

FLEXIBLE BUDGETS

Key Terms and Concepts to Know

Static or Planning Budgets

- Used for planning purposes
- Prepared at the beginning of the period
- Based on one projected level of activity

Flexible Budgets

- Used for control purposes
- Prepared at the end of the period
- "Flexed" to accommodate actual level of production
- Use costs (variable and fixed) and revenue formulas from static budgets

Revenue Variance

- Difference between how much the revenue should have been at the actual level of activity and the actual revenue for the period.
- Favorable revenue variance occurs when the revenue is greater than expected at the actual level of activity for the period.
- Unfavorable revenue variance occurs when the revenue is less than expected at the actual level of activity for the period.

Spending Variance

- Difference between how much an expense should have been at the actual level of activity and the actual amount of expense incurred.
- Favorable spending variance occurs when the cost is less than expected at the actual level of activity for the period.
- Unfavorable spending variance occurs when the cost is greater than expected at the actual level of activity for the period.

Key Topics to Know

Actual Performance vs. Planning Budget

- The planning or static budget is a “best guess” as to what the actual performance will be during the budget period. Needless to say, rarely does actual performance match the planning budget.
- The differences between the planning budget and actual performance are due to two basic causes: differences in activity level and differences in spending.

Flexible Budget

- To bridge the gap between planning budget and actual performance and to isolate each difference, a flexible budget is constructed based on the actual level of activity and the revenue and cost formulas from the planning budget.
- The revenue and cost formulas are developed as follows;
 - If the static budget expected to sell 100 units at a price of \$30 per unit, then \$30 would be the per-unit revenue formula for any number of units sold.
 - If the static budget expected total variable costs to be 100 units sold at a cost of \$18 per unit, then \$18 would be the per-unit variable cost formula for any number of units sold.
 - If the static budget expected total fixed costs to be \$700, then \$700 will be the budgeted fixed costs at any level of activity within the relevant range of activity.
- The differences between the static and flexible budgets are due to the difference between planned (static) activity and actual (flexible) activity. These differences are labeled activity variances.
- The differences between the flexible budget and the actual performance are due to differences in selling price per unit for revenue and spending per unit for expenses. These differences are labeled revenue and spending variances. Note that for overhead costs and selling and administrative expenses, spending variances result from both the cost per item and the number of items used.

Putting the Three Pieces Together

- The following table shows the static budget, flexible budget and actual performance separated by the variance columns.
- Activity variances explain how income was affected by changes in sales volume.
- Revenue and spending variances explain how income was affected by changes in selling price per unit, variable cost per unit and total fixed costs.
- Although fixed costs are not affected by changes in volume, this does not mean that actual fixed costs will always be the same as planned fixed costs. Actual spending for fixed costs may or may not be the same as planned spending

	<u>Static Budget</u>	<u>Activity Variances</u>	<u>Flexible Budget</u>	<u>Revenue + Spending Variances</u>	<u>Actual Performance</u>
Unit Volume	Planned	Cause of activity variances	Actual	No variance	Actual
Revenue	Planned volume x Planned selling price	Volume difference x planned selling price	Actual volume x Planned selling price	Caused by differences in selling price per unit	Actual volume x Actual selling price
Expenses	Planned volume x Planned variable costs + Planned fixed costs	Volume difference x variable cost per unit	Actual volume x Planned variable costs + Planned fixed costs	Caused by spending differences on variable cost per unit and total fixed costs	Actual volume x Actual variable costs + Actual fixed costs
Income	Planned	Effect of volume difference on income	Should have been for actual volume	Effect of per unit revenue and variable cost differences and fixed cost spending on income	Actual

Example #1

The May 2009 income statement for Trajan Inc. is shown below:

	<u>Actual</u>	<u>Static Budget</u>
Units sold	110	100
Sales	\$3,200	\$3,000
Variable expenses	<u>\$1,920</u>	<u>\$1,800</u>
Contribution margin	\$1,280	\$1,200
Fixed expenses	<u>\$680</u>	<u>\$700</u>
Operating income	\$600	\$500

- Required:
- a) Determine what the operating income should have been for the actual units sold.
 - b) Reconcile the difference between static budget and actual operating income.

