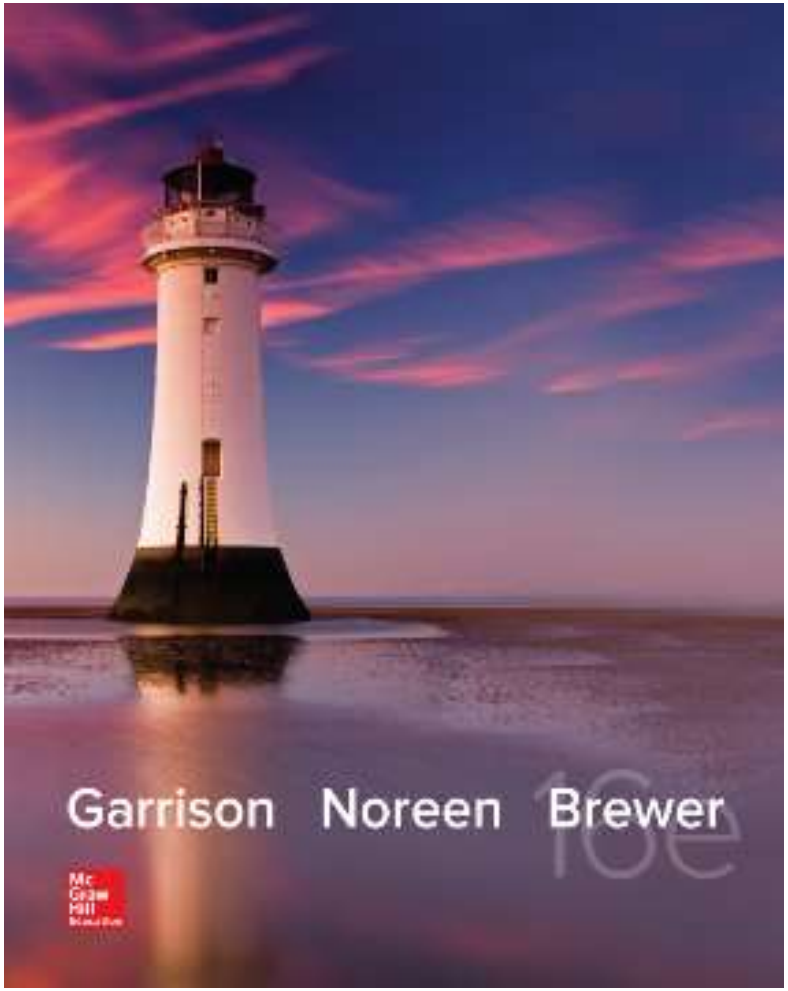
Managerial Accounting

Sixteenth Edition



Chapter 9

Flexible Budgets and Performance Analysis

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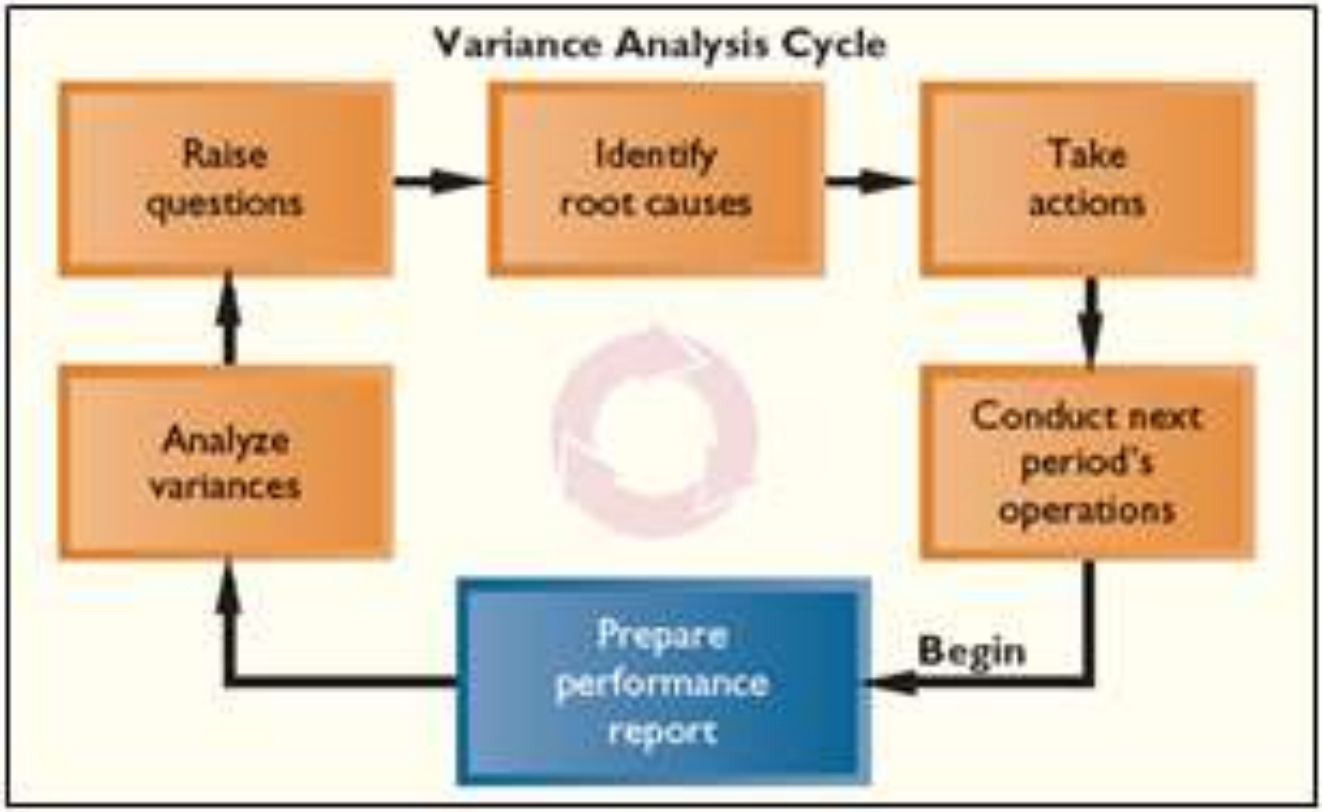
Variance Analysis Cycle



