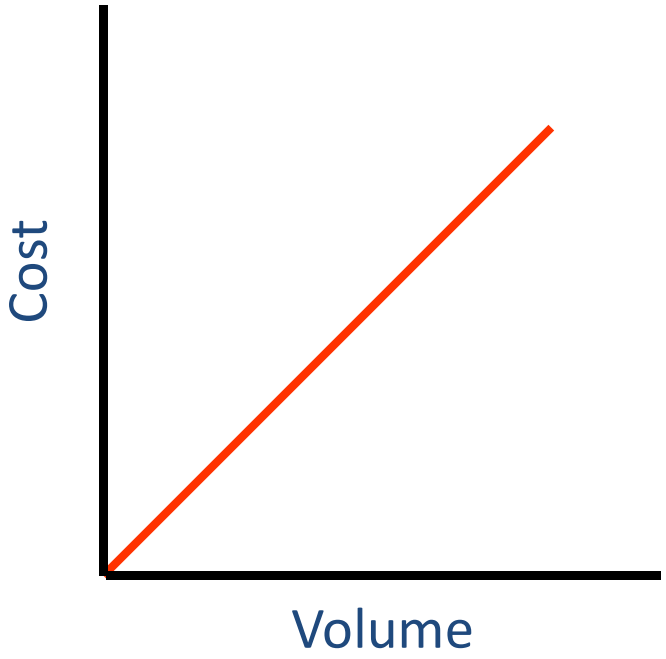
Examples of Variable Costs

1. *Merchandising companies* – cost of goods sold.
2. *Manufacturing companies* – direct materials, direct labor, and variable overhead.
3. *Merchandising and manufacturing companies* – commissions, shipping costs, and clerical costs such as invoicing.
4. *Service companies* – supplies, travel, and clerical.

HR1

True Variable Costs

The amount of a true variable cost used during the period varies in direct proportion to the activity level. The overage charge on a cell phone bill was one example of a true variable cost.



Direct material is another example of a cost that behaves in a true variable pattern.

Slide 14

HR1

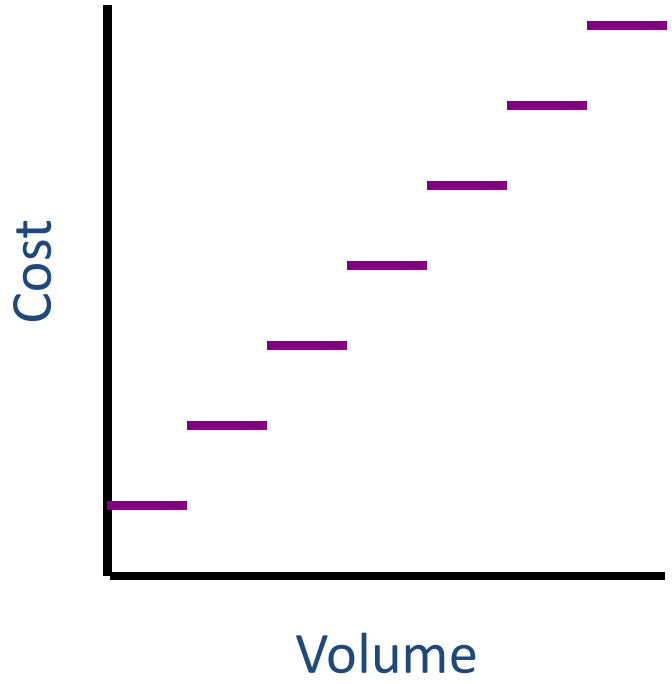
Slide 10 Notes
Added second sentence to match Slide 10 Lecture Notes.

Deleted "Now let's look at what are known as step-variable costs."

Added a line between sentences.
Helen Roybark, 10/4/2008

Step-Variable Costs

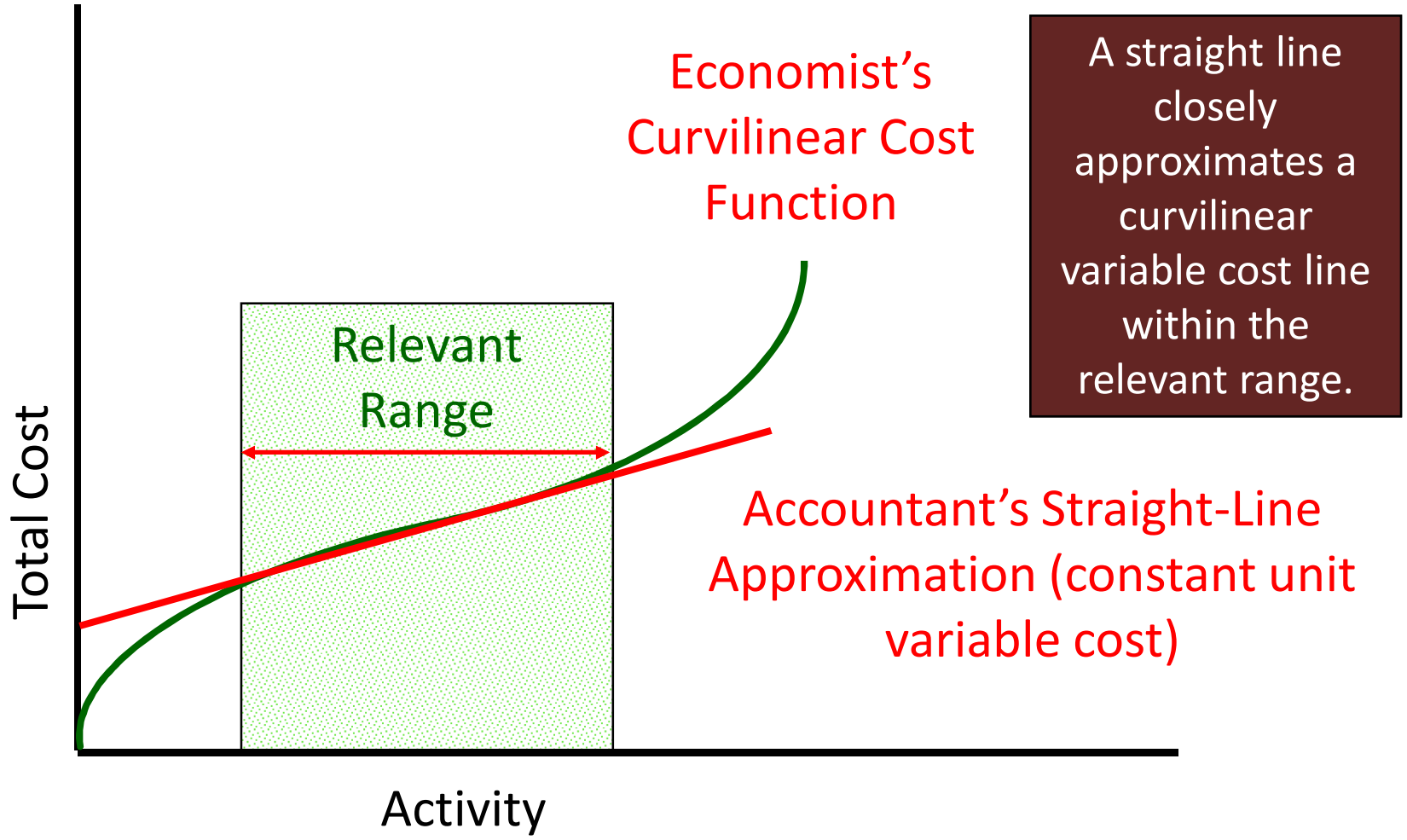
A *step-variable cost* is a resource that is obtainable only in large chunks (such as maintenance workers) and whose costs change only in response to fairly wide changes in activity.



The Linearity Assumption and the Relevant Range

- Management accountants assume that costs are truly linear.
- Economists points out that many costs are actually curvilinear. The relationship between cost and activity is a curve.
- Nevertheless, even if a cost is not strictly linear, it can be approximated within a narrow band of activity known as the relevant range by a straight line.
- The relevant range is the range within which the linearity assumption is valid.
- Outside of the relevant range, a fixed cost is not strictly fixed and a variable cost is not strictly variable.

The Linearity Assumption and the Relevant Range



Example

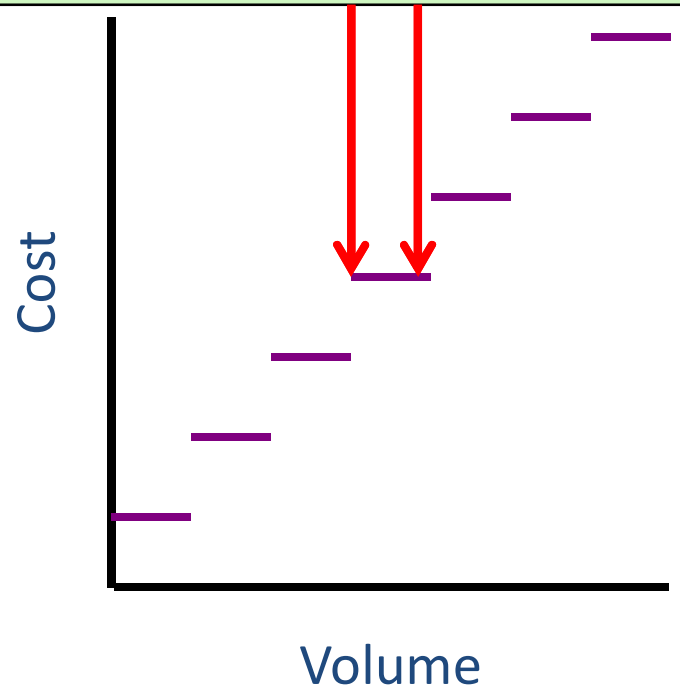
- Suppose, the Mayo Clinic rents a machine for $20,000 per month that tests blood samples for certain type of leukemia cells.
- The capacity of the machine is 3,000 tests per month.
- The assumption that the rent cost is $20,000 per month is only valid for 0 to 3000 tests per month.
- If the mayo clinic needed to test 5000 samples per month, it would need to rent another machine for an additional $20,000 per month.
- This step-oriented cost behavior pattern can also be used to describe other costs, such as some labor costs, etc.

The Linearity Assumption and the Relevant Range

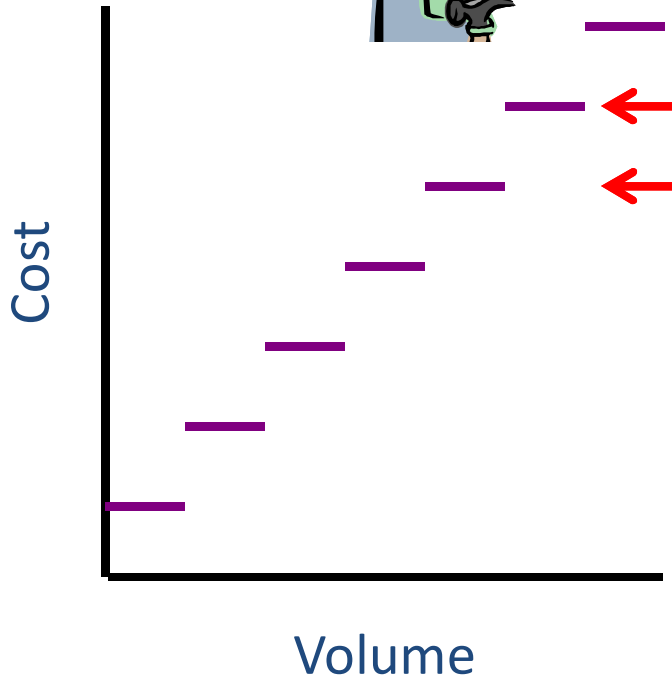
- Cost behavior patterns such as salaried employees are often called step-variable costs.
- Step-variable costs can often be adjusted quickly as conditions change. Furthermore, the width of the steps for step-variable costs is generally so narrow that these costs can be treated essentially as variable costs for most purposes.
- The width of the steps for fixed costs, on the other hand, is so wide that these costs should be treated as entirely fixed within the relevant range.

Step-Variable Costs

Small changes in the level of production are not likely to have any effect on the number of maintenance workers employed.



Step-Variable Costs



Only fairly wide changes in the activity level will cause a change in the number of maintenance workers employed.

Fixed Cost

- A fixed cost is a cost that remains constant, in total, regardless of change in the level of activity.
- For example, straight-line equipment depreciation, insurance, property taxes, facility rent, administrative salaries, advertising, etc.
- Fixed costs are not affected by changes in activity.
- Because total fixed costs remain constant for large variations in the level of activity, the average fixed cost per unit becomes progressively smaller as the level of activity increases.

