Chapter 9

Lecture Notes

Chapter theme: This chapter explains how to prepare flexible budgets and how to compare them to actual results for the purposes of computing revenue and spending variances.

1

1. The **variance analysis cycle**
   1. The steps of the cycle
      1. The cycle begins with the **preparation of performance reports** in the accounting department.
      2. These reports **highlight variances** which are differences between actual results and what should have occurred according to the budget.
      3. The variances **raise questions** such as:

2

1. Why did this variance occur?

2. Why is this variance larger than it was last period?

* + 1. The significant variances are investigated to **discover their root causes**.
    2. **Corrective actions are** **taken**.
    3. Next period’s operations are carried out and the process is repeated.

1. **Flexible budgets**

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222

*Learning Objective 1: Prepare a flexible budget.*

* 1. **Characteristics of a flexible budget**
     1. A **planning** **budget** is prepared before the period begins and is valid for only the planned level of activity.

4

* + - 1. If the actual level of activity **differs** from what was planned, it would be **misleading** to evaluate performance by comparing actual costs to the static, unchanged planning budget.
    1. **A flexible budget** is an estimate of what revenues and costs **should have been**, given the actual level of activity for the period. Flexible budgets:
       1. May be prepared for any activity level in the relevant range.

5

* + - 1. Enable “apples to apples” cost comparisons.
      2. Help managers control costs.
      3. Help evaluate managerial performance.

#### Larry’s Lawn Service: Illustrating the deficiencies of the static planning budget

6

* + 1. Assume the following facts with respect to Larry’s Lawn Service. Notice that Larry expects to mow **500 lawns** during June.
    2. Assume that Larry prepared the **planning budget** for June as shown. Notice that the budget includes:
       1. **Two variable costs**—gasoline and supplies and equipment maintenance.

7

* + - 1. **Four fixed costs**—office and shop utilities, office and shop rent, equipment depreciation, and insurance.
      2. **One mixed cost**—wages and salaries.
    1. Assume that Larry’s **actual results** for the month of June are as shown. Notice:

8

* + - 1. Larry actually mowed 550 lawns.
    1. If Larry wanted to, he could compare his actual results to the planning budget as shown on the slide. Notice:
       1. A **variance** is computed for revenue and each expense item.

9

* + - 1. The actual results column and planning budget column have apple and orange icons to emphasize that the amounts in both columns are based on different levels of activity (**500 vs. 550 lawns**).
      2. A favorable (unfavorable) revenue variance occurs when actual revenue is greater than (less than) the planning budget.

10

* + - 1. A favorable (unfavorable) expense variance occurs when actual expenses are less than (greater than) the planning budget.
      2. The important question for us to consider is: —**do these expense variances indicate whether Larry has done a good job controlling his costs?**

11

* + - 1. 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.

12

* + - 1. To intelligently evaluate Larry’s performance, we need to determine how much of the cost variances are due to higher activity levels and how much are due to Larry’s ability to control costs. In other words, **we need to flex the planning budget to accommodate the actual level of activity**.

13

#### How a flexible budget works

* + 1. **Keys to understanding a flexible budget**

14

* + - 1. Variable costs change in direct proportion to changes in activity.
      2. Total fixed costs remain unchanged within the relevant range.
    1. Larry’s Lawn Service: **preparing a flexible budget**

15

* + - 1. Larry’s flexible budget for an activity level of 550 lawns mowed is as shown on this slide. **Notice, the “Q” in all revenue and cost formulas is 550 lawns mowed**. So, for example:
         1. Revenue of **$41,250** is computed by multiplying **$75 × 550**.

16

* + - * 1. Wages and salaries expense of **$21,500** is computed by multiplying **$30 × 550 plus $5,000 in fixed salaries.**
      1. The fixed costs in Larry’s flexible budget are not sensitive to changes in the activity level.

*Quick check – preparing a flexible budget*

17-18

1. **Flexible budget variances**

*Learning Objective 2: Prepare a report showing activity variances.*

19

#### Key terminology

* + 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.

20

#### Larry’s Lawn Service: Computing activity variances

21

* + 1. The activity variances for Larry’s Lawn Service would be computed as shown on this slide. Notice:
       1. The level of activity in the flexible budget (550 lawns) is **10% higher** than the level of activity in the planning budget (500 lawns).
       2. The **revenue** in the flexible budget is **10% higher** than the planning budget because revenue varies proportionally to changes in the activity level.
       3. The **variable costs** in the flexible budget (gasoline and supplies and equipment maintenance) are **10%** **higher** than the planning budget because variable costs vary proportionally to changes in the activity level.

22

* + - 1. The **mixed cost** (wages and salaries) in the flexible budget is **less than 10% higher** than the planning budget because the fixed cost component of the mixed cost does not change when the activity level changes.
      2. The **fixed costs** in the flexible budget are the **same** as the planning budget because they do not change in response to changes in the activity level within the relevant range.
      3. The **net operating income** in the flexible budget is **more than 10% higher** than the planning budget due to the presence of fixed costs.

