Unit 18
Flexible Budgets: Analyzing Variances

ILO1. Variances
ILO2: Performance Reports
ILO3. Multiple Cost Drivers

ILO1: Variances

In brief, a variance constitutes the difference between the actual level of activity and the level prescribed in the planning budget. We will rely on a number of examples throughout this unit to explain this.

Mary's Drycleaning Service
For the Month Ended June 30

	Revenue/Cost Formulas	Flexible Budget	Planning Budget	Activity Variances	
Number of orders (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
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	-	
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

Fig 18.1 Activity Variances

For Mary's drycleaning business, we can see a number of differences, or variances and we will highlight those.

- In the flexible budget, the level of activity 550, is 10% higher than the level in the planning budget 500
- In the flexible budget, the revenue is 10% higher than in the planning budget due to the proportional changes in levels of activity
- In the flexible budget, the variable costs are 10% than in the planning budget due to the proportional changes in levels of activity
- In the flexible budget, the mixed costs are less than 10% higher than in the planning budget due to fixed costs and mixed costs not changing when levels of activity change
- In the flexible budget, the fixed costs are the same as in the planning budget as these do not alter due to changes in levels of activity
- In the flexible budget, the net operating income is greater than 10% higher than in the planning budget due to the influence of fixed costs

Other variances that managers need to be aware of are revenue variance which is difference between the actual total revenue for the period, and what the total revenue should have been. And also the spending variance, which is the difference between the actual amount of a cost during a period, and the how much the cost should have been.

Again, we'll use the information from our hypothetical drycleaning business to demonstrate.

Mary's Drycleaning Service
For the Month Ended June 30

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

Fig 18.2 Revenue and Spending Variances

We can include the following revenue and spending observations.

- Both values for the actual results, and the flexible budget are based on fulfilled orders of 550 units
- The actual revenue is greater than the budgeted revenue which produced a $1,750 favourable revenue variance on the 550 units sold
- Total expenses were $1,950 greater than the expected spending, resulting in an $1,950 unfavourable spending variance on the 550 units produced
- Net operating income was $200 less than the flexible budget indicated on the 550 orders

ILO2: Performance Reports

Now that we have opened the performance evaluations based on activity, spending and revenue, we can combine them for Mary's drycleaning operation.

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 order (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
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
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

Fig 18.3 Comparing Variances

The activity variances are found by comparing the difference between the flexible and planning budgets. For example:

- The revenue activity variance of $3,750 favourable is calculated by multiplying 50 orders by $75 per order
- The activity variance of $1,500 unfavouorable is found by multiplying 50 orders by $30 per order

The revenue and spending variances is found by comparing the differences between the actual amounts and the flexible budget amounts. For example:

- The revenue variance of $1,750 favourable is calculated by the difference between the actual amount of $43,000 and the flexible budget amount of $41,250

For a favourable activity variance for net operating income, managers must implement strategy to increase activity levels. For a favourable revenue and spending variance, managers must control consistent selling prices, boost operating efficiency, and decrease input prices.

Other issues regarding performance evaluations concern nonprofit organizations. This is important as nonprofits receive funding from not only sales but can also receive donations, endowments etc. A good example of this are universities. Universities receive sales revenue in the form of tuition charged to students, but also receive alumni donations, and even state funding if they are a public university.

Such performance reports are generally reserved for cost centres, and are prepared based on the principles we have discussed to this point.

ILO3. Multiple Cost Drivers

When dealing with organizational costs, its possible to use more than one cost driver to justify them. The cost formulas that are often used in the preparation of the flexible budget can be adjusted to recognize multiple cost drivers. We use Mary's drycleaning for this explanation.

We base staff wages and salaries on the number of orders that are fulfilled, and the number of hours necessary for additional cosmetic work. You will notice the flexible budget is adjusted to accommodate the additional cost driver.

Mary's Drycleaning Service For the Month Ended June 30	Revenue/Cost Formulas	Flexible Budget
Number of orders (Q)		550
Numer of hours (H)		100
Revenues	($75Q + $25H)	$ 43,750
Expenses:		
Wages and salaries	($5,000 + $29Q + $25H)	$ 23,450
Supplies	($8Q + $6H)	5,000
Equipment maintenance	($2Q + $2H)	1,300
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		36,250
Net operating income		$ 7,500

Fig 18.4 Adjusted Flexible Budget

We make the following observations.

- Hours (H) is categorized as the second cost driver
- The flexible budget is based on 100 hours of cosmetic work
- The cost formula for wages and salaries has been adjusted to include $25 per hour for cosmetic work
- The company adjusts the revenue formula used for calculations to include $30 per hour for cosmetic work

In preparing the performance reports, care must be taken to ensure all costs are fixed, or that all costs are variable. If all costs are fixed, we find the following.

Mary's Drycleaning Service For the Month Ended June 30	Actual Results	Planning Budget	Variances	
Number of orders (Q)	550	500		
Revenue	$ 43,000	$ 37,500	$ 5,500	F
Expenses:				
Wages and salaries	$ 23,500	$ 20,000	$ 3,500	U
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	-	
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

Fig 18.5 Fixed Costs Assumption

If we compare actual results with the planning budget, it assumes that all costs are fixed. This is because when variable costs exists, the amount of variable costs in the planning budget needs to be flexible to compensate for the actual level of activity.

If all costs are variable, then we see the changes in the results below.

Mary's Drycleaning Service
For the Month Ended June 30

	Actual Results	Planning Budget	Planning Budget	Variances	
Number of orders	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
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
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

Fig 18.6 Variable Costs Assumption

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. Like our previous model, this process is erroneous if fixed costs exist. When fixed costs are present, their amount in the planning budget should be static with the actual level of activity.

References:

1. Managerial accounting, Ray Garrison-Eric Noreen-Peter Brewer - McGraw-Hill Education, 16 ed., 2018
2. Managerial accounting, John Wild-Ken Shaw - McGraw-Hill Education, 7ed, 2019
3. Management accounting, Will Seal-Carsten Rohde-Ray Garrison-Eric Noreen - McGraw-Hill Education, 6ed. - 2019