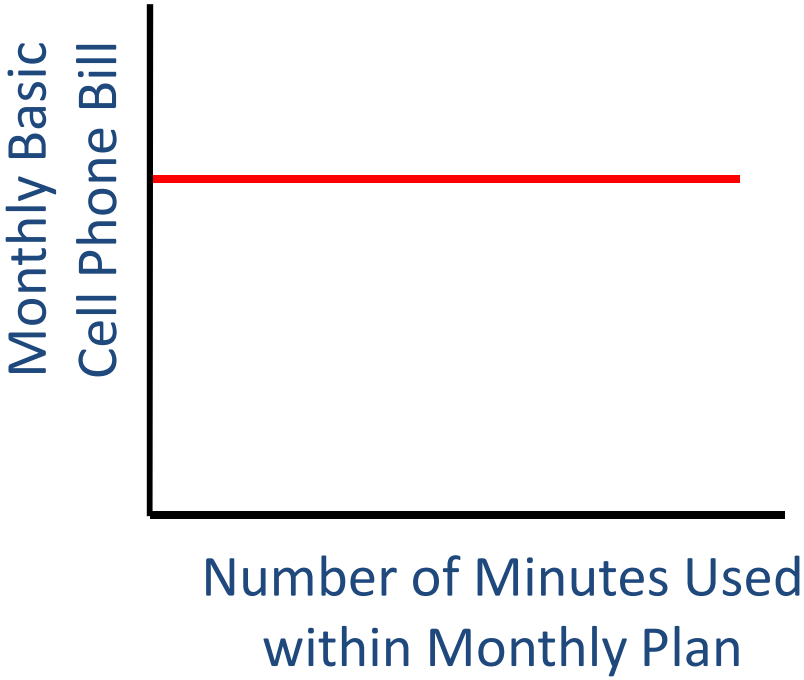
Types of Cost Behavior Patterns – Fixed

A fixed cost is a cost whose total dollar amount remains constant as the activity level changes.

Summary of Variable and Fixed Cost Behavior		
Cost	**In Total**	**Per Unit**
Variable	**Total variable cost is proportional to the activity level within the relevant range.**	**Variable cost per unit remains the same over wide ranges of activity.**
Fixed	**Total fixed costs remain the same even when the activity level changes within the relevant range.**	**Fixed cost per unit goes down as activity level goes up.**

Total Fixed Cost – An Example

For example, your cell phone bill probably includes a fixed amount related to the total minutes allowed in your calling plan. The amount does not change when you use more or less allowed minutes.



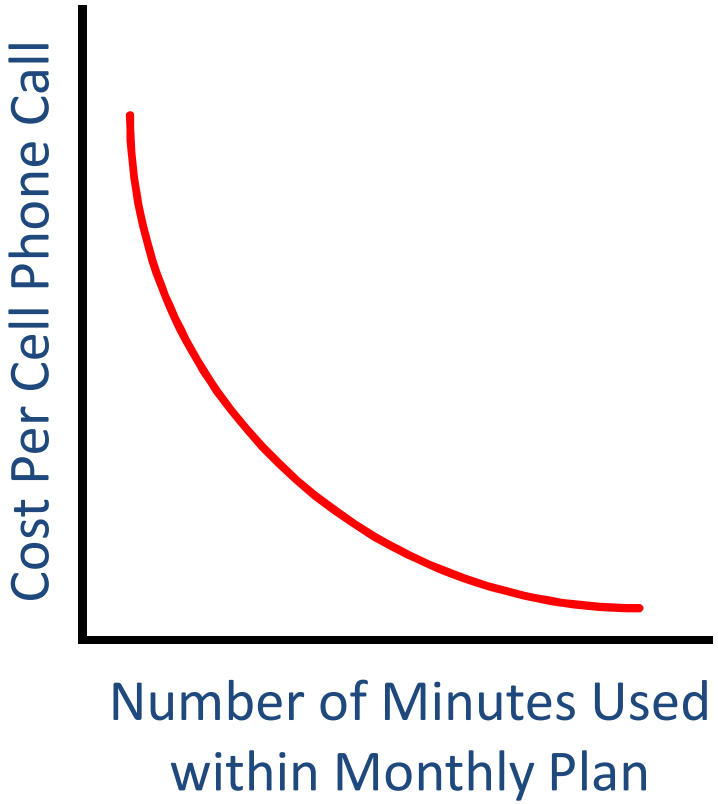
Types of Cost Behavior Patterns – Fixed

Average fixed costs per unit decrease as the activity level increases.

Cost	In Total	Per Unit
Variable	Total variable cost is proportional to the activity level within the relevant range.	Variable cost per unit remains the same over wide ranges of activity.
Fixed	Total fixed costs remain the same even when the activity level changes within the relevant range.	Average fixed costs per unit decrease as the activity level increases.

Fixed Cost Per Unit Example

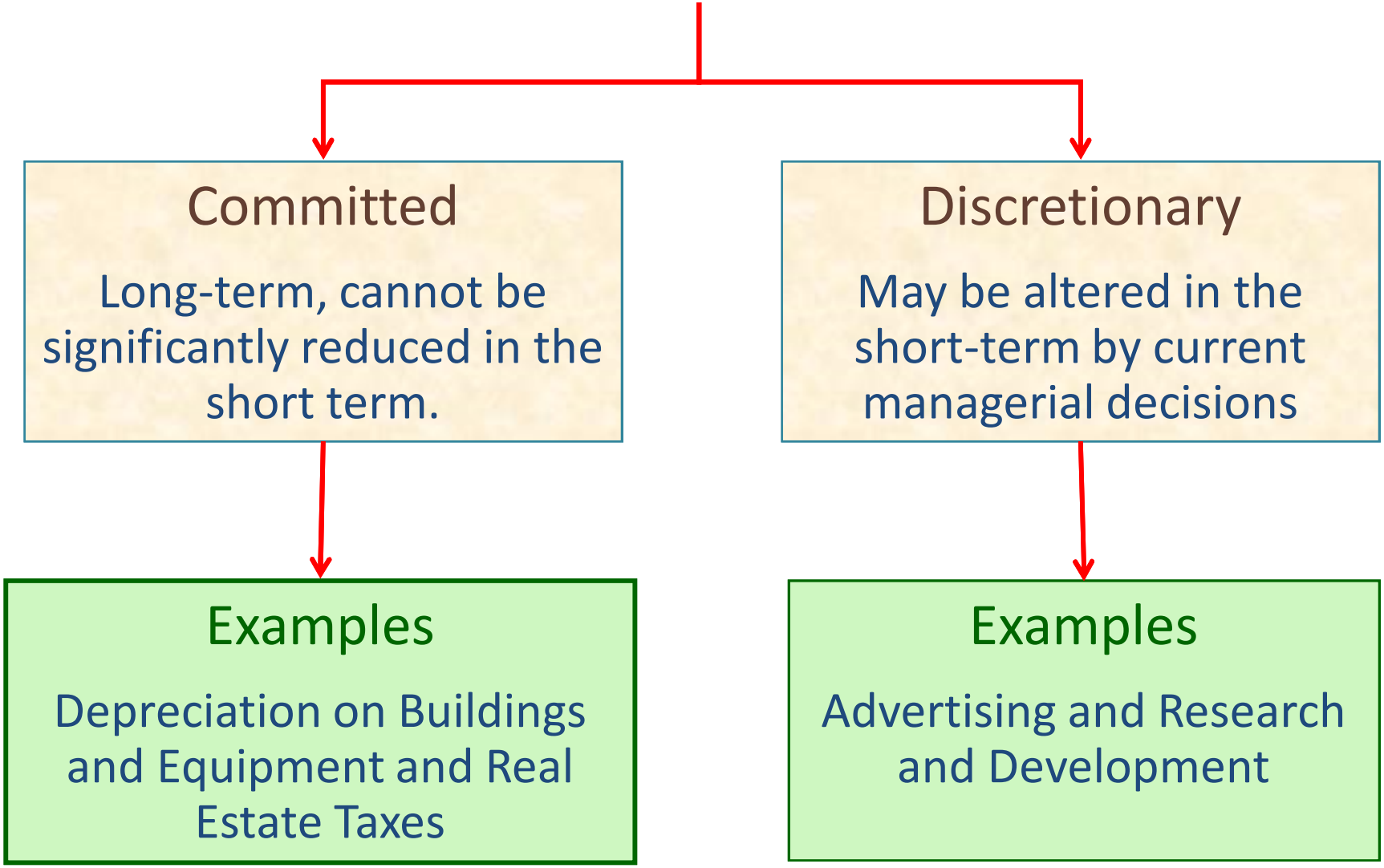
For example, the fixed cost per minute used decreases as more allowed minutes are used.



Committed and Discretionary Fixed Cost

- **Committed fixed costs** represent organizational investments with a multiyear planning horizon that can't be significantly reduced even for short periods of time without making fundamental changes, i.e., investment in facilities and equipment, real estate taxes, salaries of top management, insurance expenses.
- Even if operations are interrupted or cut back, committed fixed costs remain unchanged.
- **Discretionary fixed costs** usually arise from annual decisions by management to spend on certain fixed cost items, i.e., advertising expenses, research, public relations management development programs.
- Discretionary fixed costs can be cut for short periods of time with minimal damage to the long-run goals of the organization

Types of Fixed Costs



The Trend Toward Fixed Costs

The trend in many industries is toward *greater fixed costs* relative to variable costs.

As machines take over many mundane tasks previously performed by humans, "*knowledge workers*" are demanded for their minds rather than their muscles.

Knowledge workers tend to be salaried, highly-trained and difficult to replace. The cost of compensating these valued employees is *relatively fixed* rather than variable.

Is Labor a Variable or a Fixed Cost?

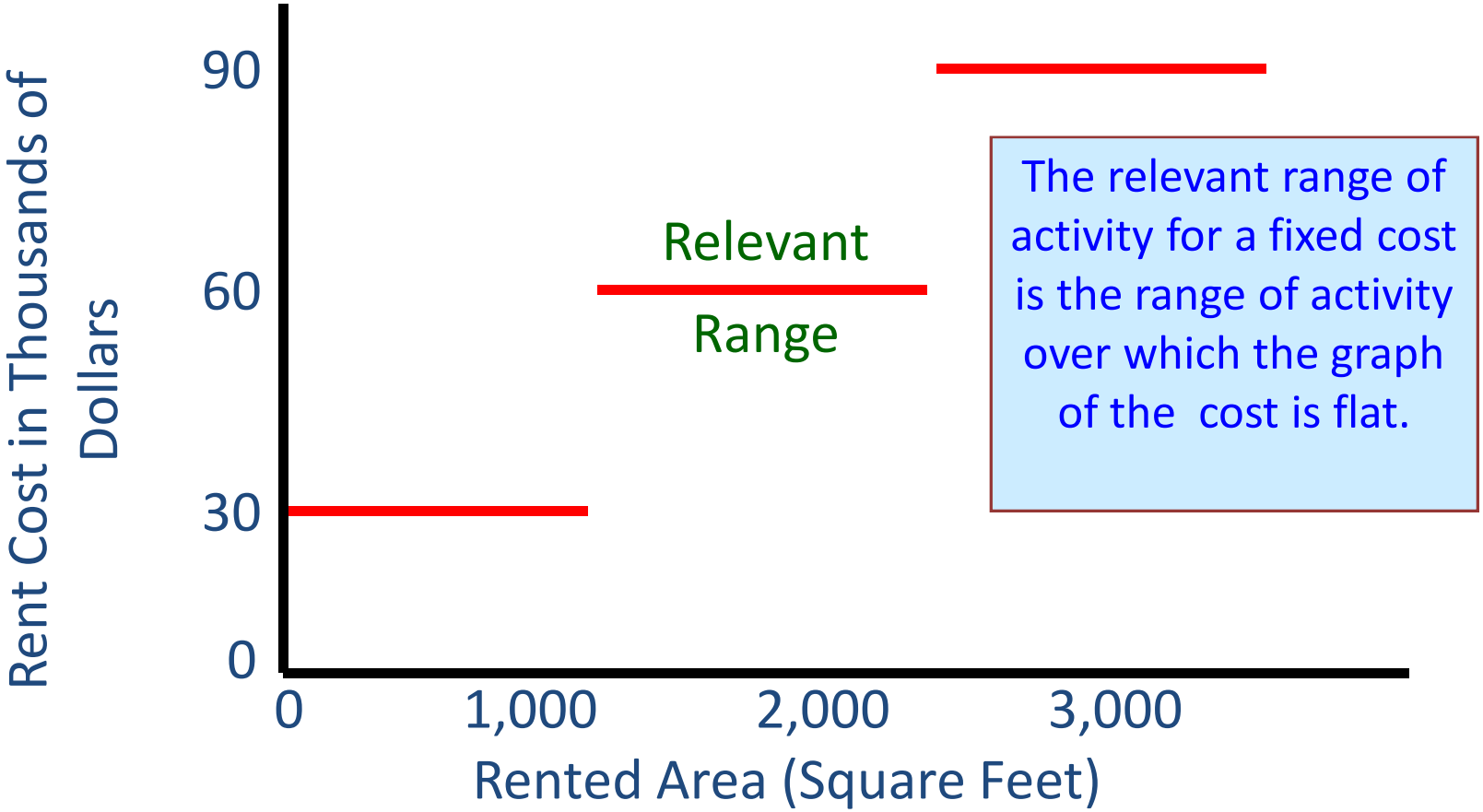
The behavior of wage and salary costs can *differ across countries*, depending on labor regulations, labor contracts, and custom.