Solution #1

	<u>Revenue and Cost Formula</u>	<u>Actual</u>	<u>Flexible Budget</u>	<u>Static Budget</u>
Units sold		110	→ 110	100
Sales	\$30	\$3,200	\$3,300	\$3,000
Variable expenses	<u>\$18</u>	<u>\$1,920</u>	<u>1,980</u>	<u>\$1,800</u>
Contribution margin	\$12	\$1,280	1,320	\$1,200
Fixed expenses	\$700 in total	<u>\$680</u>	<u>700</u>	<u>\$700</u>
Operating income		\$600	\$620	\$500

Step 1: Revenue and cost formula = static budget / units sold for revenue and variable expenses and total static budget fixed costs

Step 2: Create flexible budget based on actual units sold and the revenue and cost formula.

The static budget and actual operating income may be reconciled as follows:

Static budget income	\$500
+ Increase due to 10 additional units sold	\$120
= Flexible budget income	\$620
- Decrease due to reductions in actual selling price per unit	<u>\$20</u>
= Actual income	\$600

Example #2

Jansen Corporation's data concerning the company's monthly revenues and costs appear below.

	<u>Variable Cost</u> <u>Formula</u>	<u>Fixed Cost</u> <u>Formula</u>
Revenue	\$15.00/unit	
Costs of material	\$7.25/unit	
Wages and salaries		\$20,000
Utilities	\$0.45/unit	\$1,200
Rent		\$10,000
Miscellaneous	\$0.90/unit	\$2,000

- Required:
- a) Prepare the company's planning budget assuming that 10,000 units were manufactured.
 - b) Assume that 9,900 units were actually manufactured. Prepare the flexible budget for this level of activity.
 - c) Prepare a flexible budget performance report for the company using the actual income statement information shown below.

Revenue	\$149,200
Costs of materials	73,200
Salaries	19,500
Utilities	5,800
Rent	10,000
Miscellaneous	12,000

Solution #2

a) Planning Budget and b) Flexible Budget

	<u>Revenue and Cost Formula</u>	<u>Planning Budget Income Statement</u>	<u>Flexible Budget Income Statement</u>
Budgeted number of units sold		10,000	9,900
Revenue	\$15.00/unit	\$150,000	\$148,500
Expenses:			
Cost of materials	\$7.25/unit	72,500	71,775
Salaries	\$20,000	20,000	20,000
Utilities	\$.45/unit+\$1,200	5,700	5,655
Rent	\$10,000	10,000	10,000
Miscellaneous	\$.90/unit+\$2,000	<u>11,000</u>	<u>10,910</u>
Total expenses		<u>\$119,200</u>	<u>\$118,340</u>
Net Operating Income		\$30,800	\$30,160

b) Flexible budget Performance Report

		<u>(1) Planning Budget</u>	<u>(2) Flexible Budget</u>	<u>Revenue and Spending Variances (3) - (2)</u>	<u>(3) Actual Results</u>
Number of Units		10,000	9,900		9,900
Revenues	\$15.00/unit	\$150,000	\$148,500	\$700 F	\$149,200
Expenses:					
Cost of materials	\$7.25/unit	72,500	71,775	1,425 U	73,200
Salaries	\$20,000	20,000	20,000	500 F	19,500
Utilities	\$.45/unit+ \$1,200	5,700	5,655	145 U	5,800
Rent	\$10,000	10,000	10,000	0	10,000
Miscellaneous	\$.90/unit+ \$2,000	<u>11,000</u>	<u>10,910</u>	<u>1,090 U</u>	<u>12,000</u>
Total Expense		<u>119,200</u>	<u>118,340</u>	<u>2,160 U</u>	<u>120,500</u>
Net Operating Income		<u>\$30,800</u>	<u>\$30,160</u>	<u>1,460 U</u>	<u>\$28,700</u>

Practice Problems

Practice Problem #1

A partially completed flexible overhead budget for Sunflowers Inc. is shown below:

<u>Cost Formula</u>	<u>Activity Level in Units</u>		
	<u>8,000</u>	<u>12,000</u>	<u>16,000</u>
Variable overhead:			
Supplies		\$108,000	
Utilities		60,000	
Repairs		24,000	
Total variable overhead		\$192,000	
Fixed overhead:			
Depreciation		\$15,000	
Salaries		96,000	
Rent		44,000	
Total fixed overhead		\$155,000	
Total overhead		\$347,000	

Required: Fill in the missing data.