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Learning Objective 1

Prepare a planning budget and a flexible budget and understand how they differ from one another.

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Characteristics of Flexible Budgets – Part 1

- Planning budgets are prepared for a single, **planned level** of activity.
- Performance evaluation is difficult when actual activity differs from the planned level of activity.

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Characteristics of Flexible Budgets – Part 2

1. May be prepared for any activity level in the relevant range.
2. Show costs that should have been incurred at the actual level of activity, enabling "apples to apples" cost comparison.
3. Help managers control costs.
4. Improve performance evaluation.

Let's look at Larry's Lawn Service.

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Deficiencies of the Static Planning Budget – Part 1

Larry's Lawn Service provides lawn care in a planned community where all lawns are approximately the same size. At the end of May, Larry prepared his June budget based on mowing 500 lawns. Since all of the lawns are similar in size, Larry felt that the number of lawns mowed in a month would be the best way to measure overall activity for his business.

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Deficiencies of the Static Planning Budget – Part 2

Larry's Planning Budget

Larry's Lawn Services For the Month Ended June 30

	Revenue/Cost Formulas	Planning Budget
Number of lawns (Q)		500
Revenue	($75Q)	$ 37,500
Expenses:		
Wages and salaries	($5,000 + $30Q)	$ 20,000
Gasoline and supplies	($9Q)	4,500
Equipment maintenance	($3Q)	1,500
Office and shop utilities	($1,000)	1,000
Office and shop rent	($2,000)	2,000
Equipment Depreciation	($2,500)	2,500
Insurance	($1,000)	1,000
Total expenses		32,500
Net operating income		$ 5,000

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Deficiencies of the Static Planning Budget – Part 3

Larry's Actual Results

Larry's Lawn Services For the Month Ended June 30

	Actual results
Number of lawns (Q)	550
Revenue	$ 43,000
Expenses:	
Wages and salaries	$ 23,500
Gasoline and supplies	5,100
Equipment maintenance	1,300
Office and shop utilities	950
Office and shop rent	2,000
Equipment Depreciation	2,500
Insurance	1,200
Total expenses	36,550
Net operating income	$ 6,450

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Deficiencies of the Static Planning Budget – Part 4 (1 of 2)

Larry's Actual Results Compared with the Planning Budget

Larry's Lawn Services For the Month Ended June 30

	Revenue/Cost Formulas	Actual Results	Planning Budget	Variances
Number of lawns (Q)		550	500	
Revenue	($75Q)	$ 43,000	$ 37,500	$ 5,500 **F**
Expenses:				
Wages and salaries	($5,000 + $30Q)	$ 23,500	$ 20,000	$ 3,500 **U**
Gasoline and supplies	($9Q)	5,100	4,500	600 **U**
Equipment maintenance	($3Q)	1,300	1,500	200 **F**
Office and shop utilities	($1,000)	950	1,000	50 **F**
Office and shop rent	($2,000)	2,000	2,000	-