In *France*, *Germany*, *China*, and *Japan*, management has little flexibility in adjusting the size of the labor force. Labor costs are more fixed in nature.

In the *United States* and the *United Kingdom*, management has greater latitude. Labor costs are more variable in nature.

Within countries managers can view labor costs differently depending upon their strategy. Most companies in the *United States* continue to view direct labor as a variable cost.

Fixed Costs and the Relevant Range

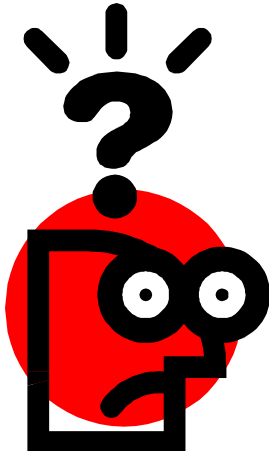


Fixed Costs and the Relevant Range

For example, assume office space is available at a rental rate of $30,000 per year in increments of 1,000 square feet.

Fixed costs would increase in a step fashion at a rate of $30,000 for each additional 1,000 square feet.

Fixed Costs and the Relevant Range



How does this step-function pattern differ from a step-variable cost?

Step-variable costs can be adjusted more quickly as conditions change and . . .

The width of the activity steps is much wider for the fixed cost.

Quick Check ✓

Which of the following statements about cost behavior are true?

a. Fixed costs per unit vary with the level of activity.
b. Variable costs per unit are constant within the relevant range.
c. Total fixed costs are constant within the relevant range.
d. Total variable costs are constant within the relevant range.

HR2

Quick Check ✓

Which of the following statements about cost behavior are true?

a. Fixed costs per unit vary with the level of activity.
b. Variable costs per unit are constant within the relevant range.
c. Total fixed costs are constant within the relevant range.
d. Total variable costs are constant within the relevant range.

Slide 35

HR2 Slide 26 Notes

Changed the notes to read "Answer d" and added commas after the words "increases, "range," and "decreases."

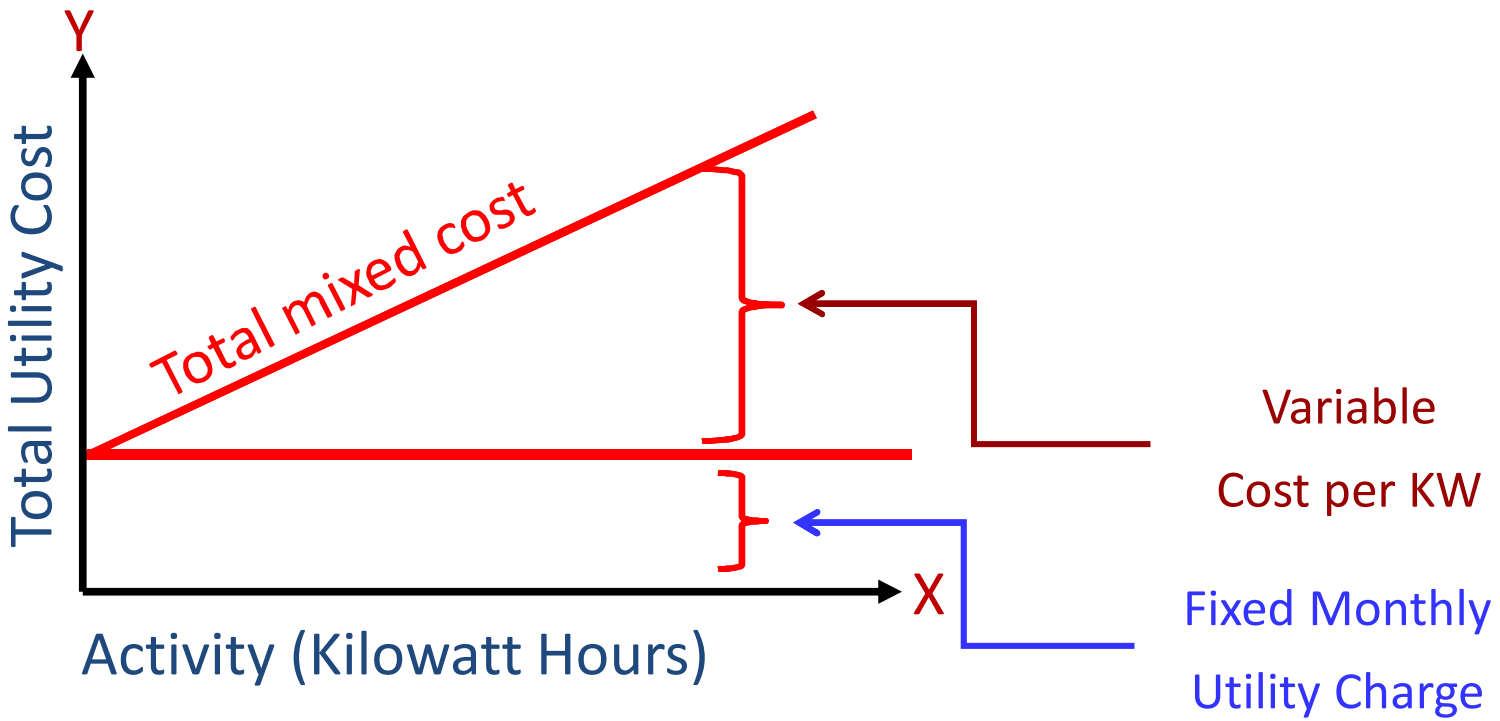
Helen Roybark, 10/4/2008

Mixed Cost

- A mixed cost contain both variable and fixed costs elements. It is also known as semi-variable costs.
- For example, the Nooksack Expeditions company incurs a mixed cost called fees paid to the state. It includes license fee of $25,000 per year plus $3 for each rafting party and it is paid to the state.

Mixed Costs (also called semivariable costs)

A mixed cost contains both variable and fixed elements. Consider the example of utility cost.

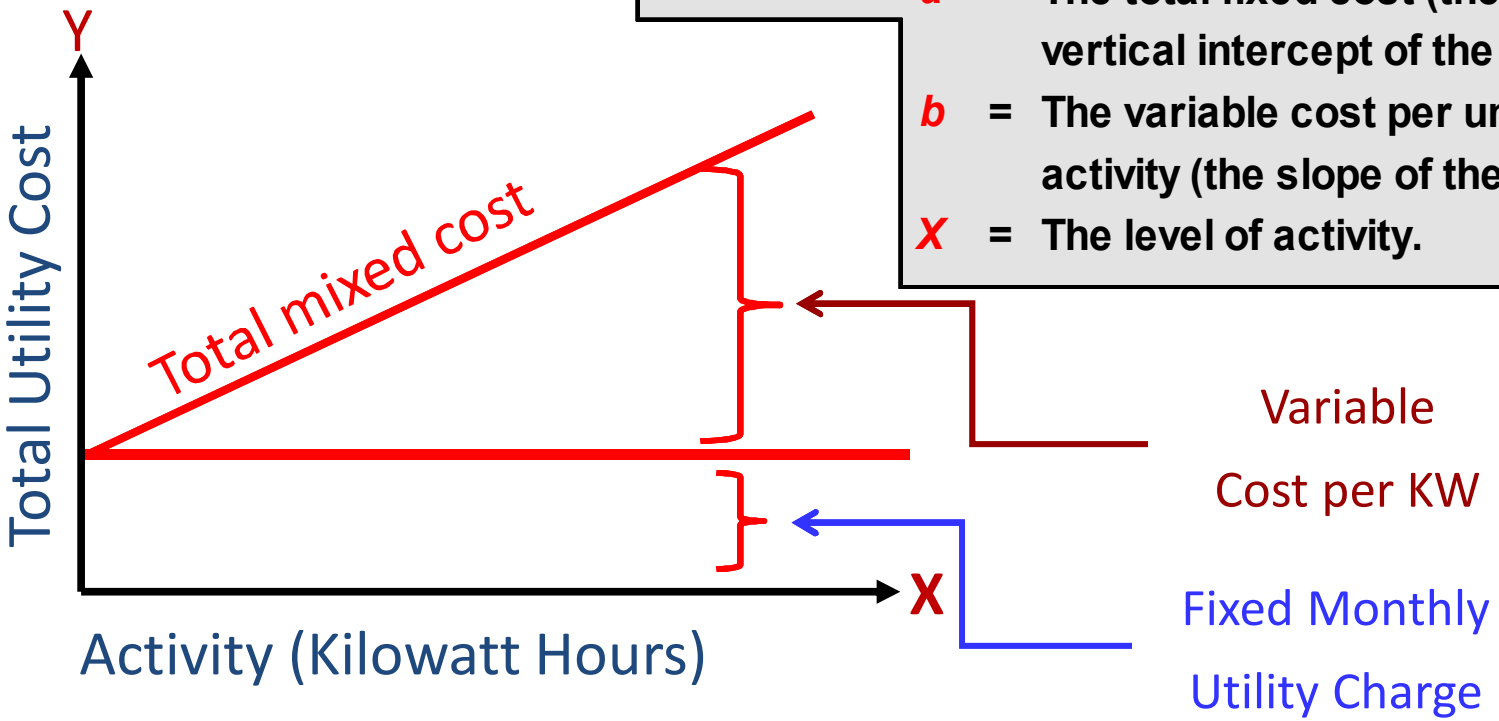


Mixed Costs

The total mixed cost line can be expressed as an equation: ***Y = a + bX***

Where:

- ***Y*** **= The total mixed cost.**
- ***a*** **= The total fixed cost (the vertical intercept of the line).**
- ***b*** **= The variable cost per unit of activity (the slope of the line).**
- ***X*** **= The level of activity.**



Mixed Costs – An Example

If your fixed monthly utility charge is $40, your variable cost is $0.03 per kilowatt hour, and your monthly activity level is 2,000 kilowatt hours, what is the amount of your utility bill?

$$Y = a + bX$$

$$Y = \$40 + (\$0.03 \times 2{,}000)$$

$$Y = \$100$$

The Analysis of Mixed Cost

- Mixed costs are very common. For example, the overall costs of providing X-ray services to the patients in a Hospital/Clinic/Diagnostic Centers is a mixed cost. The costs of equipment depreciation, radiologists and technicians salaries are fixed, but the cost of X-ray film, power, and supplies are variable.
- The fixed portion of a mixed cost represent minimum cost of having a service ready and available for use.
- The variable portion represent the cost incurred for actual consumption of the service.
- Managers can use a variety of methods to estimate the fixed and variable component of a mixed cost, i.e., account analysis, the engineering approach, the high-low method, least-square regression analysis, etc.

Analysis of Mixed Costs

Account Analysis and the Engineering Approach

In **account analysis**, each account is classified as either variable or fixed based on the analyst's knowledge of how the account behaves.

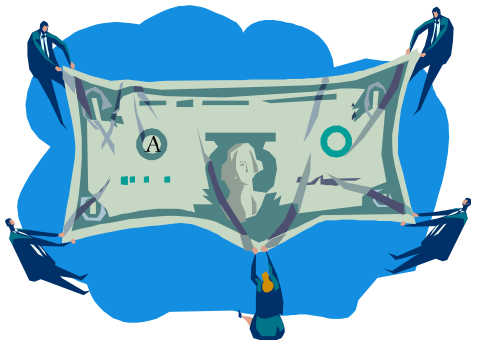
The **engineering approach** classifies costs based upon an industrial engineer's evaluation of production methods, and material, labor and overhead requirements.

Why and how to reduce fixed costs or switch them to variable costs?

