Flexible Budgets
and Performance Analysis:

LEARNING OBJECTIVES:

After studying this Chapter, you should be able to:

1 Prepare a planning budget and aflexible budget and understand how they differ from one another.

2 Calculate and interpret activity variances.

3 Calculate and interpret revenue and spending variances.

4 Prepare a performance report that combines activity variances and revenue and spending variances.

5 Prepare a flexible budget with more than one cost driver.

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

Companies use the ***variance analysis cycle*** to evaluate and improve performance. The cycle begins with the preparation of performance reports in the accounting department. These reports highlight variances, which are the differences between the actual results and what should have occurred according to the budget. The variances raise questions. Why did this variance occur? Why is this variance larger than it was last period? The significant variances are investigated so that their root causes can be either replicated or eliminated. Then, next period's operations are carried out and the cycle begins again with the preparation of a new performance report for the latest period.

The emphasis should be on highlighting superior and unsatisfactory results, finding the root causes of these outcomes, and then replicating the sources of superior achievement and eliminating the sources of unsatisfactory performance. The variance analysis cycle should not be used to assign blame for poor performance.

The Static Planning 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, unchanged planning budget. If activity is higher than expected, variable costs should be higher than expected; and if activity is lower than expected, variable costs should be lower than expected.

Flexible Budgets: *Flexible budgets* take into account how changes in activity affect costs. A **flexible budget** is an estimate of what revenues and costs should have been, given the actual level of activity for the period. When a flexible budget is used in performance evaluation, **actual costs** are **compared to** what the costs ***should have been for the actual level of activity during the period*** rather than to the static planning budget. This is a very important distinction. If adjustments for the level of activity are not made, it is very difficult to interpret discrepancies between budgeted and actual costs.

Rick’s Hairstyling ststic Budget For the Month Ended March 31

Budgeted client-visits (q) 1,000

Revenue ($180.00q)	$ 180,000
Expenses:	
Wages and salaries ($65,000 + $37.00q)	102,000
Hairstyling supplies ($1.50q)	1,500
Client gratuities ($4.10q)	4,100
Electricity ($1,500 + $0.10q)	1,600
Rent ($28,500)	28,500
Liability insurance ($2,800)	2,800
Employee health insurance ($21,300)	21,300
Miscellaneous ($1,200 + $0.20q)	1,400
Total expense	163,200
Net operating income	$ 16,800

Rick's Hairstyling Income Statement For the Month Ended March 31,

Actual client-visits 1,100

Revenue	**$ 194,200**
Expenses: Wages and salaries	**106,900**
Hairstyling supplies	**1,620**
Client gratuities	**6,870**
Electricity	**1,550**
Rent	**28,500**
Liability insurance	**2,800**
Employee health insurance	**22,600**
Miscellaneous	**2,130**
Total expense	**172,970**
Net operating income	**$ 21,230**

Rick’s Hairstyling Comparison of Actual Results to the Planning Budget
For the Month Ended March 31

	Actual Results	Static Budget	Variances*
Client-visits	1,100	1,000	
Revenue	$ 194,200	$ 180,000	$ 14,200 F
Expenses:			
Wages and salaries	106,900	102,000	4,900 U
Hairstyling supplies	1,620	1,500	120 U
Client gratuities	6,870	4,100	2,770 U
Electricity	1,550	1,600	50 F
Rent	28,500	28,500	0
Liability insurance	2,800	2,800	0
Employee health insurance	22,600	21,300	1,300 U
Miscellaneous	2,130	1,400	730 U
Total expense	172,970	163,200	9,770 U
Net operating income	$ 21,230	$ 16,800	$ 4,430 F

***The revenue variance is labeled favorable (unfavorable) when the actual revenue is greater than (less than) the planning budget. The expense variances are labeled favorable (unfavorable) when the actual expense is less than (greater than) the Planning budget**

