**UNIT THREE**

**FLEXIBLE BUDGET AND VARIANCE ANALYSIS**

**3.1. Introduction**

in the previous unit you have studied the benefit of budget as a planning tool. Hence, budgets are planning tools that are usually prepared prior to the start of the period being budgeted. However, the comparison of the budget to actual results provides valuable information about performance. Therefore, budgets are both planning tools and performance evaluation tools. In this unit, therefore the discussion focuses on how budget are used to evaluate feedback and variances aid managers in their control function.

In evaluating performance the budgeted performance are compared with actual operational results and the resulting variance will be examined so as to identify the causes for variance on the bases of which performance can be rewarded for favorable variance or corrective actions will be taken to avoid unfavorable variance on the coming operational periods.

The unit highlights the importance of variance analysis and show how the budget initially prepared at planning stage creates problem while comparing actual results with the budget. In this unit you are also introduced with the advantage of flexible budget over the static budget, steps in the preparation of flexible budget and evaluating performance using flexible budget.

* 1. **Budget and Variance analyses**

The use of budget as performance evaluation tool focuses on determining the discrepancies between the planned and actual performance at the end of the operating cycle.

Variance is the difference between an amount on an actual result and the corresponding budgeted amount i.e., the actual amount of something and the amount it was supposed to be according to the budget. The budgeted amount is a point of reference from which comparison may be made. The difference between budget and actual result can be favorable or unfavorable based upon the impact of the discrepancy on the overall profitability of the firm. If the variance has an increasing effect on the operating income as compared to the budgeted amount, it is said to be **favorable variance**. On the other hand **unfavorable or adverse variance** occurs when the variance has a decreasing effect on the operating income relative to the budgeted amount.

Variances assist managers in their planning and control decisions. It enables to exercise Management by Exception (MBE), which is the practice of concentrating attention on areas not operating as expected and giving less attention to areas operating as expected. Managers regularly pay attention to areas with large variances. Variances are also used in performance evaluation. For example Production line managers in a manufacturing company may have quarterly efficiency incentives linked to achieving a budgeted amount of operating costs.

* + 1. **Fixed or Static Budget**

The **static budget** is the budget that is based on the projected level of output, prior to the start of the period. In other words, the static budget is the **“original”** budget. **The static budget variance** is the difference between any line-item in this original budget and the corresponding line-item from the statement of actual results. Often, the line-item of most interest is the “bottom line”: total cost of production for the factory and other cost centers; net income for profit centers.

* ***Static budget is a budget that is based on one level of activity.***

Evaluating performance based upon the master budget which fixed and prepared at single level of activity may not provide accurate picture of performance. This because usually the planned and actual output or activities levels may not be equal, as a result the comparison is performed at two different level of activity which hides the variance attribute to the actual performance units as well as overall organization. For example, if a company budgeted to produce and sell 12,000 units, but the actual performance showed only 10,000 units, the comparison of revenue, cost and profit at the budget and actual level of output do reveals only the variance resulted from the difference in the **level of output.** Therefore, unless the analysis is re done by adjusting the budgeted level of output towards the actual units produced and sold, the variance is not helpful to the management as performance evaluation tool.

* ***Static Budget Variance [SBV] is the difference between an actual result and the corresponding budgeted amount in a static budget.***
	+ 1. **Flexible Budget**

The flexible budget is a performance evaluation tool. It cannot be prepared **before the end** of the period. A flexible budget adjusts the static budget for the actual level of output so as to avoid the inherent limitation of using static budget for performance evaluation. The flexible budget asks the question: “If I had known at the beginning of the period what my output volume (units produced or units sold) would be, what would my budget have looked like?” The motivation for the flexible budget is to compare **apples to apples.** If the factory actually produced 10,000 units, then management should compare actual factory costs for 10,000 units to what the factory should have spent to make 10,000 units, not to what the factory should have spent to make 9,000 units or 12,000 units or any other production level.

The **flexible budget variance** is the difference between any line-item in the flexible budget and the corresponding line-item from the statement of actual results.

* ***Note: Static budget variance does not give much information about the variances between actual results and budgeted amounts for each line item. Hence one has to prepare flexible budget***.