- Typical fixed costs: production facilities, rentals, employees salaries and related benefits and utilities
  - Converting them into variable may reduce risk of financial commitment and provide flexibility of capacity utilization

– **Outsourcing**
  - Business with fast and regular change and/or large varieties of products most likely will benefit from this approach e.g. Nike and Apple
  - Non-core business functions with lower value-add to majority customers e.g. call centers for enquiries, 3rd party logistics, broker-dealers' securities back office operations

– **Offshoring**
  - Honda and Toyota Thailand plants
  - HSBC back office functions in China

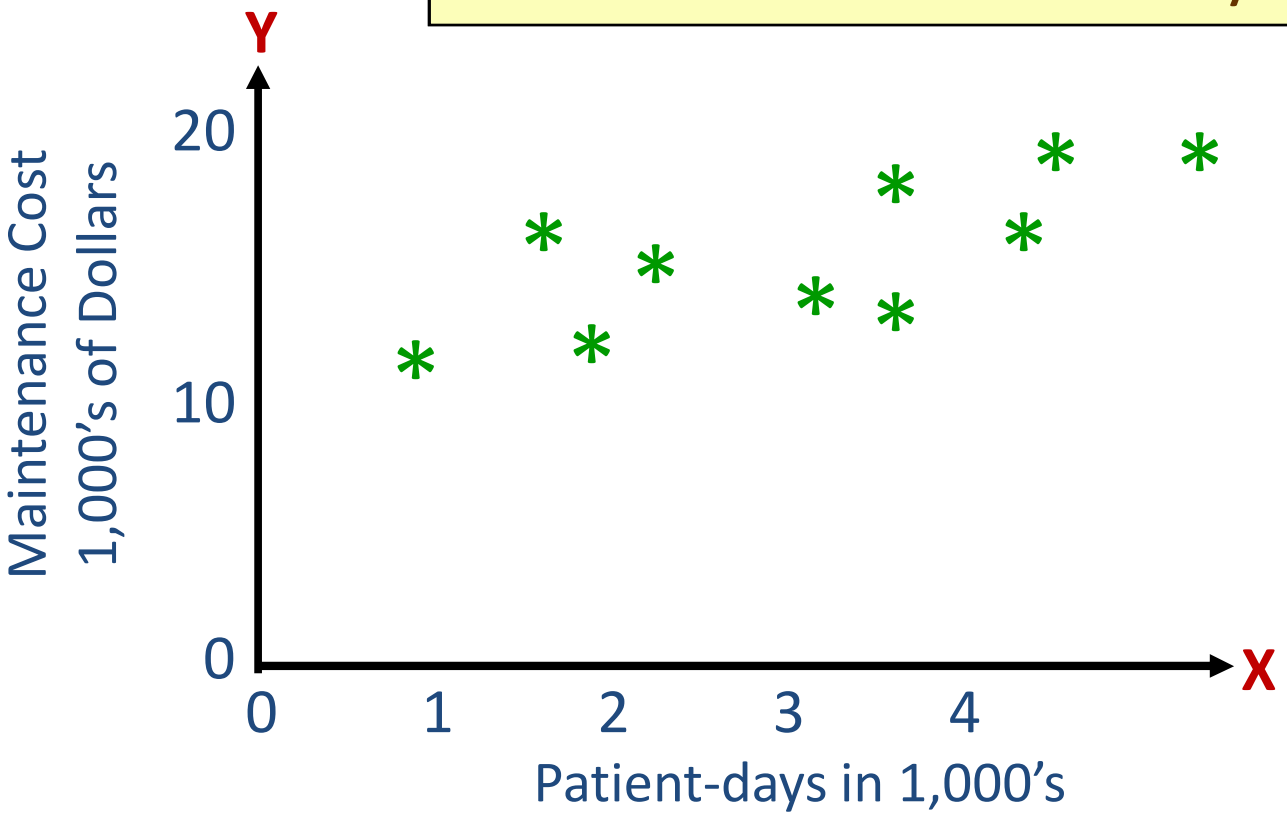


Learning Objective 2

Use a scattergraph plot to diagnose cost behavior.

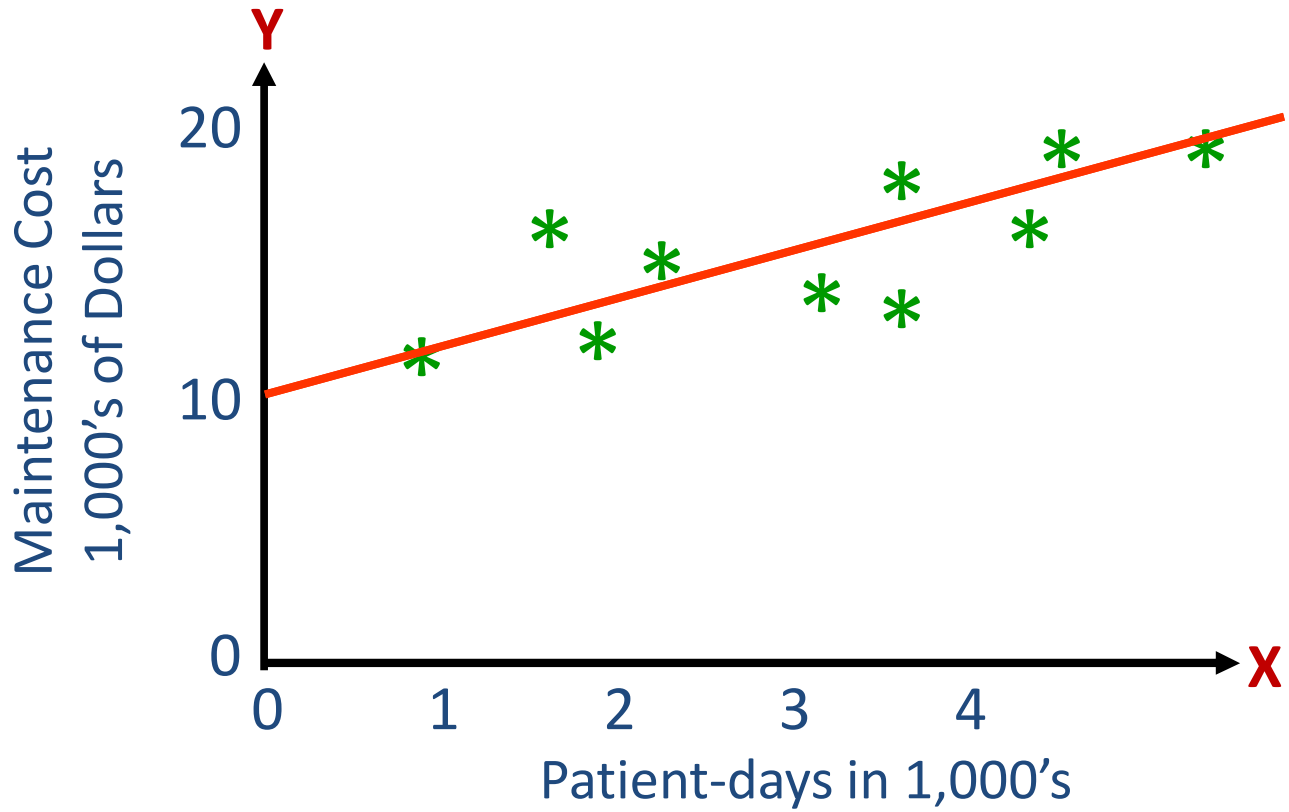
The Scattergraph Method

Plot the data points on a graph (Total Cost ***Y*** vs. Activity ***X***).



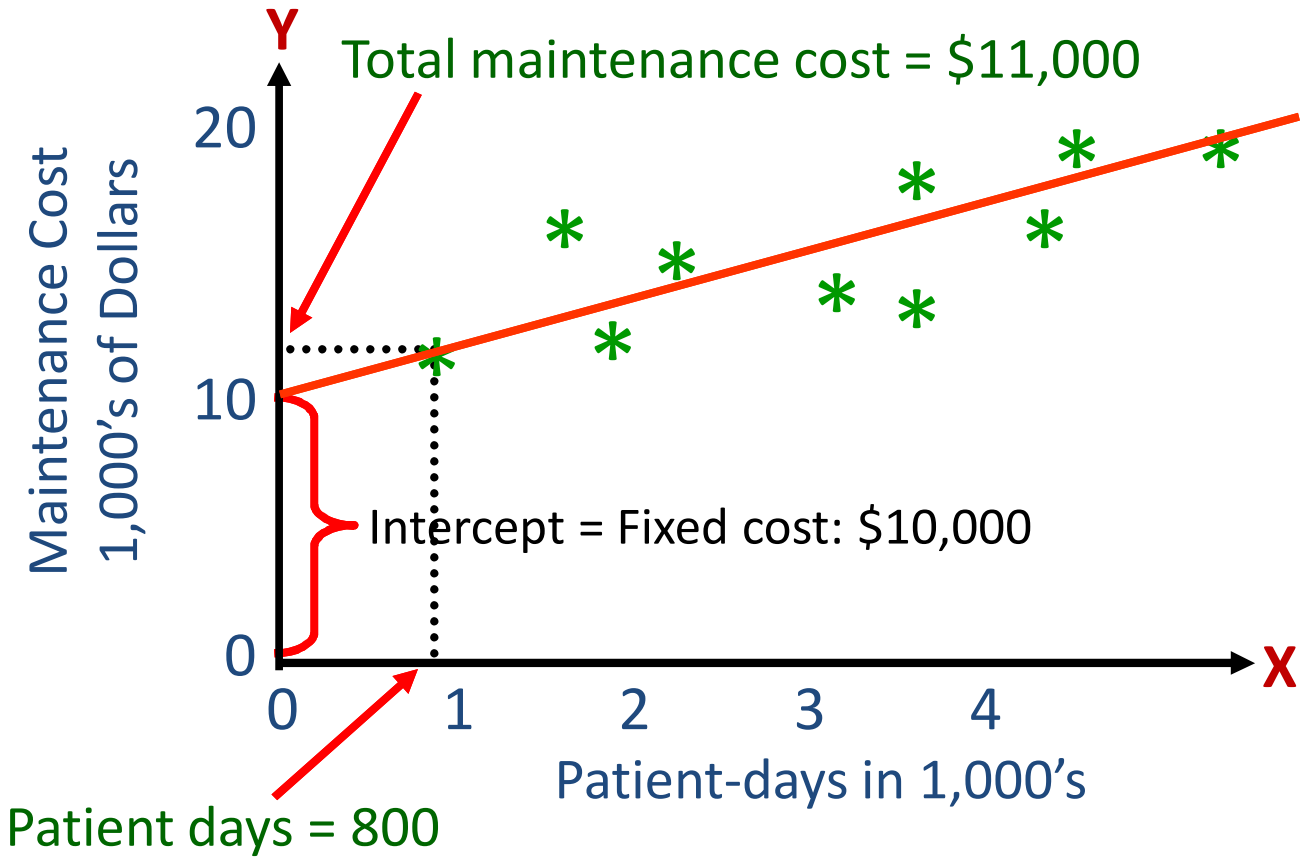
The Scattergraph Method

Draw a line through the data points with about an equal numbers of points above and below the line.



The Scattergraph Method

Use one data point to estimate the total level of activity and the total cost.



The Scattergraph Method

Make a quick estimate of variable cost per unit and determine the cost equation.

Total maintenance at 800 patients	**$ 11,000**
Less: Fixed cost	**10,000**
Estimated total variable cost for 800 patients	**$ 1,000**

Variable cost per unit = $\frac{\$1,000}{800}$ = $1.25/patient-day

$$Y = \$10,000 + \$1.25X$$

Total maintenance cost

Number of patient days

Learning Objective 3

The High-Low Method – An Example

Assume the following hours of maintenance work and the total maintenance costs for six months.

High Low Method.xlsx

	A	B	C	D	E	F	G
1		Month		Hours of Maintenance		Total Maintenance Cost	
2		January		625		$ 7,950	
3		February		450		7,400	
4		March		700		8,275	
5		April		550		7,625	
6		May		775		9,100	
7		June		850		9,800	

The High-Low Method – An Example

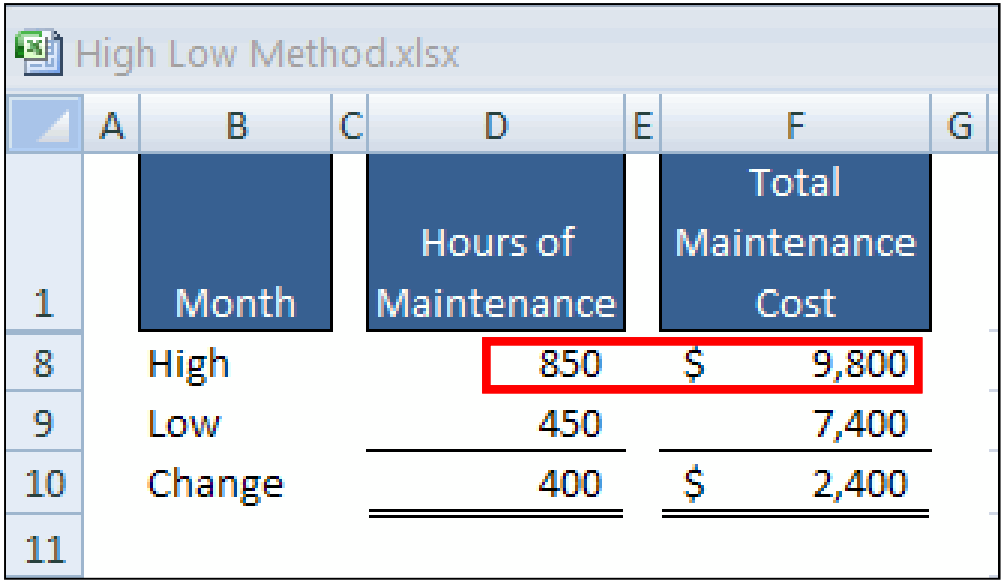
High Low Method.xlsx

	A	B	C	D	E	F	G
1		Month		Hours of Maintenance		Total Maintenance Cost	
2		January		625		$ 7,950	
3		February		450		7,400	
4		March		700		8,275	
5		April		550		7,625	
6		May		775		9,100	
7		June		850		9,800	
8		High		850		$ 9,800	
9		Low		450		7,400	
10		Change		400		$ 2,400	
11							