Rick's Hairstyling Flexible Budget For the Month Ended March 31

Actual client-visits (q)	1,100
Revenue ($180.000)q	$ 198,000
Expenses:	
Wages and salaries ($65,000 + $37.00q)	105,700
Hairstyling supplies ($1.50q)	1,650
Client gratuities ($4.10q)	4,510
Electricity ($1,500 + $0.10q)	1,610
Rent ($28,500)	28,500
Liability insurance ($2,800)	2,800
Employee health insurance ($21,300)	21,300
Miscellaneous ($1,200 + $0.20q)	1,420
Total expense	167,490
Net operating income	$ 30,510

Flexible Budget Variances: Victoria broke down the variances into two types of variances: activity variances and revenue and spending variances. We explain how she did it in the next two sections.

Activity Variances: Part of the discrepancy between the budgeted profit and the actual profit is due to the fact that the actual level of activity in March was higher than expected.

Rick's Hairstyling Flexible Budget For the Month Ended March 31

Actual client-visits (q)	**1,100**	
Revenue ($180.000)q		**$ 198,000**
Expenses:		
Wages and salaries ($65,000 + $37.00q)		**105,700**
Hairstyling supplies ($1.50q)		**1,650**
Client gratuities ($4.10q)		**4,510**
Electricity ($1,500 + $0.10q)		**1,610**
Rent ($28,500)		**28,500**
Liability insurance ($2,800)		**2,800**
Employee health insurance ($21,300)		**21,300**
Miscellaneous ($1,200 + $0.20q)		**1,420**
Total expense		**167,490**
Net operating income		**$ 30,510**

Flexible Budget Variances: Victoria broke down the variances into two types of variances—activity variances and revenue and spending variances. We explain how she did it in the next two sections.

Activity Variances: Part of the discrepancy between the budgeted profit and the actual profit is due to the fact that the actual level of activity in March was higher than expected.

Rick’s Hairstyling Activity Variances For the Month Ended March 31

	Flexible Budget	Static Budget	
Activity Variances*			
Client-visits	1,100	1,000	
Revenue ($180.00q)	$ 198,000	$ 180,000	$ 18,000 F
Expenses:			
Wages and salaries ($65,000 + $37.00q)	105,700	102,000	3,700 U
Hairstyling supplies ($1.50q)	1,650	1,500	150 U
Client gratuities ($4.10q)	4,510	4,100	410 U
Electricity ($1,500 + $0.10q)	1,610	1,600	10 U
Rent ($28,500)	28,500	28,500	0
Liability insurance ($2,800)	2,800	2,800	0
Employee health insurance ($21,300)	21,300	21,300	0
Miscellaneous ($1,200 + $0.20q)	1,420	1,400	20 U
Total expense	167,490	163,200	4,290 U
Net operating income	$ 30,510	$ 16,800	$ 13,710 F

*The revenue variance is labeled favorable (unfavorable) when the revenue inthe flexible budget is greater than (less than) the planning budget. The expense variances are labeled favorable (unfavorable) when the expense in the flexible budget is less than (greater than) the planning budget.

Revenue and Spending Variances: In the last section we answered the question “What impact did the change in activity have on our revenues, costs, and profit?” In this section we will answer the question “How well did we control our Revenues, our costs, and our profit?”

Rick's Hairstyling Revenue and Spending Variances For the Month Ended March 31

	Actual Results	Flexible Budget	Revenue &Spending V.
Client-visits	1,100	1,100	
Revenue ($180.00q)	$ 194,200	$ 198,000	$ 3,800 U
Expenses:			
Wages and salaries ($65,000 + $37.00q)	106,900	105,700	1,200 U
Hairstyling supplies ($1.50q)	1,620	1,650	30 F
Client gratuities ($4.10q)	6,870	4,510	2,360 U
Electricity ($1,500 + $0.10q)	1,550	1,610	60 F
Rent ($28,500)	28,500	28,500	0
Liability insurance ($2,800)	2,800	2,800	0
Employee health insurance ($21,300)	22,600	21,300	1,300 U
Miscellaneous ($1,200 + $0.20q)	2,130	1,420	710 U
Total expense	172,970	167,490	5,480 U
Net operating income	$ 21,230	$ 30,510	$ 9,280 U

*The revenue variance is labeled favorable (unfavorable) when the actual revenue is greater than (less than) the flexible budget. The expense variances are labeled favorable (unfavorable) when the actual expense is less than (greater than) the flexible budget.