To have a better understanding of causes for variance managers usually require variance calculated at different level. Variance according to the degree of detailed feedback on performance can be classified as:

* Level 0 variance analysis
* Level 1 variance analysis
* Level 2 variance analysis
* Level 3 variance analysis
* Level 4 variance analysis

In this unit the focus is on level 0, 1, and 2 variances, and the remaining will be discussed in length on the next unit.

Now let see the preparation of flexible budget as well as analysis of variance using the following:

Illustration 3.1: **Jimma Garment Co**. manufactures and sells a jacket. Sales are made to distributors who sell to independent clothing stores. Jimma Garment’s only costs are manufacturing costs. All units manufactured in April 2003 are sold in April 2003. There is no beginning or ending inventory. Jimma Garment has variable cost categories. The budgeted data for April 2003 are:

 **Cost category Variable cost** / **jacket.**

 DM costs………………………………… Br. 60

 DL costs…………………………………. 16

 Variable MOH costs…………………… 12

 Total variable costs ……………… **Br. 88**

The number of units manufactured is the cost driver for all variable-manufacturing costs. The relevant range for the cost driver is from 0 to 12,000 jackets. Budgeted manufacturing fixed costs are Br. 276,000 for production between 0 & 12,000 jackets. Budgeted selling price is Br.120/jacket. The static budget for April 2003 is based on selling 12,000 jackets.

The actual data for April 2003 are as follows:

 Units sold ………………… 10,000 jackets

 Revenues …………………. Br. 1,250,000

 Variable costs:

 DM …………………….. 621,600

 DL……………………… 198,000

 Variable MOH……….. 130,500

 Fixed costs …………….. 285,000

**1. Level 0 or Static Budget Variance for operating income**

Level zero variance analysis is **the least detail** analysis which simply compares the operating income at static budget income statement with the operating income at the actual income statement. The level zero variance for Jimma Garment from the above given data is determined as,

 Actual operating income………………… Br. 14,900

 Budgeted operating income……………… 108,000

 SBV for operating income………………. **Br. 93,100 U**

The analysis revealed unfavorable variance as the actual operating income is lower than the budgeted operating income by Birr 93,100. The result here couldn’t provide the management useful information as it couldn’t show the contribution revenue and each cost element to operating income variance.

**2. Static Budget Variance (SBV)**

Level one variance can offer management a better insight about their organizational performance than level zero analysis. At this level, operating income variance will be decomposed into revenue and cost component as a result the management will identify the responsibility center that demands attention.

 **Static Budget Variance**

|  |  |  |  |
| --- | --- | --- | --- |
|  **Items**  | **Actual Results (1)** | **Static Budget Variance(SBV) (2) = (1) – (3)** | **Static Budget Result (3)**  |
| Unit sales  | 10,000  | 2,000U  | 12,000 . |
| Revenues  | Br.1,250,000  | Br. 190,000U  | Br. 11,440,000  |
| **Variable costs:** |
| DM  | 621,600  | 98,400F  | 720,000  |
| DL  | 198,000  | 6,000U  | 192,000 |
| MOH | 130,500  | 13,500F  | 144,000 |
| Total variable costs  | 950,100  | 105,900F  |  1,056,000 |
| Contribution Margin  | 299,900  | 84,100U  | 384,000 |
| Fixed Costs  | 285,000  | 9,000U  | 276,000 |
| Operating Income  | Br. 14,900  | Br. 93,100U   | Br. 108,000 |

 **Br. 93,100U\_\_\_\_\_\_\_\_\_\_**

 **SBV**

The static budget variance shows an **unfavorable** variance for revenue, fixed costs whereas **favorable variance** of total variable cost. These variances are due primarily to the fact that the static budget was built on an output level of 12,000 units, while the company actually made and sold 10,000 units. The revenue variance might also be due to an average unit sales price that differed from budget. The variable cost variances might also be due to input prices that differed from budget (e.g., the price of fabric), or input quantities that differed from the per-unit budgeted amounts (e.g., yards of fabric per jackets) that may be identified at the later stages of the variance analysis.

**Level 2-variance analysis [Flexible Budget Variance (FBV) & Sales-Volume Variance (SVV)]**

To identify the amount of variance attributed the difference in the level of output as well as to real performance of the company, at this level the static budget variance will be decomposed into the flexible budget variance and sales volume variance.