The *variable cost per hour* of maintenance is equal to the change in cost divided by the change in hours.

$$\frac{\$2,400}{400} = \$6.00/\text{hour}$$

The High-Low Method – An Example



	A	B	C	D	E	F	G
1		Month		Hours of Maintenance		Total Maintenance Cost	
8		High		850		$ 9,800	
9		Low		450		7,400	
10		Change		400		$ 2,400	
11							

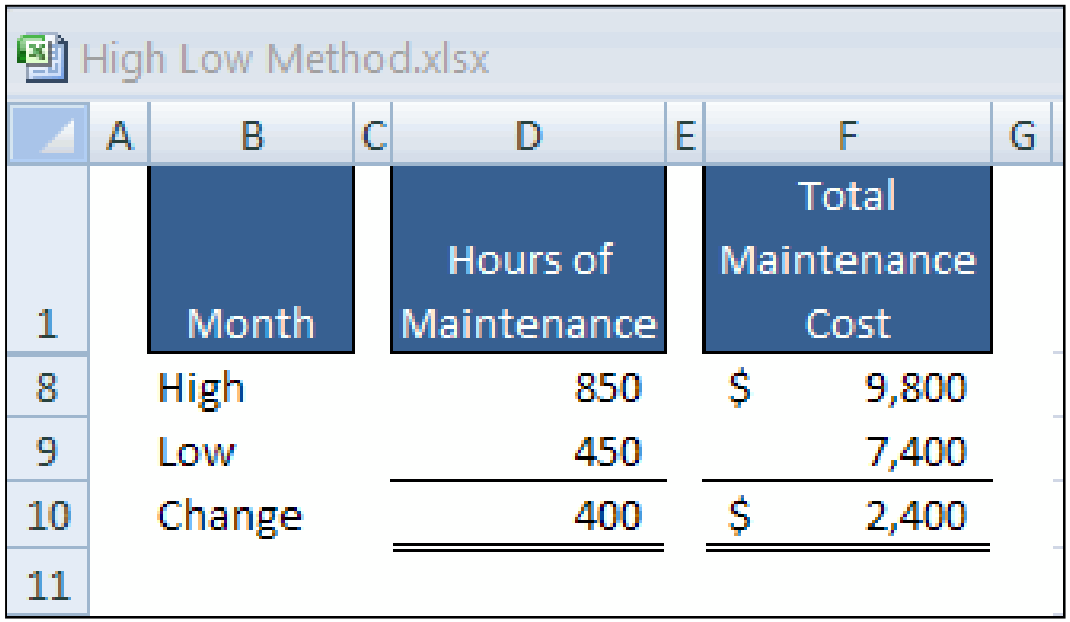
Total Fixed Cost = Total Cost – Total Variable Cost

Total Fixed Cost = $9,800 – ($6/hour × 850 hours)

Total Fixed Cost = $9,800 – $5,100

Total Fixed Cost = $4,700

The High-Low Method – An Example



High Low Method.xlsx

	A	B	C	D	E	F	G
1		Month		Hours of Maintenance		Total Maintenance Cost	
8		High		850		$ 9,800	
9		Low		450		7,400	
10		Change		400		$ 2,400	
11							

The Cost Equation for Maintenance

$$Y = \$4{,}700 + \$6.00X$$

Quick Check ✓

Sales salaries and commissions are $10,000 when 80,000 units are sold, and $14,000 when 120,000 units are sold. Using the high-low method, what is the variable portion of sales salaries and commission?

a. $0.08 per unit

b. $0.10 per unit

c. $0.12 per unit

d. $0.125 per unit

Quick Check ✓

Sales salaries and commissions are $10,000 when 80,000 units are sold, and $14,000 when 120,000 units are sold. Using the high-low method, what is the variable portion of sales salaries and commission?

a. $0.08 per unit
b. $0.10 per unit
c. $0.12 per unit
d. $0.125 per unit

	Units	Cost
High level	120,000	$ 14,000
Low level	80,000	10,000
Change	40,000	$ 4,000

$4,000 ÷ 40,000 units
= $0.10 per unit

Quick Check ✓

Sales salaries and commissions are $10,000 when 80,000 units are sold, and $14,000 when 120,000 units are sold. Using the high-low method, what is the fixed portion of sales salaries and commissions?

a. $ 2,000
b. $ 4,000
c. $10,000
d. $12,000

Quick Check ✓

Sales salaries and commissions are $10,000 when 80,000 units are sold, and $14,000 when 120,000 units are sold. Using the high-low method, what is the fixed portion of sales salaries and commissions?

a. $ 2,000
b. $ 4,000
c. $10,000
d. $12,000

Total cost	**=**	**Total fixed cost + Total variable cost**
$14,000	**=**	**Total fixed cost + ($0.10 × 120,000 units)**
Total fixed cost	**=**	**$14,000 - $12,000**
Total fixed cost	**=**	**$2,000**

Least-Squares Regression Method

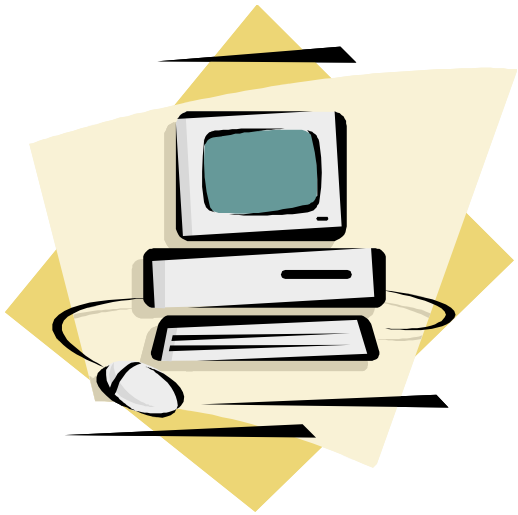
A method used to analyze mixed costs if a scattergraph plot reveals an approximately linear relationship between the *X* and *Y* variables.

This method uses *all* of the data points to estimate the fixed and variable cost components of a mixed cost.

The goal of this method is to fit a straight line to the data that *minimizes the sum of the squared errors*.

Least-Squares Regression Method

- Software can be used to fit a regression line through the data points.
- The cost analysis objective is the same: ***Y = a + bX***



Least-squares regression also provides a statistic, called the R^2, which is a measure of the goodness of fit of the regression line to the data points.

Least Square Regression Method

Activity Level (X)	Cost (Y)
345	43,670
450	50,980
275	32,600
320	33,420
545	61,850
432	47,900
396	42,300
675	75,000
560	60,890
420	46,760

Least Square Regression Method (Cont'd)

X	Y	X^2	XY
345	43,670	119025	15066150
450	50,980	202500	22941000
275	32,600	75625	8965000
320	33,420	102400	10694400
545	61,850	297025	33708250
432	47,900	186624	20692800
396	42,300	156816	16750800
675	75,000	455625	50625000
560	60,890	313600	34098400
420	46,760	176400	19639200

Least Square Regression Method (Cont'd)

$$b = \frac{\sum XY - n * \bar{X} * \bar{Y}}{\sum X^2 - n * \bar{X}^2}$$

$$a = \bar{Y} - b\bar{X}$$

$$\bar{X} = \frac{\sum X}{n}$$

$$\bar{Y} = \frac{\sum Y}{n}$$

Least Square Regression Method (Cont'd)

$\bar{X}$ = 441.8

$\bar{Y}$= 49,537

$\sum XY$=233181000

$\sum X^2$=2085640

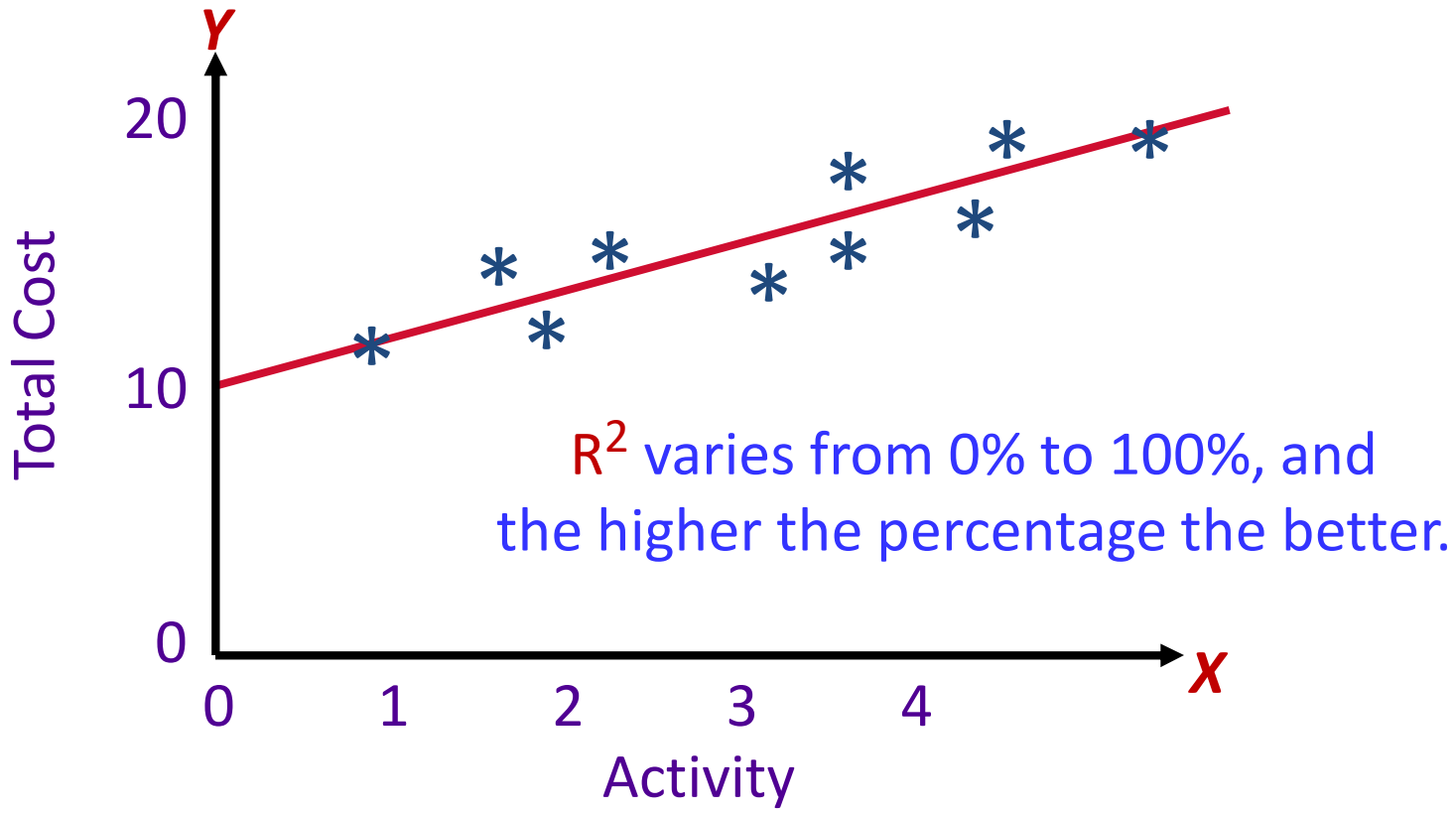
n=10

a= 2220.141

b=107.1002

Least-Squares Regression Method

R^2 is the percentage of the variation in the dependent variable (total cost) that is explained by variation in the independent variable (activity).