Focusing first on revenue, the actual revenue totaled $194,200. However, the flexible budget indicates that, given the actual level of activity, revenue should have been $198,000. Consequently, revenue was $3,800 less than it should have been, given the actual number of client-visits for the month. This discrepancy is labeled as a $3,800 U (unfavorable) variance and is called a *revenue variance.* 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. If actual revenue exceeds what the revenue should have been, the variance is labeled favorable

If actual revenue is less than what the revenue should have been, the variance is labeled unfavorable. Why would actual revenue be less than or more than it should have been, given the actual level of activity? Basically, the revenue variance is favorable if the average selling price is greater than expected; it is nfavorable if the average selling price is less than expected. This could happen for a variety of reasons including a change in selling price, a different mix of products sold, a change in the amount of discounts given, poor accounting controls, and so on.

Focusing next on costs, the actual electricity cost was $1,550; however, the flexible budget indicates that electricity costs should have been $1,610 for the 1,100 client-visits in March. Because the cost was $60 less than we would have expected for the actual level of activity during the period, it is labeled as a favorable variance, $60 F. This is an example of A S*pending variance.*

A **spending variance** is the difference between the actual amount of the cost and how much a cost should have been, given the actual level of activity. If the actual cost is greater than what the cost should have been, the variance is labeled as unfavorable

If the actual cost is less than what the cost should have been, the variance is labeled as favorable. Why would a cost have a favorable or unfavorable variance? There are many possible explanations including paying a higher price for inputs than should have been paid, using too many inputs for the actual level of activity, a change in technology, and so on. In the next chapter we will explore these types of explanations in greater detail.

the overall net operating income variance is $9,280 U (unfavorable). This means that given the actual level of activity for the period, the net operating income was $9,280 lower than it should have been. There are a number of reasons for this. The most prominent is the unfavorable revenue variance of $3,800. Next in line is the $2,360 unfavorable variance for client gratuities. Looking at this in another way, client gratuities were more than 50% larger than they should have been according to the flexible budget. This is a variance that Rick would almost certainly want to investigate further. He may find that this unfavorable variance is not necessarily a bad thing.

It is possible, for example, that more lavish use of gratuities led to the 10% increase in client-visits. $1,300 unfavorable variance related to employee health insurance, thereby highlighting how a fixed cost can have a spending variance

fixed costs do not depend on the level of activity, the actual amount of a fixed cost can differ from the estimated amount included in a flexible budget. For example, perhaps Rick's employee health insurance premiums unexpectedly increased by $1,300 during March. In conclusion, the revenue and spending variances will help Rick better understand why his actual net operating income differs from what should have happened given the actual level of activity.

Performance Report Combining Activity Variances with Revenue and Spending Variances Rick's Hairstyling Flexible Budget Performance Report For the Month Ended March 31

	Act. Res.	R.& S. Var.	Flex. Bud.	Acti. Vari.	Stat. Bud.
Client-visits	1,100		1,100		1,000
Revenue ($180.00q).	194,200	$3,800 U	$198,000	$18,000 F	$180,000
Expenses:					
Wages and salaries	106,900	1,200 U	105,700	3,700 U	102,000
Hairstyling supplies)	1,620	30 F	1,650	150 U	1,500
Client gratuities	6,870	360 U	4,510	410 U	4,100
lectricity	1,550	60 F	1,610	10 U	1,600
Rent ($28,500)	28,500	0	28,500	0	28,500
Liability insurance	2,800	0	2,800	0	2,800
Employee health	22,600	1,300 U	21,300	0	21,300
Miscellaneous	2,130	710 U	1,420	20 U	1,400
Total expense	172,970	5,480 U	167,490	4,290 U	163,200
Net oper.income	$ 21,230	$9,280 U	$ 30,510	$13,710 F	$ 16,800

one errors—assuming that all costs are fixed. This is the error that is made when static planning budget costs are compared to actual costs without any adjustment for the actual level of activity.