**Flexible Budget Variance (FBV)** is a better measure of operating performance because they compare actual revenues to budgeted revenues and actual costs to budgeted costs for the same output level.

**Sales-Volume Variance (SVV)** is the difference between the flexible budget amounts and static budget amounts. It represents the variance caused solely by the difference in the actual output volume and budgeted quantity of output expected to be produced and sold in the static budget.

To determine the flexible budget variance and sales volume variance, first you need to develop a flexible budget. The flexible budget, for the example given above is prepared at the end of the period after the actual output level of 10,000 jackets is known. The flexible budget is that Jimma Garment would have prepared at the start of the budget period had it correctly forecasted the actual level of 10,000 jackets.

In preparing the flexible budget,

1. The budgeted selling price is the same Br. 120/ jacket.
2. The budgeted variable costs per unit are the same Br. 88/ jacket.
3. The budgeted fixed costs are the same Br. 276, 000, are used.

The only difference between the static budget and the flexible budget is that the static budget is prepared for the planned output level of 12,000 jackets, whereas the flexible budget is based on the actual output of 10,000jackets.

The following stapes are used to prepare a flexible budget:

**Step 1**. Identify the Actual Quantity of Output produced and sold.

 10,000jackets.

**Step 2**. Calculate the flexible budget for revenues based on Budgeted Selling Price and

 Actual Quantity of Output.

 Flexible B for Revenues = Br. 120 /jacket X 10,000jacket

 **= Br. 1,200,000**

**Step 3**. Calculate the Flexible Budget for Costs based on Budgeted Variable Costs per

 Unit, Actual Quantity of Output and Fixed Costs.

**Flexible Budget for Variable Costs:**

 DM: Br. 60/j X 10,000j Br. 600,000

 DL: Br. 16/j X 10,000j 160,000

 MOH: Br. 12/j X 10,000j 120,000

 FB for TVC Br. 880,000

FB for FC 276,000

FB for Costs **Br. 1,156,000**

**Step 4:** Building the flexible budget based on the information from steps 1 and 2, and step 3 results a flexible budget presented on column 3 of the following table.

After the flexible budget is developed it is possible to determine the flexible budget variance by comparing the flexible budget and the actual operational results, and sales volume variance by comparing the flexible budget results and the static budget as shown on the following table.

 **Actual Flexible Flexible Sales Static**

 **Results Budget Budget Volume Budget**

 **Variance Variance**

 **(1) (2) = (1) – (3) (3) (4) (5)** .

Unit sales 10,000 0 10,000 2,000 12,000

Revenues 1,250,000 50,000F 1,200,000 240,000U 1,440,000

Variable costs:

 DM 621,600 21,600U 600,000 120,000F 720,000

 DL 198,000 38,000U 160,000 32,000F 192,000

 MOH 130,500 10,500U 120,000 24,000F 144,000

 Total variable costs 950,100 70,100U 880,000 176,000F 1,056,000

Contribution Margin 299,900 20,100U 320,000 64,000U 384,000

Fixed Costs 285,000 9,000U 276,000 0 276,000

Operating Income **Br. 14,900 Br. 29,100U Br. 44,000 Br. 64,000U Br. 108,000**

  **Br. 29,100U.**   **Br. 64,000U\_\_\_\_\_\_\_\_**

 **FBV SVV**

 **Br. 93,100U** .

 **SBV**

From this table, **Jimma Garment** sees that after adjusting for sales volume, revenue was higher than would have been expected. The favorable Birr 50,000 variance must be due entirely to an average sales price that was higher than planned which was Bir125 per jacket compared to the original budget of Birr120 per jacket.

Materials costs were higher than would have been expected for a sales volume of 2,000 units. This unfavorable variance is due to higher material prices, or to inefficient utilization of fabric (more waste than expected), or a combination of these two factors. Labor and overhead were higher than expected, even after adjusting for the sales volume of 2,000 units. This unfavorable flexible budget variance implies that either wage rates were higher than planned, or labor was not as efficient as planned, or both. Similarly, the components of variable overhead were either more expensive than budgeted, or were used more intensively than budgeted. For example, electric rates might have been higher than planned, or more electricity was used than planned per unit of output.  The fixed cost variances are identical in this table to the previous table. In other words, the flexible budget and flexible budget variance provide no additional information about fixed costs beyond what can be learned from the static budget variance