23

*Learning Objective 3: Prepare a report showing revenue and spending variances.*

24

#### Key terminology

* + 1. A **revenue variance** is the difference between the actual total revenue and what the total revenue should have been, given the actual level of activity for the period.

25

* + 1. A **spending variance** is the difference between the actual amount of a cost and how much the cost should have been, given the actual level of activity.

#### Larry’s Lawn Service: Computing revenue and spending variances

26

* + 1. The **revenue and spending variances** for Larry’s Lawn Service would be computed as shown on this slide. Notice:
       1. The apple icons on the slide indicate that the actual results and flexible budget columns are **both based on 550 lawns mowed**.

27

* + - 1. The **$1,750 favorable revenue variance** indicates that actual revenue **exceeded** the budgeted amount that would be expected for an activity level of 550 lawns mowed.
      2. The **$1,950 unfavorable spending variance** indicates that total expenses were $1,950 **greater** than would be expected for an activity level of 550 lawns mowed.

28

* + - 1. Overall, **net operating income was $200 less than would be expected** for an activity level of 550 lawns mowed.

*Learning Objective 4: Prepare a performance report that combines activity variances and revenue and spending variances.*

29

#### Larry’s Lawn Service: combining activity and revenue and spending variances

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* + 1. This slide contains the previously computed activity, revenue, and spending variances. Notice:
       1. The variances appear **between** the amounts being compared rather than after them. More specifically:

31

* + - * 1. The **activity variances** **appear** **between the flexible budget and planning budget columns**.
        2. The **revenue and spending variances appear between the actual results and flexible budget columns**.
      1. The activity variances can be computed by taking the difference between the flexible and planning budget columns or by taking the **difference in activity level between these two columns and multiplying it by the variable rates** shown in the revenue/cost formulas. For example:

32

* + - * 1. The **revenue activity variance** of **$3,750 favorable** can be computed by multiplying **50 lawns × $75 per lawn**.
        2. The **wages and salaries activity variance** of $**1,500 unfavorable** can be computed by multiplying **50 lawns × $30 per lawn**.
      1. The **revenue and spending variances** are computed by comparing the actual amounts and the flexible budget amounts. For example:
         1. The revenue variance of **$1,750 favorable** is computed by taking the difference between the actual amount (**$43,000**) and the flexible budget amount (**$41,250**).
      2. When interpreting a flexible budget performance report it is important to remember two things:

33

* + - * 1. First, to generate a favorable activity variance for net operating income, managers must **take actions to increase the level of activity**.
        2. Second, to generate an overall favorable revenue and spending variance, managers must **take actions to protect selling prices, increase operating efficiency, and reduce the prices of inputs**.

#### Performance reports: other issues

* + 1. The performance reports in non-profit organizations differ from our example in one important respect—**non-profit organizations usually receive funding from sources other than sales**. For example:

34

* + - 1. Universities receive their funding from **sales** (i.e., tuition charged to students), **endowment income, donations, and state appropriations** (in the case of public universities).
         1. This means that, like costs, a university’s revenue may consist of **both fixed and variable elements**.

34

* + 1. 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.

35

1. **Flexible budgets with multiple cost drivers**

*Learning Objective 5: Prepare a flexible budget with more than one cost driver.*

36

#### Key concepts

* + 1. More than one cost driver may be needed to adequately explain all of the costs in an organization.

37

* + 1. The cost formulas used to prepare a flexible budget can be adjusted to recognize multiple cost drivers.

#### Larry’s Lawn Service: Multiple cost drivers

38

* + 1. Let’s assume that Larry determined that wages and salaries were driven by the number of lawns mowed and the **number of hours required for additional edging and trimming**.
    2. Larry’s flexible budget could easily be adjusted to accommodate the second cost driver. Notice:

38

#### The number of hours (H) is designated as the second cost driver.

* + - 1. Larry’s flexible budget is based on **100 hours of edging and trimming**.

39

* + - 1. The **cost formula** for wages and salaries has been adjusted to include **$25 per hour** of edging and trimming.
      2. Larry also adjusted the **revenue formula** to include **$30 per hour** of edging and trimming.

1. **Some common errors**

*Learning Objective 6: Understand common errors made in preparing performance reports based on budgets and actual results.*

40

#### Key concepts

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* + 1. The **most common errors** when preparing performance reports are to implicitly assume that **all costs are fixed** or that **all costs are variable**.

#### Assuming all costs are fixed

42

* + 1. Comparing actual results to the planning budget is equivalent to assuming that all costs are fixed (or unaffected by changes in the activity level).
    2. This mode of analysis is flawed if variable costs exist. **When variable costs exist the amount of the variable cost in the planning budget needs to be flexed to accommodate the actual level of activity**.

42

* + 1. The results on this slide are identical to the “apples to oranges” comparison shown on slide 8.

#### Assuming all costs are variable

* + 1. Comparing actual results to the dollar amounts in the planning budget multiplied by the percentage increase in activity level is equivalent to assuming that all costs are variable with respect to changes in the activity level.

43

* + 1. This mode of analysis is flawed if fixed costs exist. **When fixed costs exist the amount of the fixed cost in the planning budget should not be flexed to accommodate the actual level of activity**.