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Deficiencies of the Static Planning Budget – Part 4 (2 of 2)

	Revenue/Cost Formulas	Actual Results	Planning Budget	Variances
Equipment Depreciation	($2,500)	2,500	2,500	-
Insurance	($1,000)	1,200	1,000	200 **U**
Total expenses		36,550	32,500	4,050 **U**
Net operating income		$ 6,450	$ 5,000	$ 1,450 **F**

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Deficiencies of the Static Planning Budget – Part 5

Larry's Actual Results Compared with the Planning Budget

- **F = Favorable variance** that occurs when actual revenue is greater than budgeted revenue.
- **U = Unfavorable variance** that occurs when actual costs are greater than budgeted costs.
- **F = Favorable variance** that occurs when actual costs are less than budgeted costs.

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Deficiencies of the Static Planning Budget – Part 6

Larry's Actual Results Compared with the Planning Budget

- Since these variances are **unfavorable**, has Larry done a poor job controlling costs?
- Since these variances are **unfavorable**, has Larry done a poor job controlling costs?
- Since these variances are **favorable**, has Larry done a good job controlling costs?

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Deficiencies of the Static Planning Budget – Part 7

At this point, we cannot answer this question because **the actual level of activity is greater than the planned level of activity.** Therefore, actual variable costs are likely to be higher than planned variable costs regardless of Larry's managerial efficiency.

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Deficiencies of the Static Planning Budget – Part 8

The relevant question is…

"How much of the cost variances are due to higher activity and how much are due to cost control?"

To answer the question, we need to **flex** the planning budget to accommodate the actual level of activity.

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How a Flexible Budget Works – Part 1

To flex a budget, we need to know that:

- **Total variable** costs **change** in direct proportion to changes in activity.
- **Total fixed** costs remain **unchanged** within the relevant range.

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How a Flexible Budget Works – Part 2

Let’s prepare a **flexible** budget for Larry’s Lawn Service.

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Preparing a Flexible Budget

Larry's Flexible Budget

Larry's Lawn Services For the Month Ended June 30

	Revenue/Cost Formulas	Flexible Budget
Number of lawns (Q)		550
Revenue	($75Q)	$ 41,250
Expenses:		
Wages and salaries	($5,000 + $30Q)	$ 21,500
Gasoline and supplies	($9Q)	4,950
Equipment maintenance	($3Q)	1,650
Office and shop utilities	($1,000)	1,000
Office and shop rent	($2,000)	2,000
Equipment Depreciation	($2,500)	2,500
Insurance	($1,000)	1,000
Total expenses		34,600
Net operating income		$ 6,650

$75 × 550 lawns = $41,250

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Quick Check 1

What should the total wages and salaries cost be in a flexible budget for 600 lawns?

a. $18,000.
b. $20,000.
c. $23,000.
d. $25,000.

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Quick Check 1a

What should the total wages and salaries cost be in a flexible budget for 600 lawns?

a. $18,000.
b. $20,000.
c. $23,000.
d. $25,000.

Answer: c

Total wages and salaries cost = $5,000 + ($30 per lawn × 600 lawns)
= $5,000 + $18,000
= $23,000

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Learning Objective 2

Calculate and interpret activity variances.

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Activity Variances – Part 1

An **activity variance** arises solely due to the difference in the actual level of activity and the level of activity included in the planning budget.

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Activity Variances – Part 2

Let's use **flexible** budgeting concepts to compute activity variances for Larry's Lawn Service.

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Activity Variances – Part 3 (1 of 2)

Larry's Flexible Budget Compared with the Planning Budget

Larry's Lawn Services For the Month Ended June 30

	Revenue/Cost Formulas	Flexible Budget	Planning Budget	Activity Variances
Number of lawns (Q)		550	500	
Revenue	($75Q)	$ 41,250	$ 37,500	$ 3,750 **F**
Expenses:				
Wages and salaries	($5,000 + $30Q)	$ 21,500	$ 20,000	$ 1,500 **U**
Gasoline and supplies	($9Q)	4,950	4,500	450 **U**
Equipment maintenance	($3Q)	1,650	1,500	150 **U**
Office and shop utilities	($1,000)	1,000	1,000	-
Office and shop rent	($2,000)	2,000	2,000	-

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Activity Variances – Part 3 (2 of 2)

	Revenue/Cost Formulas	Flexible Budget	Planning Budget	Activity Variances
Equipment Depreciation	($2,500)	2,500	2,500	-
Insurance	($1,000)	1,000	1,000	-
Total expenses		34,600	32,500	2,100 **U**
Net operating income		$ 6,650	$ 5,000	$ 1,650 **F**

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Activity Variances – Part 4

Larry's Flexible Budget Compared with the Planning Budget

Activity and revenue increase by 10 percent, but net operating income increases by more than 10 percent due to the presence of fixed costs.

