UNIT II. FLEXIBLE BUDGETS

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2.0. INTRODUCTION

We have learned in Chapter I that managers quantify their plans in the form of budget and formal budgeting procedures result in comprehensive operational and financial budgets for future periods. These budgets guide managers and employees as they make their daily decisions and as they try to anticipate future problems and opportunities. In this chapter we focuses on how managers use flexible budgets as aids for planning and controlling. Recall that a key element of control system is feedback –the comparison of actual performance with planned performance. This chapter also provides an overview of how budgeting helps performance evaluation.

This chapter will have three basic sections: master budget Vs flexible budget, flexible budget preparation and use of flexible budget for variance analysis.

2.1. LEARNING OBJECTIVES

Upon a successful completion of this chapter, you should be able to:

- Distinguish between flexible budgets and master (static) budget
- Understand the performance evaluation relationship between master (static) budgets and flexible budgets
- Prepare flexible budgets for planning and controlling purpose
- Use the flexible budget approach to compute sales volume variances and flexible budget variances.

2.2 MASTER BUDGET (STATIC BUDGETS) VS FLEXIBLE BUDGET

2.2.1. A static budget

All master budgets discussed in the previous chapter are **static or inflexible** because they assume fixed level of activity. By definition a static budget is not adjusted or altered after it is drawn up, ***regardless of changes in volume, cost drivers, or other conditions during the budget period***. In other words a static budget prepared for only one activity level (for example one volume of sales activity). Because static budgets depend on a particular level of activity, they are not sufficiently informative when it comes to preparing performance report.

To illustrate suppose Evergreen Company prepares a budget based on detailed expectation for the forthcoming month. Evergreen Company's planned to produce and sale 9,000 units. However, actual production and sales volume units turned out to be only 7, 000 units instead of the original 9,000 units. A performance report comparing the actual production costs and sales amount with the planned is given in Exhibit 2-1.

Exhibit 2-1: Evergreen Company Performance Report

Particulars	**Actual**	**Master Budget**	**Master (static) Budget Variances**
Units	7,000 units	9,000 units	2,000 units U
Sales	Br. 217,000	Br. 279,000	Br. 62,000 U
Variable Expenses			
* Manufacturing	Br. 151,270	Br. 189,000	Br. 37,730 F
* Selling	5,000	5,400	400 F
* Administrative	2,000	1,800	200 U
Total Variable	Br.	Br.	Br. 37,930 F

Expense	158,270	196,200	
Contribution Margin	Br. 58,730	Br. 82,800	Br. 24,070 U
Fixed Expenses			
* Manufacturing	Br. 37,300	Br. 37,000	300 U
*Selling&Administrative	33,000	33,000	---
Total Fixed Expenses	Br. 70,300	Br. 70,000	300 U
OperatingIncome (Loss)	**Br. (11,570)**	**Br. 12,800**	**Br. 24,370 U**

N.B. Master budget variance (static budget variance) is the variance of actual result from the master budget.

It is customary to label variances favorable (F) or unfavorable (U). The label indicates whether the target or the actual figure is larger. The way in which labels are applied depends on the item for which a variance is computed. If the item for which the variance is computed is a revenue or profit item, favorable variances are those for which actual is greater than the target; unfavorable variances are those for which actual is less than the target (or the budget). If the item for which the variance is computed is a cost or expense item, favorable variances are those for which actual is less than the target. Therefore, if actual cost is greater than target cost, the variance will be labeled unfavorable.

Now according to the report, unfavorable variance occurred for the operating income. However, there is something fundamentally wrong with the report. Actual unit level of 7000 units results are compared with a planned result for 9000units. Under normal circumstances we would expect lesser income at lower activity level.

To create a meaningful performance report, actual revenues and costs and expected revenues and costs must be compared at the same level of activity. Since actual activity level often differs from planned activity level, some method is needed to compare what the planned revenues and costs should have been for the actual activity level. That is a flexible budget.

Flexible budgets, which are budgets designed to direct management to areas of actual financial performance that desire attention. Managers can apply this same basic process to control important areas of performance such as quality or customer service.