Practice Problem #2

Trois Elles Corporation recently prepared a manufacturing cost budget for an output of 50,000 units, as follows:

Direct materials	\$100,000
Direct labor	50,000
Variable overhead	75,000
Fixed overhead	100,000

Actual units produced amounted to 60,000. Actual costs incurred were: direct materials, \$110,000; direct labor, \$60,000; variable overhead, \$100,000; and fixed overhead, \$97,000.

Required: If Trois Elles evaluated performance by the use of a flexible budget, prepare a performance report showing the total variance.

Practice Problem #3:

Johnson, Inc.'s has provided the following information regarding June's results.

	<u>Revenue and Cost</u>	
	<u>Formula</u>	<u>Actual Results</u>
Revenue	\$13.00/unit	\$28,000
Conversion costs	\$3.25/unit	7,000
Salaries	\$8,000	7,600
Utilities	\$600 + \$0.50/unit	1,550
Rent	\$5,000	5,000
Miscellaneous	\$800 + \$0.80/unit	2,500

- Required:
- a) Prepare the company's planning budget assuming that 2,000 units were manufactured.
 - b) Assume that 2,100 units were actually manufactured. Prepare the flexible budget for this level of activity.
 - c) Compute the revenue and spending variances for June.

Practice Problem #4

Douglas Company provided the following budgeted information for the year:

Sales price	\$50 per unit
Variable manufacturing cost	\$32 per unit
Fixed manufacturing cost	\$100,000
Fixed selling and admin cost	\$40,000

Douglas predicted that sales would be 20,000 units, but the sales actually were 22,000 units. The actual sales price was \$48.50 per unit, and the actual variable manufacturing cost was \$33 per unit. Actual fixed manufacturing cost and fixed selling and administrative cost were \$104,000 and \$39,000, respectively.

- Required:
- a) Prepare a flexible budget showing actual results; calculate the flexible budget variances; and indicate whether the variances are Favorable (F) or Unfavorable (U).
 - b) How did the company perform versus the flexible budget?

True / False Questions

1. A static budget is a series of static budgets at different levels of activities.
True False
2. Flexible budgeting relies on the assumption that unit variable costs will remain constant within the relevant range of activity.
True False
3. Flexible budgets are widely used in production and service departments.
True False
4. A static budget is an effective means to evaluate a manager's ability to control costs, regardless of the actual activity level.
True False
5. A flexible budget is a budget that is designed to cover a range of activity.
True False
6. Static budget is prepared at the end of the period.
True False
7. Flexible budget is prepared at the end of the period.
True False
8. Flexible budget is used for control purposes.
True False
9. A flexible budget based on 15,000 hours revealed variable manufacturing overhead of \$90,000 and fixed manufacturing overhead of \$120,000. The budget for 25,000 hours would reveal total overhead costs of \$210,000.
True False
10. Flexible budgets reflect a company's anticipated costs based on variations in activity levels.
True False
11. A flexible budget adjusts the static budget to reflect the actual activity level achieved during the period.
True False

Multiple Choice Questions

1. A static budget
 - a) Should not be prepared in a company.
 - b) Is useful in evaluating a manager's performance by comparing actual variable costs and planned variable costs.
 - c) Shows planned results at the original budgeted activity level.
 - d) Is changed only if the actual level of activity is different than originally budgeted.

2. What is the primary difference between a static budget and a flexible budget?
 - a) The static budget contains only fixed costs, while the flexible budget contains only variable costs.
 - b) The static budget is adjusted for different activity levels, while a flexible budget is prepared for a single level of activity.
 - c) The static budget is prepared for a single level of activity, while a flexible budget is adjusted for different activity levels.
 - d) Both the static budget and the flexible budget are adjusted for different activity levels.