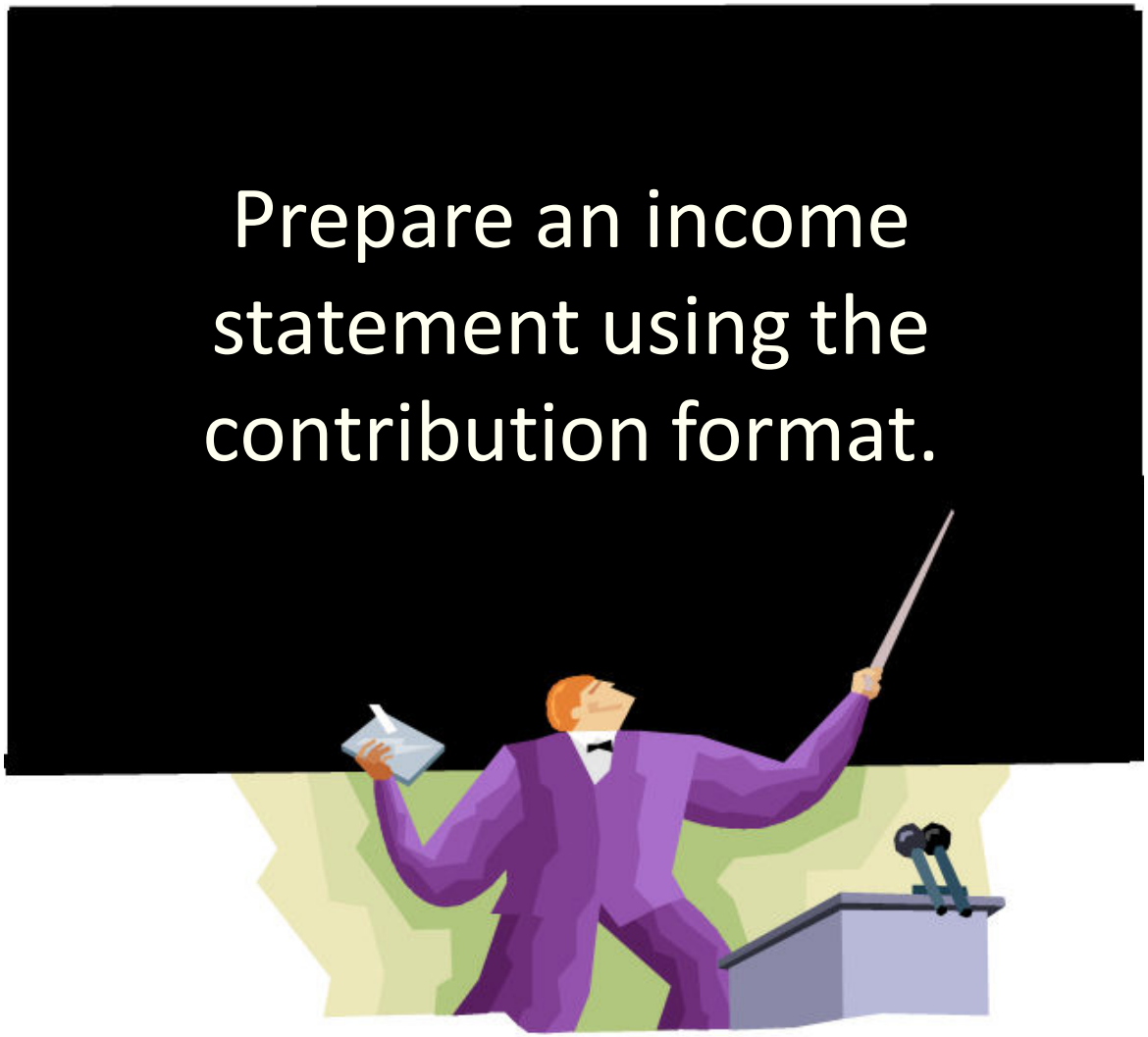
Comparing Results From the Three Methods

The three methods just discussed provide slightly different estimates of the fixed and variable cost components of the mixed cost.

This is to be expected because each method uses differing amounts of the data points to provide estimates.

Least-squares regression provides the most accurate estimate because it uses all the data points.

Learning Objective 4



The Contribution Format

The Contribution Format

	Total	Unit
Sales Revenue	$ 100,000	$ 50
Less: Variable costs	60,000	30
Contribution margin	$ 40,000	$ 20
Less: Fixed costs	30,000	
Net operating income	$ 10,000	

The contribution margin format emphasizes cost behavior. Contribution margin covers fixed costs and provides for income.

Uses of the Contribution Format

The contribution income statement format is used as an internal planning and decision-making tool. We will use this approach for:

1. Cost-volume-profit analysis (Chapter 4).
2. Budgeting (Chapter 10).
3. Segmented reporting of profit data (Chapter 13).
4. Special decisions such as pricing and make-or-buy analysis (Chapter 14).

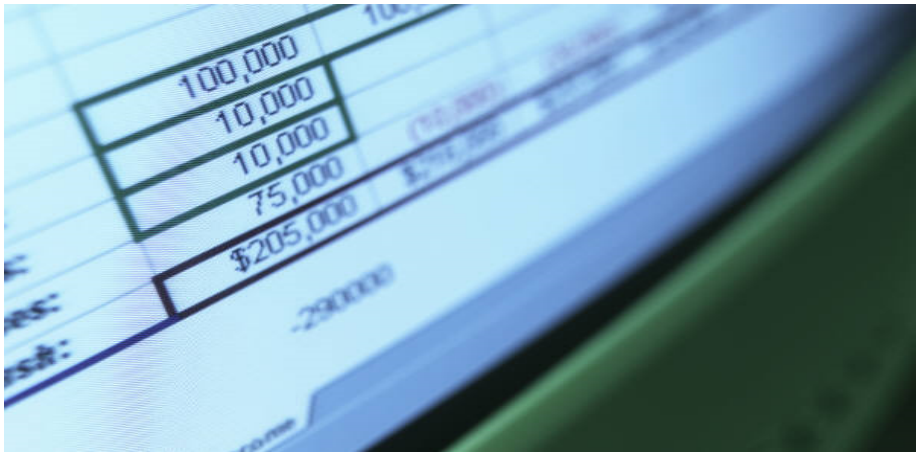
The Contribution Format

Comparison of the Contribution Income Statement with the Traditional Income Statement

Traditional Approach (costs organized by *function*)		Contribution Approach (costs organized by *behavior*)	
Sales	$ 100,000	Sales	$ 100,000
Less cost of goods sold	70,000	Less variable expenses	60,000
Gross margin	$ 30,000	Contribution margin	$ 40,000
Less operating expenses	20,000	Less fixed expenses	30,000
Net operating income	$ 10,000	Net operating income	$ 10,000

Used primarily for external reporting.

Used primarily by management.



Least-Squares Regression Computations

Appendix 3A

Learning Objective 5

Analyze a mixed cost using the least-squares regression method.

Simple Regression Analysis – An Example

Matrix, Inc. wants to know its average fixed cost and variable cost per unit.

Using the data to the right, let's see how to do a regression using Microsoft Excel.

	B	C	D
1			
2			
3	Month	Total Cost	Units (Meals)
4	January	$ 6,720	1,280
5	February	7,260	1,810
6	March	7,270	1,620
7	April	11,060	2,830
8	May	12,580	3,630
9	June	8,660	2,610
10	July	8,580	2,460
11	August	9,550	2,640
12	September	13,050	3,620
13	October	11,060	2,840
14	November	7,320	1,820
15	December	7,370	1,650
16	January	6,790	1,260
17	February	7,480	1,850
18	March	6,990	1,710
19	April	11,400	2,940

Simple Regression Using Excel – An Example

You will need three pieces of information from your regression analysis:

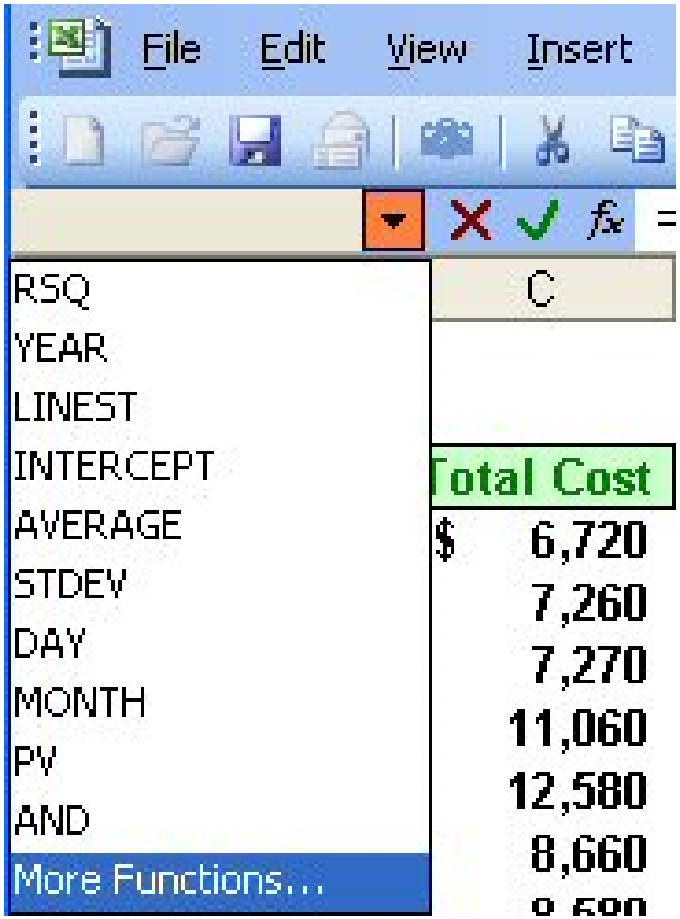
1. Estimated Variable Cost Per Unit (line slope)
2. Estimated Fixed Costs (line intercept)
3. Goodness of fit, or R^2

To get these three pieces information we will need to use *three* Excel functions.

SLOPE, INTERCEPT, and RSQ

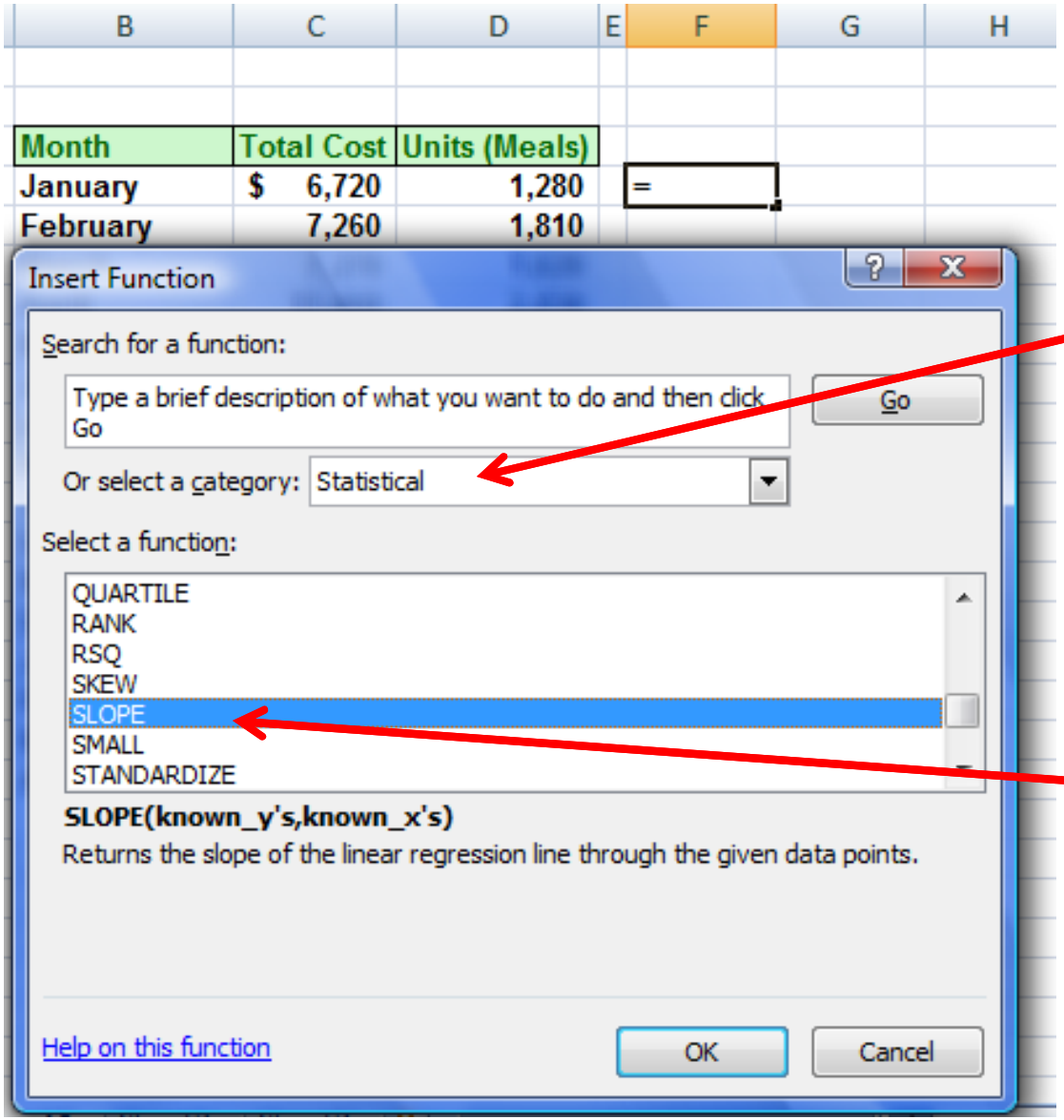
	B	C	D
1			
2			
3	Month	Total Cost	Units (Meals)
4	January	$ 6,720	1,280
5	February	7,260	1,810
6	March	7,270	1,620
7	April	11,060	2,830
8	May	12,580	3,630
9	June	8,660	2,610
10	July	8,580	2,460
11	August	9,550	2,640
12	September	13,050	3,620
13	October	11,060	2,840
14	November	7,320	1,820
15	December	7,370	1,650
16	January	6,790	1,260
17	February	7,480	1,850
18	March	6,990	1,710
19	April	11,400	2,940