2.2.2 Flexible Budget (Dynamic Budget)

Actual activity may differ significantly from budgeted activity because of an unexpected labor strike, cancellation of an order, an unexpected large new production contract, and other factors. In contrast to the performance report based only on comparing the master budget to the actual results, a more useful benchmark for analysis is the flexible budget. A flexible budget

(sometimes called a variable budget) is budget that can easily be adjusted for differences in the level of activity. It provides managers more useful information for planning and better basis for comparing performance than, a static or fixed budget.

In performance evaluation, a master budget is kept fixed or static to serve as a benchmark for evaluating performance. It shows revenues and costs at only the originally planned levels of activity. However, a flexible budget will be prepared at the actual activity level. The flexible budget is identical to the master budget in format, but managers may prepare it for any level of activity.

2.2.3. Distinguishing Features of Flexible Budget

Flexible budgets have several desirable characteristics. They include:

i. Cover a range of activity
ii. Are dynamic
iii. Facilitate performance measurement.

Flexible Budget Cover a Range of Activity. Accurate predictions of activity levels are sometimes hard to make, and many managers find they make more effective decisions with the aid of flexible budgets. In other words flexible budgets can help managers deal with uncertainty by allowing them to see the expected outcomes for range of activity. It can be used to generate financial results for a number of plausible scenarios.

Flexible Budget Are Dynamic. Flexible budgets allow managers to adjust plans easily when activity level differs from

the expected level. Such budgets address “what is” rather than “what was” or “what was expected”. This dynamic nature of flexible budget makes them a very useful decision making tool for management.

Flexible Budget Facilitate Performance Measurement. Measuring efficiency is an important role of performance report. Fixed budgets are useful for measuring effectiveness, i.e., achievement of goal. In some cases, however, fixed budgets do not identify the question, “what should the result be, given the actual level of activity”. In other words, the flexible-budget approach says, “Give me any activity level you choose, and I’ll provide a budget tailored to that particular level.” Whenever actual and budgeted activity is significantly different, a flexible budget variance report provides a better measure of efficiency than a report based on a fixed budget.

To summarize, flexible budget can be useful either before or after the period in question. It can help managers choose a level of operations (expected level of activity) and prepare the budget. It can also be helpful at the end of the period when managers are trying to analyze actual results.

Learning Activity-1

1. What is a static budget?

.....

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2. What is a flexible budget? Identify its major features?

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2.3. FLEXIBLE BUDGETING PROCESS

The following steps are needed to develop a flexible budget.

i. Determine the range of activity the budget should cover (because cost behavior patterns may be different in different ranges of activity)
ii. Determine the cost and revenue behavior pattern for each cost included in the budget.
iii. Select the activity levels for which budgets will be prepared.
iv. Prepared a flexible budget using the cost behavior data and the selected activity level.

Let's prepare a flexible budget for the Evergreen Company, which is planning to use a flexible budgeting system to plan and control its operations. Evergreen made the following cost and revenue estimates for budgeting purposes:

Budget Formula Per Unit	
Sales	Br. 31.00
Variable Costs	
* Manufacturing	Br. 21.00
* Selling	0.60
* Administrative	0.20
Total Variable Costs	Br. 21.80
Contribution Margin	Br. 9.20
Budget Formula Per Month	
Fixed Costs	
* Manufacturing	Br. 37,000
* Selling and administrative	33,000
Total fixed costs	Br. 70,000

Instruction: Prepared a flexible budget for the next month using 7,000, 8,000, and 9,000 units as activity level. Evergreen Company's cost functions or flexible budget formulas are believed to be valid within the range of 7,000 to 9,000 units. At what level of activity does the company breakeven?