Review Problem: Variance Analysis Using a Flexible Budget

Harrald's Fish House is a family-owned restaurant that specializes in Scandinavian-style seafood. Data concerning the restaurant's monthly revenues and costs appear below (*q* refers to the number of meals served):

Revenue	\$16.50q
Cost of ingredients	\$6.25q
Wages and salaries	\$10,400
Utilities	\$800 + \$0.20q
Rent	\$2,200
Miscellaneous	\$600 + \$0.80q

Required:

1. Prepare the restaurant's planning budget for April assuming that 1,800 meals are served.
2. Assume that 1,700 meals were actually served in April. Prepare a flexible budget for this level of activity.
3. The actual results for April appear below. Prepare a flexible budget performance report for the restaurant for April :

Revenue	\$27,920
Cost of ingredients	\$11,110
Wages and salaries	\$10,130
Utilities	\$1,080
Rent	\$2,200
Miscellaneous	\$2,240

Solution to Review Problem

1. The planning budget for April appears below:

Harold's Fish House Planning Budget For the Month Ended April 30	
Budgeted meals served (q) 1,800	
Revenue ($16.50q)	$ 29,700
Expenses:	
Cost of ingredients ($6.25q)	11,250
Wages and salaries ($10,400)	10,400
Utilities ($800 + $0.20q)	
Rent ($2,200)	2,200
Miscellaneous ($600 + $0.80q)	2,040
Total expense	27,050
Net operating income	$ 2,650

2. **The flexible budget for April appears below:**

Harrald's Fish House Flexible Budget For the Month Ended April 30

Actual meals served (q) 1,700

Revenue ($16.50q)	**$ 28,050**
Expenses:	
Cost of ingredients ($6.25q)	**10,625**
Wages and salaries ($10,400)	**10,400**
Utilities ($800 + $0.20q) Rent ($2,200)	**2,200**
Miscellaneous ($600 + $0.80q)	**1,960**
Total expense	**26,325**
Net operating income $	**1,725**

3. The flexible budget performance report for April appears below:

Harrald's Fish House

Flexible Budget Performance Report For the Month Ended April 30

	Act.Res.	Revenu.& Spe. Varia.	Flex. Bud.	Acti. Vari.	Plan. Bud.
Meals served	1,700		1,700		1,800
Revenue ($16.50q)	$ 27,920	$ 130 U	$ 28,050	$1,650 U	$ 29,700
Expenses:					
Cost of ingredients ($6.25q)	11,110	485 U	10,625	625 F	11,250
Wages and salaries ($10,400)	10,130	270 F	10,400	0	10,400
Utilities ($800 + $0.20q)	1,080	60 F	1,140	20 F	1,160
Rent ($2,200)	2,200	0	2,200	0	2,200
Miscellaneous ($600 + $0.80q)	2,240	280 U	1,960	80 F	2,040
Total expense	26,760	435 U	26,325	725 F	27,050
Net operating income	$ 1,160	$565 U	$ 1,725	$ 925 U	$ 2,650

Glossary

Activity variance The difference between a revenue or cost item in the flexible budget and the same item in the static planning budget. An activity variance is due solely to the difference between the actual level of activity used in the flexible budget and the level of activity assumed in the planning budget.

Flexible budget A report showing estimates of what revenues and costs should have been, given the actual level of activity for the eriod.

Management by exception A management system in which actual results are compared to a budget. Significant deviations from the budget are flagged as exceptions and investigated further.