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Learning Objective 3

Calculate and interpret revenue and spending variances.

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Key Terminology

- The difference is a revenue variance.
  - Actual revenue
  - Flexible budget revenue
- The difference is a spending variance.
  - Actual cost
  - Flexible budget cost

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Revenue and Spending Variances – Part 1

Now, let's use **flexible** budgeting concepts to compute revenue and spending variances for Larry's Lawn Service.

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Revenue and Spending Variances – Part 2 (1 of 2)

Larry's Flexible Budget Compared with the Actual Results

Larry's Lawn Services For the Month Ended June 30

	Revenue/Cost Formulas	Flexible Budget	Planning Budget	Activity Variances
Number of lawns (Q)		550	500	
Revenue	($75Q)	$ 43,000	$ 41,250	$ 1,750 **F**
Expenses:				
Wages and salaries	($5,000 + $30Q)	$ 23,500	$ 21,500	$ 2,000 **U**
Gasoline and supplies	($9Q)	5,100	4,950	150 **U**
Equipment maintenance	($3Q)	1,300	1,650	350 **U**
Office and shop utilities	($1,000)	950	1,000	50 **F**
Office and shop rent	($2,000)	2,000	2,000	-

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Revenue and Spending Variances – Part 2 (2 of 2)

	Revenue/Cost Formulas	Flexible Budget	Planning Budget	Activity Variances
Equipment Depreciation	($2,500)	2,500	2,500	-
Insurance	($1,000)	1,200	1,000	200 **U**
Total expenses		36,550	34,600	1,950 **U**
Net operating income		$ 6,450	$ 6,650	200 **U**

$1,750 favorable revenue variance = $1,750 **F**

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Revenue and Spending Variances – Part 3

Larry's Flexible Budget Compared with the Actual Results

Larry's Lawn Services For the Month Ended June 30

Spending variances:

- 2,000 **U**
- 150 **U**
- 350 **F**
- 50 **F**
- -
- -
- 200 **U**
- 1,950 **U**
- 200 **U**

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Learning Objective 4

Prepare a performance report that combines activity variances and revenue and spending variances.

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A Performance Report Combining Activity and Revenue and Spending Variances – Part 1

Now, let's use **flexible** budgeting concepts to combine the revenue and spending variances reports for Larry's Lawn Service.

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A Performance Report Combining Activity and Revenue and Spending Variances – Part 2 (1 of 2)

Larry's Lawn Services **Flexible Budget Performance Report** For the Month Ended June 30

	Revenue/Cost Formulas	Actual Results	Revenue and Spending Variances	Flexible Budget	Activity Variances	Planning Budget
Number of laws (Q)		550		550		500
Revenue	($75Q)	$ 43,000	$ 1,750 **F**	$41,250	$ 3,750 **F**	$ 37,500
Expenses:						
Wages and salaries	($5,000 + 30Q)	$ 23,500	$ 2,000 **U**	$21,500	$ 1,500 **U**	$ 20,000
Gasoline and supplies	($9Q)	5,100	150 **U**	4,950	450 **U**	4,500
Equipment maintenance	($3Q)	1,300	350 **F**	1,650	150 **U**	1,500
Office and shop utilities	($1,000)	950	50 **F**	1,000	-	1,000

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A Performance Report Combining Activity and Revenue and Spending Variances – Part 2 (2 of 2)

	Revenue /Cost Formulas	Actual Results	Revenue and Spending Variances	Flexible Budget	Activity Variances	Planning Budget
Office and shop rent	($2,000)	2,000	-	2,000	-	2,000
Equipment Depreciation	($2,500)	2,500	-	2,500	-	2,500
Insurance	($1,000)	1,200	200 **U**	1,000	-	1,000
Total expenses		36,550	1,950 **U**	34,600	2,100 **U**	32,500
Net operating income		$ 6,450	$ 200 **U**	$ 6,650	$ 1,650 **F**	$ 5,000

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A Performance Report Combining Activity and Revenue and Spending Variances – Part 3

- 50 lawns × $30 per lawn = $1,500 **U**
- 50 lawns × $75 per lawn = $3,750 **F**

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A Performance Report Combining Activity and Revenue and Spending Variances – Part 4

$43,000 actual − $41,250 budget = 1,750 **F**

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Performance Reports in Non-Profit Organizations

Non-profit organizations may receive funding from sources other than the sale of goods and services, so revenues may consist of both fixed and variable elements.