Exhibit 2.2 Evergreen Company Flexible Budget

	Flexible Budgets For Various Activity Levels		
	7,000 units	**8,000 units**	**9,000 units**
Sales	Br. 217,000	Br. 248,000	Br. 279,000
Variable Costs			

* Manufacturing	Br. 147,000	Br. 168,000	Br. 189,000
* Selling	4,200	4,800	5,400
* Administrative	1,400	1,600	1,800
Total Variable Costs	Br. 152,600	Br. 174,400	Br. 196,200
Contribution margin	Br. 64,400	Br. 73,600	Br. 82,800
Fixed costs			
* Manufacturing	Br. 37,000	Br. 37,000	Br. 37,000
*Selling and administrative	33,000	33,000	33,000
Total fixed costs	Br. 70,000	Br. 70,000	Br. 70,000
Operating income (loss)	**Br. (5,600)**	**Br. 3,600**	**B. 12,800**

2.4. VARIANCE ANALYSIS-FLEXIBLE BUDGET APPROACH

Comparing the flexible budget to actual results accomplishes an important performance evaluation purpose. There are basically two reasons why actual results might not have confirmed to the master budget:

i. Sales and other cost-driver activities were not the same as originally forecasted.
ii. Revenues or variable costs per unit and fixed costs per period were not as expected.

Flexible Budget Variances: - the difference or variances between the flexible budget and actual results for actual activity level achieved. This variance cannot be due to activity levels and must be due to departure of actual costs or revenues from flexible-budget formula amounts.

Activity level variances: - (also known as Sales Volume Variance) is the difference or variances between the master budget amount and the flexible budget amounts. This difference is due to activity (sales) levels. Unit selling prices, unit variable costs and fifed costs are held constant between the master budget and the flexible budget for actual activity level.

The sum of the activity level variances and the flexible budget variances equal the **total of the master budget variances.**

To illustrate, refer the data given in for Evergreen Company. Exhibit 2.3 shows a condensed result of the static (master) budget variance, the sales activity variance, and the flexible-budget variance.

Exhibit 2.3 Evergreen Company Summary of Performance

	Actual Results	**Flexible Budget**	**Master Budget**	**Flexible Budget**	**Sales Activity**

				Variance	**Variances**
Units	7,000	7,000	9,000	-	2,000 U
Sales	Br. 217,000	Br. 217,000	Br. 279000	-	Br. 62,000 U
Variable costs	158,270	152,600	196,200	Br.5, 670 U	43,600 F
Contribution margin	Br. 58,730	Br. 64,400	Br. 82,800	Br. 5,670 U	Br. 18,400 U
Fixed Costs	70,300	70,000	70,000	300 U	-
Operating Income (loss)	**Br. (11,570)**	**Br. (5,600)**	**Br. 12,800**	**Br.5, 970 U**	**Br.18, 400 U**

***U** or **F** indicates whether the variances are unfavorable or favorable, respectively.

Total master budget variance (TMBV) = ALF + FBV

Where TMBV = Total Master Budget Variance

ALF = Activity Level Variance

FBV = Flexible Budget Variance

Thus, the total master budget variance for Evergreen Co. amounts to Br. 24,370 unfavorable (Br. 5970 U + Br. 18400 U). The sum of the activity-level variances here equals sales-activity variances because sales are the only activity used as a cost driver.

Managers use comparisons between actual results, master budgets, and flexible budgets to evaluate organizational

performance. When evaluating performance, it is useful to distinguish between effectiveness-the degrees to which a goal, objective, or target is met- and efficiency-the degree to which inputs are used in relation to a given level of outputs.

Performance may be effective, efficient, both, or neither. For example, Evergreen Co. set a master budget objective of manufacturing and selling 9,000 units. Only 7,000 units were actually made and sold, however. Performance, as measured by sales-activity variances, was ineffective because the sales objective was not met.

Was Evergreen's performance efficient? Managers judge the degree of efficiency by comparing actual outputs achieved (7,000 units) with actual inputs (such as the quantity of direct materials and direct labor). The less input used to produce a given output, the more efficient the operation. Evergreen was inefficient in its use of a number of inputs. In the next Chapter, direct material, direct labor and variable and fixed overhead flexible-budget variances will be discussed in detail.

Flexible-budget variances measure the efficiency of operations at the actual level of activity. The flexible-budget variances shown in column (4) of Exhibit 2.3 total Br. 5,970 unfavorable. The total flexible-budget variance arises from sales prices received and the variable and fixed costs incurred. Evergreen Co. had no difference between actual sales price and the flexible-budgeted sales price, so the focus is on the differences

between actual costs and flexible-budgeted costs at actual 7,000-unit level of activity.