3. Star Lite Manufacturing Company prepared a static budget of 50,000 direct labor hours, with estimated overhead costs of \$250,000 for variable overhead and \$60,000 for fixed overhead. Trepid then prepared a flexible budget at 38,000 labor hours. How much is total overhead costs at this level of activity?
 - a) \$190,000
 - b) \$247,000
 - c) \$250,000
 - d) \$260,000

4. True Masons budgeted costs for 30,000 linear feet of block are:

Fixed manufacturing costs	\$12,000 per month
Variable manufacturing costs	\$16.00 per linear

True Masons installed 25,000 linear feet of block during March. What are the budgeted total manufacturing costs in March?

- a) \$320,000
- b) \$360,000
- c) \$400,000
- d) \$412,000

5. Wayman Company uses flexible budgets. At normal capacity of 10,000 units, budgeted manufacturing overhead is: \$50,000 variable and \$135,000 fixed. If Wayman had actual overhead costs of \$187,500 for 11,000 units produced, what is the difference between actual and flexible budget costs?
 - a) \$2,500 unfavorable
 - b) \$2,500 favorable
 - c) \$4,500 unfavorable
 - d) \$6,000 favorable

6. A company's static budget estimate of total overhead costs was \$100,000 based on the assumption that 10,000 units would be produced and sold. The company estimates that 30% of its overhead is variable and the remainder is fixed. What would be the total overhead costs according to the flexible budget if 12,000 units were produced and sold?
 - a) \$96,000
 - b) \$100,000
 - c) \$106,000
 - d) \$116,000

7. Which of the following statements is false?
 - a) A flexible budget is used for control purpose and a static budget is used for planning purposes.
 - b) A flexible budget is prepared at the end of the period and a static budget is prepared at the beginning of the period.
 - c) A flexible budget is not useful for controlling variable costs.
 - d) A static budget provides budgeted estimates for one level of activity.

8. A flexible budget
 - a) Is prepared when management cannot agree on objectives for the company.
 - b) Projects budget data for various levels of activity.
 - c) Is only useful in controlling fixed costs.
 - d) Cannot be used for evaluation purposes because budgeted data are adjusted to reflect actual results.

9. What budgeted amounts appear on the flexible budget?
 - a) Original budgeted amounts at the static budget activity level
 - b) Actual costs for the budgeted activity level
 - c) Budgeted amounts for the actual activity level achieved
 - d) Actual costs for the estimated activity level

10. A flexible budget:
- a) is preferred over a static budget in the evaluation of performance.
 - b) gives management flexibility in terms of meeting budget goals.
 - c) can be used to compare actual and budgeted costs at various levels of activity.
 - d) is characterized by choices "A" and "C" above.
11. Which of the following mathematical expressions is found in a typical flexible-budget formula for overhead?
- a) Total activity units + budgeted fixed overhead cost per unit.
 - b) Budgeted variable overhead cost per unit + budgeted fixed overhead cost.
 - c) $(\text{Budgeted variable overhead cost per unit} \times \text{total activity units}) + \text{budgeted fixed overhead costs}$.
 - d) $(\text{Budgeted fixed overhead cost per unit} \times \text{total activity units}) + (\text{budgeted variable overhead cost per unit} \times \text{total activity units})$.
12. A static budget:
- a) is based totally on prior year's costs.
 - b) is based on one anticipated activity level.
 - c) is based on a range of activity.
 - d) is preferred over a flexible budget in the evaluation of performance.