Simple Regression Using Excel – An Example



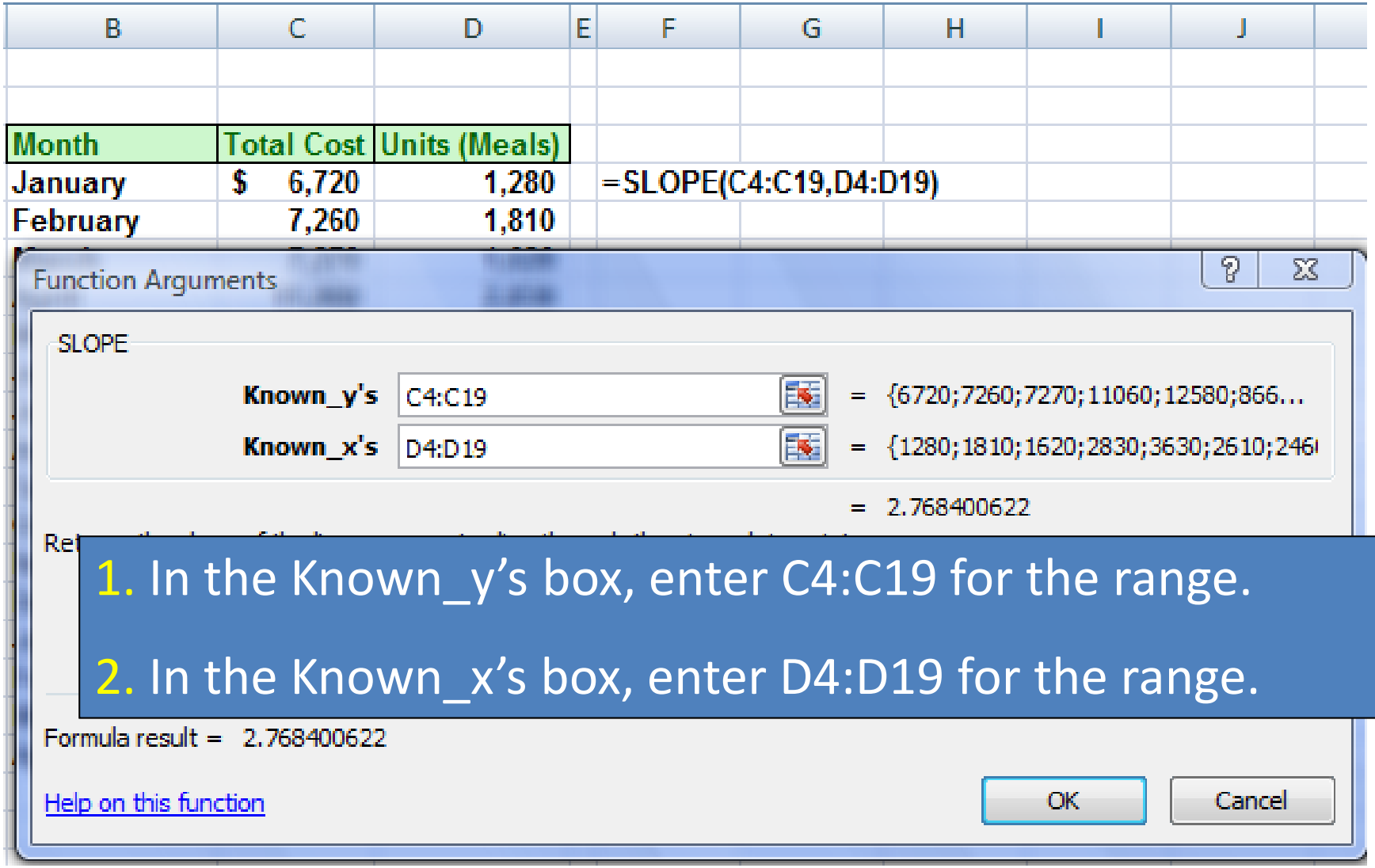
Place your cursor in cell F4 and press the = key. Click on the pull down menu and scroll down to “More Functions . . .”

Simple Regression Using Excel – An Example



Scroll down to the "Statistical", functions. Now scroll down the statistical functions until you highlight "SLOPE"

Simple Regression Using Excel – An Example



Month	Total Cost	Units (Meals)
January	$ 6,720	1,280
February	7,260	1,810

=SLOPE(C4:C19,D4:D19)

Function Arguments

SLOPE

Known_y's C4:C19 = {6720;7260;7270;11060;12580;866...

Known_x's D4:D19 = {1280;1810;1620;2830;3630;2610;246

= 2.768400622

1. In the Known_y's box, enter C4:C19 for the range.

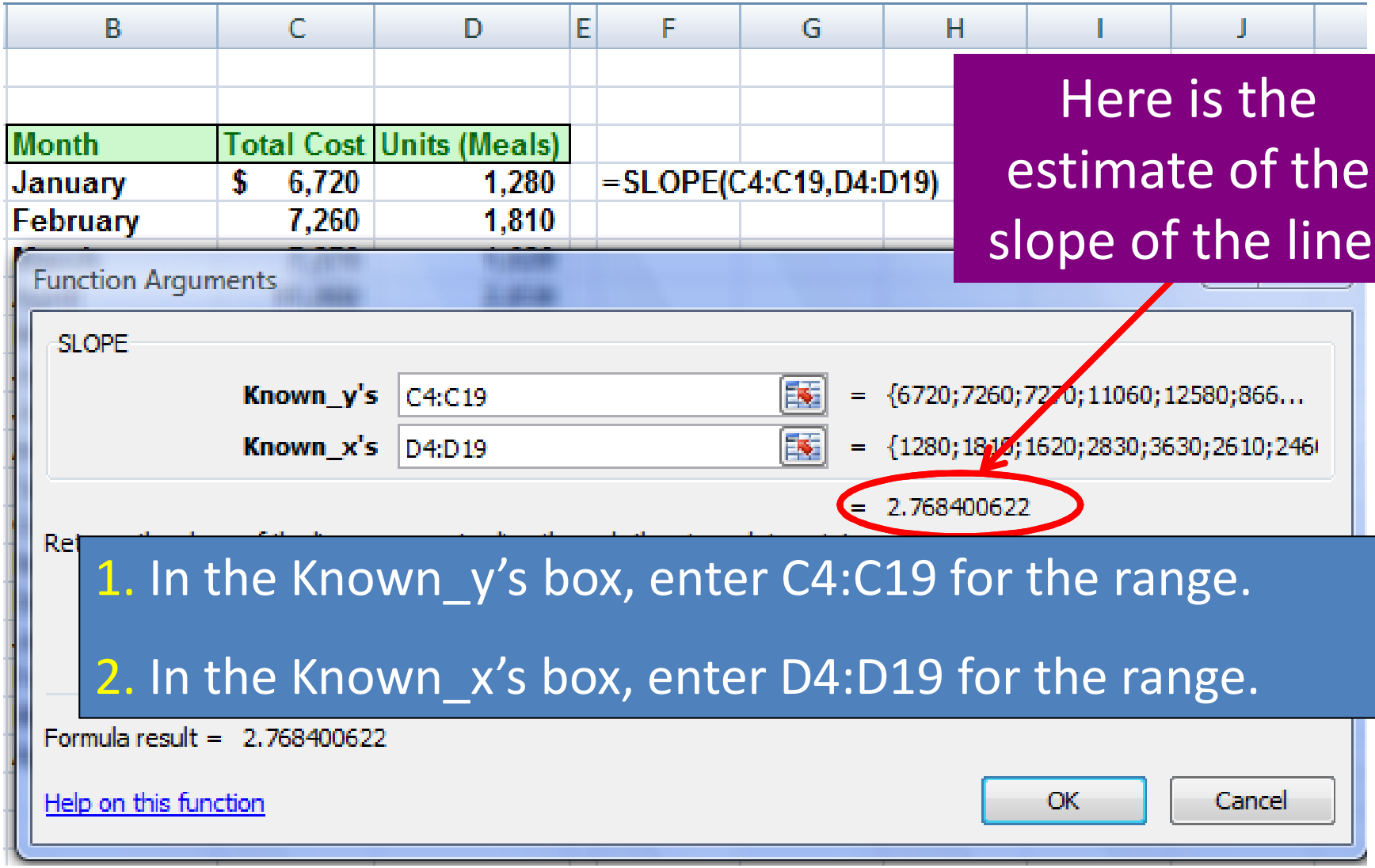
2. In the Known_x's box, enter D4:D19 for the range.