Sales-activity variances measure how effective managers have been in meeting the planned sales objective. In Evergreen Co., sales activity fell 2,000 units short of the planned level. The sales-activity variances (totaling Br. 18,400 U) are unaffected by any changes in unit prices or variable costs. Why? Because the same budgeted unit prices and variable costs are used in constructing both the flexible and master budgets. Therefore, all unit prices and variable costs are held constant in columns (2) and (3) of Exhibit 2.3.

Note that, in addition to the above, all variances are affected by the care used in formulating credible budgeting or standard amounts.

In the next chapter will show how analysis uses standards to subdivide these variances (flexible budget variance) into price and efficiency components.

Learning Activity-2

1. List out the steps for preparing flexible budget.
2. The following data pertains to X-company budget for April:

   Selling price per unit……Br. 180

   Variable Costs per unit:

   Direct Materials…… 60

   Direct Labor …… 16

   Factory overhead …… 12

   Marketing and administrative …… 11

   Fixed costs:

   Manufacturing …… 276,000

   Marketing and administrative …… 434,000

Required:

a. Prepare a flexible budget for April, showing expected results at each of three levels of volume: 10000 units, 12000 units and 14000 units.
b. Prepare a variance analysis table (as Exhibit 2.3) assuming the company originally planned and has actual sales volume of 10000 units and actual result as follows:

   Sales …… Br. 1850000

   Variable costs …… 1120000

   Fixed costs …… 705,000

2.4 SUMMARY

The budget that provides a firm with a capability to compute expected revenues and costs for range of activity is called a flexible budget. Flexible budgeting has three major uses:

- It can be used to prepare the budget before the fact for the expected level of activity
- Because flexible budgeting can determine what revenues and costs should be at various levels of activity, the budget can be used after the fact to compute what costs should have been for the actual level of activity. Once expected costs are known for the actual level of activity, a performance report that compares those expected revenues and costs to actual revenues and costs can be prepared
- It can help the managers deal with uncertainty by allowing them to see the expected outcomes for a range of activity.

Flexible budgeting is the key to providing the frequent feedback that managers need to exercise control and effectively carry out the plans of an organization.

Variance analysis using flexible budget enables the managers to separate the effects of sales volume from other explanations of why the static (master) budget was not achieved. We have identified flexible budget variance and activity level variance. The activity level variance measures the organizations effectiveness and the flexible budget variance is often a measure of efficiency though it is also affected by changes in prices and unit costs.

Check your progress question

1. Define flexible budget and how it differs from a static budget. What is the deficiency of a static budget on performance analysis?
2. Zenit Plc. developed a new perfume called “virgin”. At the beginning of the year, Zenit budgeted the following manufacturing costs based on production of 100000 bottles of Virgin:

Direct materials …….	Br. 400,000
Direct lab our…….	230,000
Variable overhead …….	310,000
Fixed overhead…….	440,000
Total manufacturing costs	Br. 1,380,000

Demand for Virgin was disappointing and by the end of the year production had been 75000 bottles. Actual costs were as follows:

Direct materials …….	Br. 315,000
Direct lab our…….	176,250
Variable overhead …….	255,000
Fixed overhead…….	400,000
Total manufacturing costs	Br. 1,146,250

Required:

a. Prepare a performance report comparing actual costs with the flexible budget amounts for actual production of 75000 bottles. Include column for variances.

b. Prepare a flexible budget for production for the following levels of activity: 50000, 100000 and 150000 bottles of Virgin.

3. Budgeted overhead costs for two different levels of activity follow:

	Direct labour hours	
	1000	2000
Maintenance	Br. 10000	Br. 16000
Depreciation	5000	5000
Supervision	15000	15000
Supplies	1400	2,800
Power	750	1500
Others	8,100	8,200

Required: Prepare a flexible budget for an activity level of 1,650 direct labour hours.