Universities:

- State funding
- Tuition and fees
- Donations
- Endowments

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Performance Reports in Cost Centers

Performance reports are often prepared for cost centers. These reports should be prepared using the same principles discussed so far, except for the fact that these reports will not contain revenue or net operating income variances.

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Learning Objective 5

Prepare a flexible budget with more than one cost driver.

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Flexible Budgets with Multiple Cost Drivers – Part 1

- More than one cost driver may be needed to adequately explain all of the costs in an organization.
- The cost formulas used to prepare a flexible budget can be adjusted to recognize multiple cost drivers.

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Flexible Budgets with Multiple Cost Drivers – Part 2

Because the time required for edging and trimming is different for different lawns, Larry decided to add an additional cost driver (hours) for the time required for edging and trimming. So Larry estimated the additional hours and developed a new flexible budget that includes the second cost driver in both his revenue and expense budget formulas.

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Flexible Budgets with Multiple Cost Drivers – Part 3 (1 of 2)

Larry's Budget Based on More than One Cost Driver

Larry's Lawn Services For the Month Ended June 30

	Revenue/Cost Formulas	Flexible Budget
Number of laws (Q)		550
Number of hours (H)		100
Revenue	($75Q+**$25H**)	$ 43,750
Expenses:		
Wages and salaries	**($5,000 + 29Q + $25H)**	$ 23,450
Gasoline and supplies	**($8Q + $6H)**	5,000
Equipment maintenance	**($2Q + $2H)**	1,300
Office and shop utilities	($1,000)	2,000
Office and shop rent	($2,000)	2,000

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Flexible Budgets with Multiple Cost Drivers – Part 3 (2 of 2)

	Revenue/Cost Formulas	Flexible Budget
Equipment Depreciation	($ 2,500)	2,500
Insurance	($ 1,000)	1,000
Total expenses		36,250
Net operating income		$ 7,500

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Learning Objective 6

Understand common errors made in preparing performance reports based on budgets and actual results.

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Some Common Errors

The most common errors when preparing performance reports are to implicitly assume that:

1. All costs are fixed, or that;
2. All costs are variable.

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Common Error 1: Assuming All Costs Are Fixed (1 of 2)

Faulty Analysis Comparing Budgeted Amounts to Actual Amounts

Larry's Lawn Services For the Month Ended June 30

	Actual Results	Planning Budget	Variances
Number of lawns (Q)	550	500	
Revenue	$ 43,000	$ 37,500	$ 5,500 **F**
Expenses:			
Wages and salaries	$ 23,500	$ 20,000	$ 3,500 **U**
Gasoline and supplies	5,100	4,500	600 **U**
Equipment maintenance	1,300	1,500	200 **F**
Office and shop utilities	950	1,000	50 **F**
Office and shop rent	2,000	2,000	-

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Common Error 1: Assuming All Costs Are Fixed (2 of 2)

	Actual Results	Planning Budget	Variances
Equipment Depreciation	2,500	2,500	-
Insurance	1,200	1,000	200 **U**
Total expenses	36,550	32,500	4,050 **U**
Net operating income	$ 6,450	$ 5,000	$ 1,450 **F**

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Common Error 2: Assuming All Costs Are Variable (1 of 2)

Faulty Analysis that Assumes All Budget Items Are Variable

Larry's Lawn Services For the Month Ended June 30

	Actual Results	Planning Budget	Planning Budget × 110%	Variances
Number of lawns (Q)	550	500	550	
Revenue	$ 43,000	$ 37,500	$ 41,250	**$ 1,750 F**
Expenses:				
Wages and salaries	$ 23,500	$ 20,000	$ 22,000	$ 1,500 **U**
Gasoline and supplies	5,100	4,500	4,950	150 **U**
Equipment maintenance	1,300	1,500	1,650	350 **F**
Office and shop utilities	950	1,000	1,100	150 **F**
Office and shop rent	2,000	2,000	2,200	200 **F**

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Common Error 2: Assuming All Costs Are Variable (2 of 2)

	Actual Results	Planning Budget	Planning Budget × 110%	Variances
Equipment Depreciation	2,500	2,500	2,750	250 **F**
Insurance	1,200	1,000	1,100	100 **U**
Total expenses	36,550	32,500	35,750	800 **U**
Net operating income	$ 6,450	$ 5,000	$ 5,500	$ 950 **F**

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End of Presentation

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