Formula result = 2.768400622

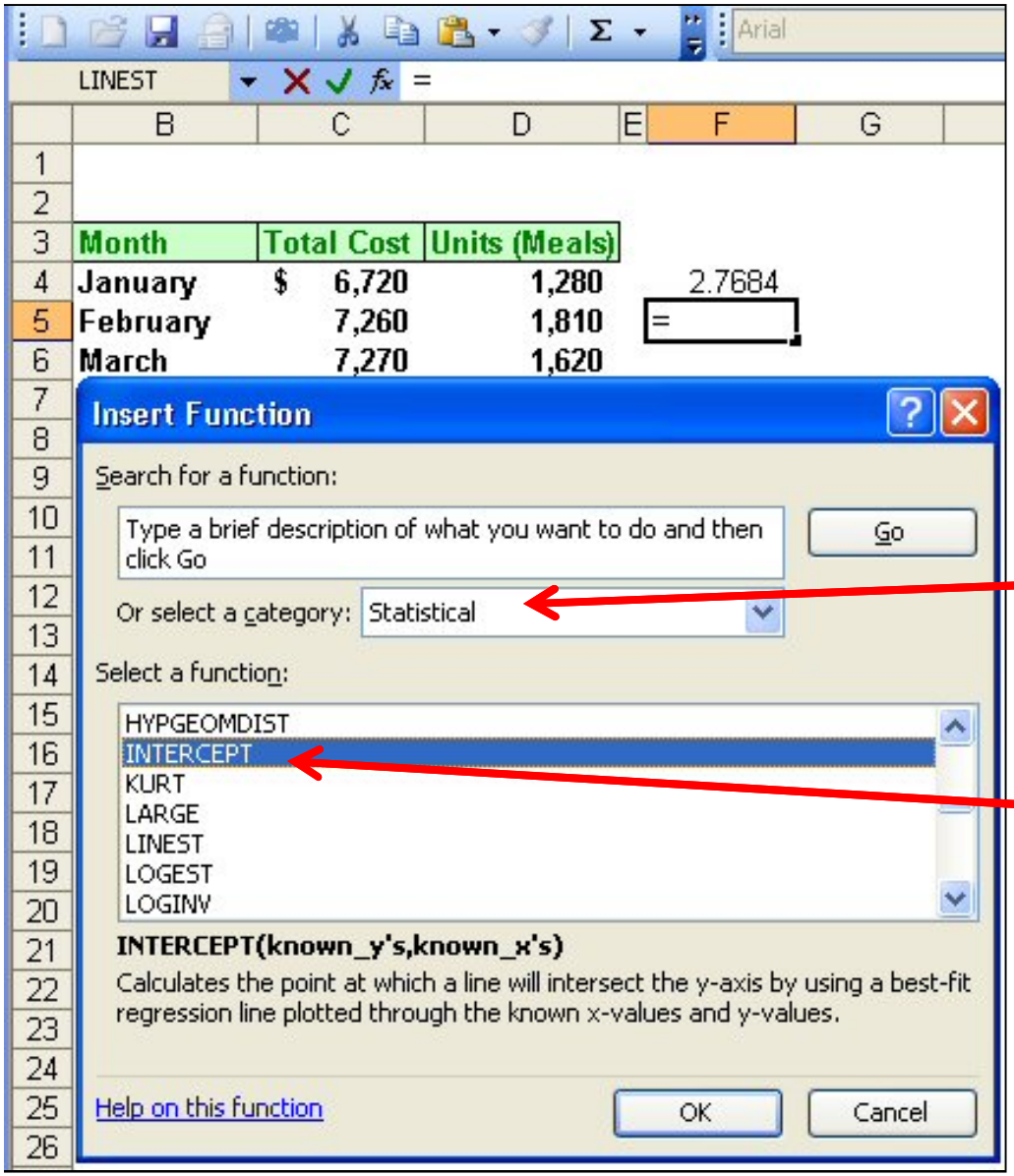
Help on this function

OK Cancel

Simple Regression Using Excel – An Example

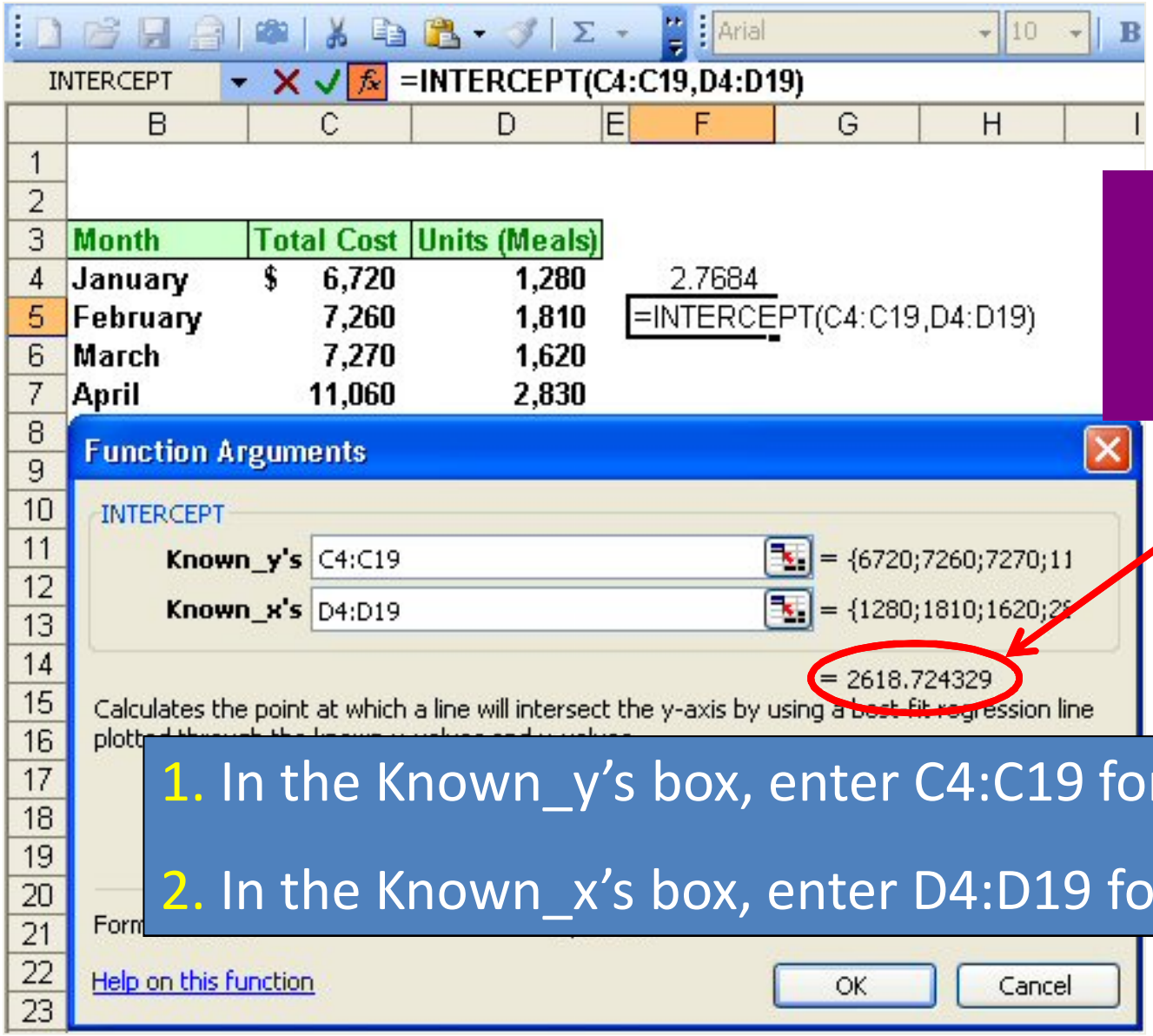


Simple Regression Using Excel – An Example



With your cursor in cell F5, press the = key and go to the pull down menu for "Special Functions." Select Statistical and scroll down to highlight the INTERCEPT function.

Simple Regression Using Excel – An Example

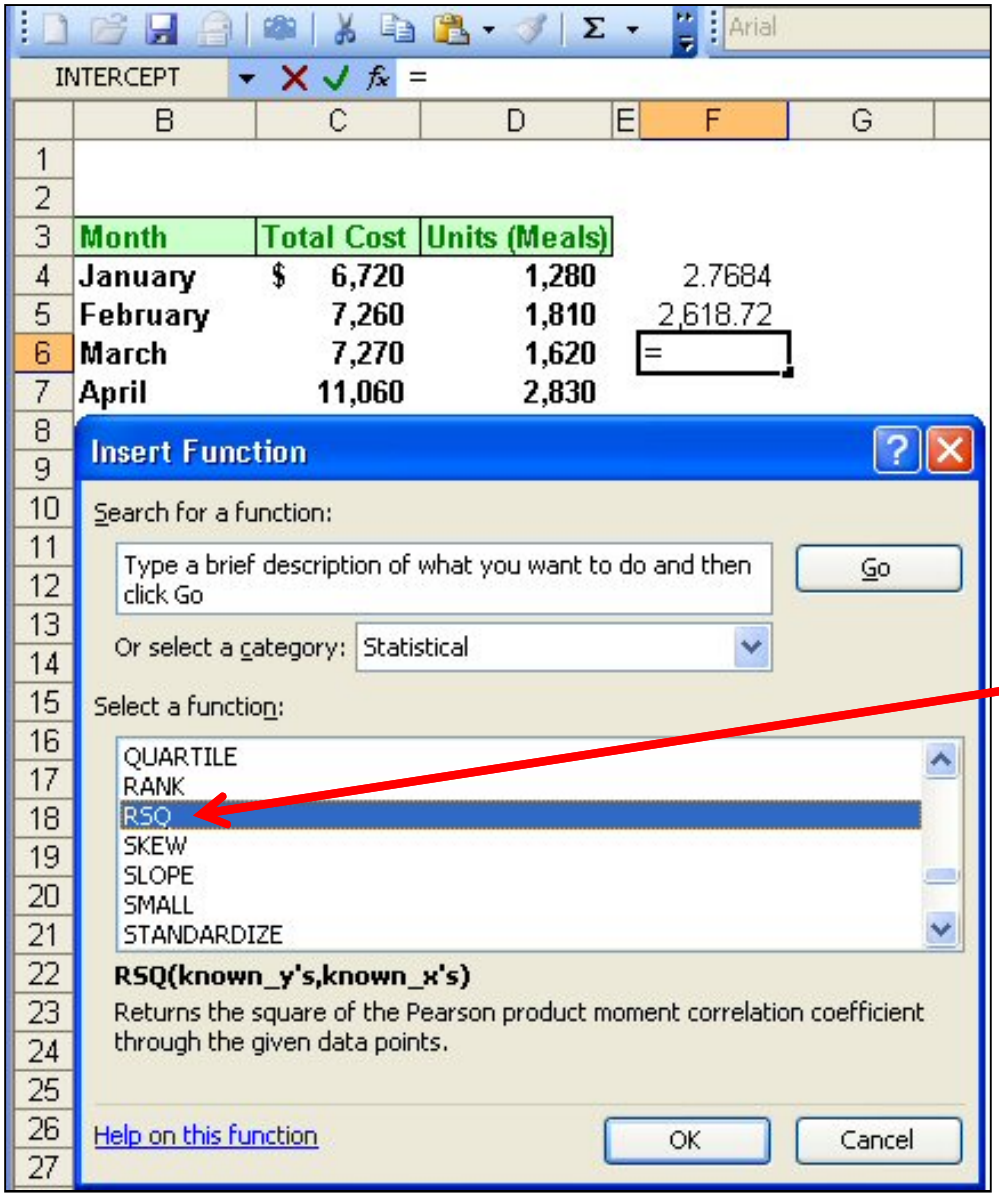


Here is the estimate of the fixed costs.

1. In the Known_y's box, enter C4:C19 for the range.

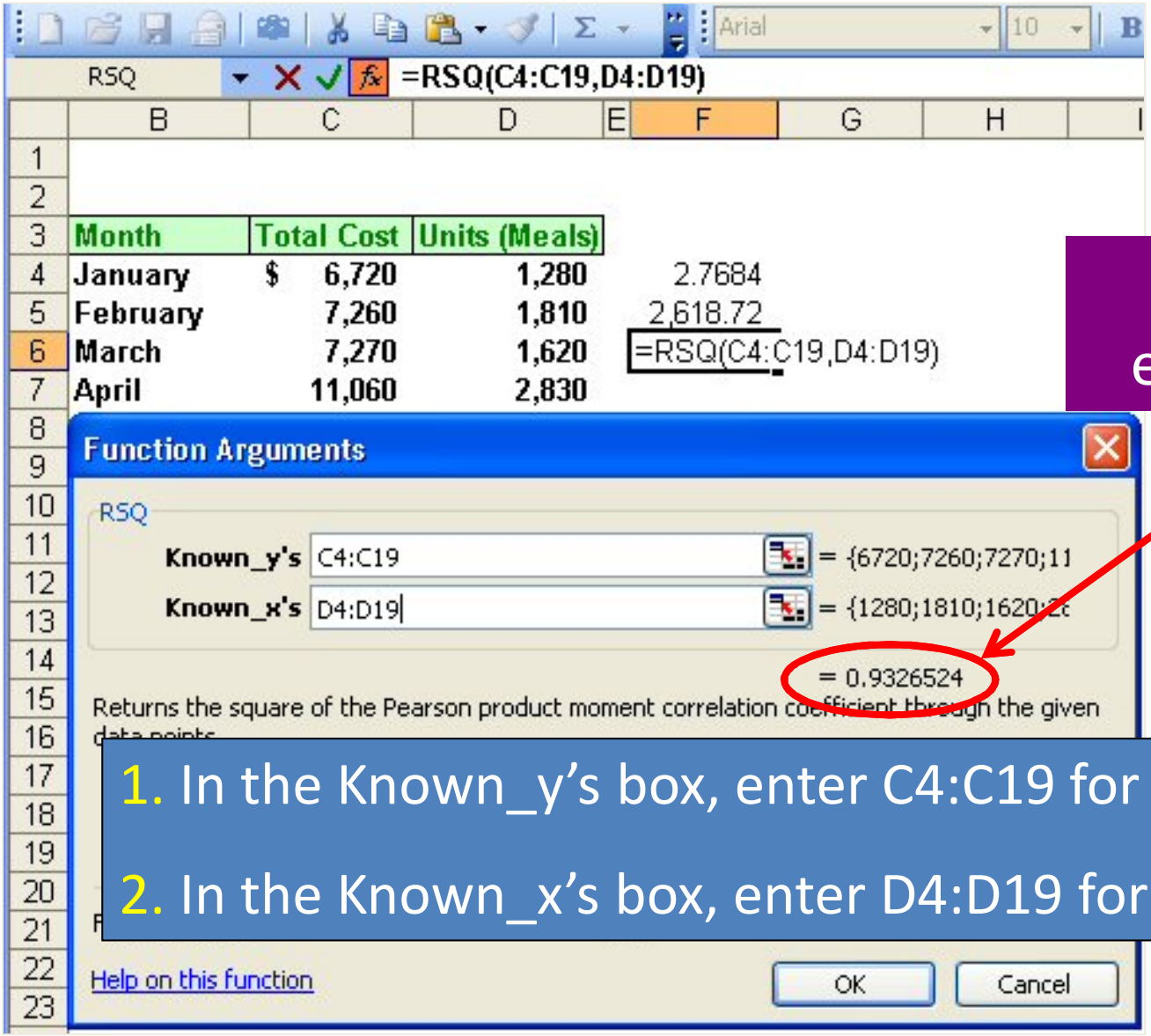
2. In the Known_x's box, enter D4:D19 for the range.

Simple Regression Using Excel – An Example



Finally, we will determine the "*goodness of fit*", or R^2, by using the *RSQ* function.

Simple Regression Using Excel – An Example



Here is the estimate of R^2.

1. In the Known_y's box, enter C4:C19 for the range.
2. In the Known_x's box, enter D4:D19 for the range.

Cost Classifications for Assigning Costs to Cost Objects

- Costs are assigned to cost objects for a variety of purposes including pricing, preparing profitability studies, and controlling spending.
- A **cost object** is anything for which cost data are desired – including products, customers, jobs, and organizational subunits.
- For purpose of assigning costs to cost objects, costs are classified as either ***direct*** or ***indirect***.
- A direct cost is a cost that can easily and conveniently traced to a specific cost object.
- An indirect cost is a cost that cannot be easily and conveniently traced to a specific cost object. i.e., a Campbell Soup factory may produce dozens of varieties of canned soup. The factory manager salary would be an indirect cost because this cost is incurred as a consequence of running the entire factory – not to produce any particular soup.

Differential Cost and Revenue

- Decisions involve choosing between alternatives. In business decisions, each alternative will have costs and benefits that must be compared to the costs and benefits of the other available alternatives.
- A difference in cost between two alternatives is known as differential cost.
- A difference in revenues between two alternatives is known as differential revenue.
- Differential cost and revenues can also be termed as incremental costs and revenues.

Marginal Cost and Revenue

- Economists use the term marginal cost and marginal revenue.
- The revenue that can be obtained from selling one extra unit of product is called **marginal revenue**.
- The cost to produce one extra unit is called **marginal cost**.