Planning budget A budget created at the beginning of the budgeting period that is valid only for the planned level of activity.

Revenue variance The difference between the actual revenue for the period and how much the revenue should have been, given the actual level of activity. A favorable (unfavorable) revenue variance occurs because the revenue is higher (lower) than expected, given the actual level of activity for the period. .

Spending variance The difference between the actual amount of the cost and how much the cost should have been, given the actual level of activity. A favorable (unfavorable) spending variance occurs because the cost is lower (higher) than expected, given the actual level of activity for the period.

EXERCISE:

Exercises_1 Prepare a Flexible Budget:

Puget Sound Divers is a company that provides diving services such as underwater ship repairs to clients in the Puget Sound area. The company's planning budget for May appears below:

Puget Sound Divers Flexible Budget For the Month Ended May 31

Budgeted diving-hours (q) 100

Revenue ($365.00q)	$ 36,500
Expenses:	
Wages and salaries ($8,000 + $125.00q)	20,500
Supplies ($3.00q)	300
Equipment rental ($1,800 + $32.00q)	5,000
Insurance ($3,400)	3,400
Miscellaneous ($630 + $1.80q)	810
Total expense	30,010
Net operating income	$ 6,490

During May, the company's actual activity was 105 diving-hours.

Required: prepare a flexible budget for May.

Exercises 2 Activity Variances : Flight Café prepares in-flight meals for airlines in its kitchen located next to a local airport. The company's planning budget for July appears below:

Flight Café Planning Budget For the Month Ended July 31

	Budgeted meals (q) 18,000
Revenue ($4.50q)	$ 81,000
Expenses:	
Raw materials ($2.40q)	43,200
Wages and salaries ($5,200 + $0.30q)	10,600
Utilities ($2,400 + $0.05q)	3,300
Facility rent ($4,300)	4,300
Insurance ($2,300)	2,300
Miscellaneous ($680 + $0.10q)	2,480
Total expense	66,180
Net operating income	$ 14,820

In July, 17,800 meals were actually served. The company's flexible budget for this level of activity appears below:

Flight Café Flexible Budget For the Month Ended July 31

	Budgeted meals (q) 17,800
Revenue ($4.50q)	$ 80,100
Expenses:	
Raw materials ($2.40q)	42,720
Wages and salaries ($5,200 + $0.30q)	10,540
Utilities ($2,400 + $0.05q)	3,290
Facility rent ($4,300)	4,300
Insurance ($2,300)	2,300
Miscellaneous ($680 + $0.10q)	2,460
Total expense	65,610
Net operating income	$ 14,490

Required:

1. Calculate the company's activity variances for July.

2. Which of the activity variances should be of concern to management? Explain.

Exercise 3 : Prepare a Flexible Budget Performance Report :

Vulcan Flyovers offers scenic overflights of Mount St. Helens, the volcano in Washington State that explosively erupted in 1982. Data concerning the company's operations in July appear below: The company measures its activity in terms of flights. Customers can buy individual tickets for overflights or hire an entire plane for an overflight at a discount.

Vulcan Flyovers Operating Data For the Month Ended July 31

	Actu.Res.	Flex.Bud.	Planning Budget
Flights (q)	48	48	50
Revenue ($320.00q)	$ 13,650	$ 15,360	$ 16,000
Expenses:			
Wages and salaries ($4,000 + $82.00q)	8,430	7,936	8,100
Fuel ($23.00q)	1,260	1,104	1,150
Airport fees ($650 + $38.00q)	2,350	2,474	2,550
Aircraft depreciation ($7.00q)	336	336	350
Office expenses ($190 + $2.00q)	460	286	290
Total expense	12,836	12,136	12,440
Net operating income	$ 814	$ 3,224	$ 3,560

Required:

1. prepare a flexible budget performance report for July that includes revenue and spending variances and activity variances.
2. Which of the variances should be of concern to management? Explain.