Solutions to Practice Problems

Practice Problem #1

	<u>Cost Formula</u>	<u>Activity Level in Units</u>		
		<u>8,000</u>	<u>12,000</u>	<u>16,000</u>
Variable overhead:				
Supplies	\$9.00	\$72,000	\$108,000	\$144,000
Utilities	\$5.00	40,000	60,000	80,000
Repairs	\$2.00	16,000	24,000	32,000
Total variable overhead		\$128,000	\$192,000	\$256,000
Fixed overhead:				
Depreciation		\$15,000	\$15,000	\$15,000
Salaries		96,000	96,000	96,000
Rent		44,000	44,000	44,000
Total fixed overhead		\$155,000	\$155,000	\$155,000
Total overhead		\$283,000	\$347,000	\$411,000

Variable overhead cost formula = variable overhead cost / activity level

Fixed overhead costs do not change as the level of activity changes.

Practice Problem #2

	<u>Cost Formula based on 50,000 units</u>	<u>Flexible Budget based on 60,000 units</u>	<u>Actual</u>	<u>Variance</u>	
Direct materials	\$2.00	\$120,000	\$110,000	\$10,000	F
Direct labor	\$1.00	60,000	60,000	0	
Variable overhead	\$1.50	90,000	100,000	10,000	U
Fixed overhead	\$100,000	100,000	97,000	3,000	F
Total costs		\$370,000	\$367,000	\$3,000	F

Practice Problem #3

- a) Planning Budget and
b) Flexible Budget

	<u>Revenue and Cost Formula</u>	<u>Planning Budget Income Statement</u>	<u>Flexible Budget Income Statement</u>
Budgeted number of units sold		2,000	2,100
Revenue	\$13.00/unit	\$26,000	\$27,300
Expenses:			
Conversion costs	\$3.25/unit	6,500	6,825
Salaries	\$8,000	8,000	8,000
Utilities	\$.50/unit+\$600	1,600	1,650
Rent	\$5,000	5,000	5,000
Miscellaneous	\$.80/unit+\$800	2,400	2,480
Total expenses		\$23,500	\$23,955
Net Operating Income		\$2,500	\$3,345

- c) Flexible budget Performance Report

		<u>(1) Flexible Budget</u>	<u>Revenue and Spending Variances (2) - (1)</u>	<u>(2) Actual Results</u>
Number of Units		2,100		2,100
Revenues	\$13.00/unit	\$27,300	\$700 F	\$28,000
Expenses:				
Cost of materials	\$3.25/unit	6,825	175 U	7,000
Salaries	\$8,000	8,000	400 F	7,600
Utilities	\$.50/unit+\$600	1,650	100 F	1,550
Rent	\$5,000	5,000	0	5,000
Miscellaneous	\$.80/unit+\$800	2,480	20 U	2,500
Total Expense		\$23,955	\$305 F	23,650
Net Operating Income		\$3,345	\$1,005 F	\$4,350

Practice Problem #4:

a)

	Flexible Budget	Actual Results	Variance
Units	22,000	22,000	0
Sales	\$1,100,000	\$1,067,000	\$33,000 U
Variable costs	<u>704,000</u>	<u>726,000</u>	<u>22,000</u> U
Contribution margin	396,000	341,000	55,000 U
Fixed costs:			
Manufacturing	100,000	104,000	4,000 U
Selling and admin costs	<u>40,000</u>	<u>39,000</u>	<u>1,000</u> F
Income	256,000	198,000	58,000 U

b) The company's performance did not stack up well against the flexible budget. Sales revenue per unit was less than budgeted, and all costs were higher than budgeted except fixed selling and administrative cost.

Solutions to True / False Problems

1. False - A static budget is based on one level of activity.
2. True
3. True
4. False - A static budget is suitable for planning but is inappropriate for evaluating how well costs are controlled. If the actual level of activity differs from what was planned, it would be misleading to compare actual costs to the static budget.
5. True
6. False - The static budget is prepared at the beginning of the period.
7. True
8. True
9. False – variable overhead rate is $\$90,000 / 1,500 \text{ dlh} = \6.00
 $25,000 \text{ dlh} \times \$6.00 = \$150,000$ variable overhead
 $\$150,000$ variable overhead + $\$120,000$ fixed overhead =
 $\$270,000$ total overhead
10. True
11. True

Solutions to Multiple Choice Questions

1. C
2. C
3. C
4. D
5. B
6. C
7. C
8. B
9. C
10. D
11. C
12. B