4. ZM transportation company executives have had trouble interpreting performance for a number of years. The company has used a budget based on detailed expectations for the forthcoming quarter. For example, the condensed performance report for the recent quarter for a western branch was:

	Budget	**Actual**	**Variance**

Revenue	Br. 10,000,000	Br. 9,500,000	Br. 500,000 U
Fuel	1,000,000	986,000	14,000 F
Repairs& maintenance	100,000	98,000	2,000 F
Supplies	200,000	196,000	4,000 F
Variable payroll	5,700,000	5,500,000	200,000 F
Total variable costs	7,000,000	6,780,000	220,000 F
Supervision	200,000	200,000	---
Rent	200,000	200,000	---
Depreciation	1,600,000	1,600,000	---
Other fixed costs	200,000	200,000	---
Total fixed costs	2,200,000	2,200,000	---
Total costs	9,200,000	8,980,000	220,000 F
Operating income	Br. 800,000	Br,520,000	Br.280,000 U

Although the branch manager was upset about the unfavorable revenue variance, he was happy that his cost performance was favorable; otherwise his operating income would be even worse.

His immediate supervisor, the vice president for operations, was totally unhappy and remarked: "I can see some merit in comparing actual performance with budgeted performance with budgeted performance, because we can see whether actual revenue coincided with our best guess for budget purposes. But I can't see how this performance report helps me evaluate the cost control performance of the department head."

Required:

a. Prepare flexible budget for ZM at revenue levels of Br. 9,000,000, Br. 10,000,000 and Br. 11,000,000.
b. Express the flexible budget for costs in formula form.
c. Prepare a condensed contribution –format income statement showing the static (master) budget variance, the sales volume variance, and the flexible-budget variance. Use the format used in the chapter.

2.5. ANSWER KEY TO LEARNING ACTIVITY QUESTIONS AND CHECK YOUR PROGRESS QUESTIONS

Learning Activity –1

1. A static budget is a budget that does not adjusted or altered after it is drawn up, regardless of changes in volume, cost drivers, or other conditions during the budget period.

2. A flexible budget (sometimes called a variable budget) is budget that can easily be adjusted for differences in the level of activity.

Flexible budgets have several desirable features. They include:

a. Cover a range of activity
b. Are dynamic
c. Facilitate performance measurement.

Learning activity –2:

1. 1. Determine the range of activity the budget should cover (because cost behavior patterns may be different in different ranges of activity)
   2. Determine the cost and revenue behavior pattern for each cost included in the budget.
   3. Select the activity levels for which budgets will be prepared.
   4. Prepared a flexible budget using the cost behavior data and the selected activity level.

2. a.

	Budget Per unit	**Flexible Budgets For Various Activity Levels**		
		10,000 units	**12,000 units**	**14,000 units**
Sales	180	Br. 1,800,000	Br. 2,160,000	Br. 2,520,000
Variable Costs				
Direct material	60	Br. 600,000	Br. 720,000	Br. 840,000

Direct labour	16	160,000	192,000	224,000
Factory overhead	12	120,000	144,000	168,000
Marketing & Administrative	11	110,000	132,000	154,000
Total Variable Costs	99	Br. 990,000	Br. 1,188,000	Br. 1,386,000
Contribution margin	81	Br. 810,000	Br. 972,000	Br. 1,134,000
Fixed costs				
* Manufacturing		Br. 276,000	Br. 276,000	Br. 276,000
*Selling and administrative		434,000	434,000	434,000
Total fixed costs		Br. 710,000	Br. 710,000	Br. 710,000
Operating income (loss)		**Br. 100,000**	**Br. 262,000**	**Br. 424,000**

b.

	Actual Results	**Flexible Budget**	**Master Budget**	**Flexible Budget**	**Sales Activity**

				Variance	**Variances**
Units	10,000	10,000	12,000	-	2,000 U
Sales	Br. 1850000	Br. 1800000	Br.2160000	50000F	Br. 360000 U
Variable costs	1120000	990000	1188000	Br.130000U	198000 F
Contribution margin	Br. 730000	Br. 810000	Br. 972000	Br. 80000U	Br. 162000U
Fixed Costs	705000	710,000	710,000	5000F	-
Operating Income (loss)	**Br.25000**	**Br. 100000**	**Br. 262000**	**Br.75000U**	**Br.162000U**