Management Accountancy

Unit 13
Flexible Budget

Lecturer: Dr. Jeetendra Dangol

Contents

- Concept of flexible budget
- Need of flexible budget
- Difference between flexible and static budget
- Preparation of flexible budget

Learning Objectives

- Understand the meaning of flexible budget
- State the need of flexible budget
- Differentiate between flexible budget and static budget
- Prepare flexible budget by using formula and table method

Budget

- A budget is a detailed financial plan that quantifies future expectations and actions relative to acquiring and using resources
- Budgets don't guarantee success, but they certainly help to avoid failure

Flexible Budget

- The tool used by most companies to control overhead costs is called a flexible budget
- A flexible budget is not based on only one level of activity
- A flexible budget covers a range of activity within which the firm may operate
- A flexible overhead budget is defined as a detailed plan for controlling overhead costs that is valid in the firm’s relevant range of activity
- A detail plan for controlling overhead costs

Need of Flexible Budget

- Seasonal fluctuations in sales and/ or production
- A company which keeps on introducing new products or makes changes in design of its products frequently
- Industries engaged in make-to-order business
- An industry which is influenced by changes in fashion; and
- General changes in sales

Differences between Fixed Budget and Flexible Budget

Fixed Budget	Flexible Budget
It does not change with actual volume of activity level achieved. Thus it is known as rigid.	It can be changed on the basis of different activity level to be achieved. Thus it is not rigid.
It operates on one level of activity and under one set of conditions. It assumes that there will be no change in the prevailing conditions, which is unrealistic.	It consists of various budgets for different levels of activity.
Here as all costs like -fixed, variable and semi-variable are related to only one level of activity so variance analysis does not give useful information.	Here analysis of variance provides useful information as each cost is analysed according to its behaviour.
If the budgeted and actual activity levels differ significantly, then the aspects like cost ascertainment and price fixation do not give a correct picture.	Flexible budgeting at different levels of activity facilitates the ascertainment of cost, fixation of selling price and tendering of quotations.
Comparison of actual performance with budgeted targets will be meaningless specially when there is a difference between the two activity levels.	It provides a meaningful basis of comparison of the actual performance with the budgeted targets.

Flexible Budgets

Thinks are to be considered for preparing flexible budget

- The range of activity level for which the budget is to be prepared
- Determine cost behavior

  - Variable cost

  - Fixed cost

  - Semi-variable cost

  (Segregate semi-variable cost into VC & FC, if possible)
- Select the level of activity for which the budget is to be prepared
- Flexible budget can be prepared by using the knowledge of cost behavior

Developing the Flexible Budget (*Steps)*

Step 1: Identify the activity index (machine hours, labour hours, units) and relevant range of activity

Step 2: Identify the variable costs and determine budgeted variable cost per unit of activity

Step 3: Identify the fixed costs and determine budgeted fixed cost amount of activity

Step 4: Prepare the flexible budget for selected increments of activity within the relevant range

Flexible Budget (Solution Part)

Case 1: Find out budgeted total cost,
if budgeted outputs and costs are given

Case 2: Find out budgeted total profit or loss,
if budgeted outputs, costs, and sales revenue or selling price are given

Case 3: Find out budgeted selling price or revenue,
if budgeted output, cost, and desired rate of profit are given

Methods

(1) Formula method
(2) Tabulation method

Formula method

BA = FC + (UVC x LA)

y = a + bx

BA (y) = Budget Allowance (Budgeted total costs)

FC (a) = Total fixed cost

UVC (b) = Unit variable cost

LA (x) = Level of activity (Budgeted outputs)

Flexible Budget

Levels of Activity	... %	... %	... %	... %
Activity (Units)	...	...	...	...
A. Variable Costs:				
Direct Material				
Direct Labour				
Direct Expenses				
Total Variable Costs	...	...	...	...
B. Semi-variable Costs:				
Indirect Material				
Indirect Labour	...	...	...	...
Maintenance and Repairs	...	...	...	...
Total Semi-variable Costs	...	...	...	...
C. Fixed Costs:				
Maintenance and Repairs	...	...	...	...
Inspection	...	...	...	...
Depreciation	...	...	...	...
Salaries	...	...	...	...
Insurance	...	...	...	...
Others	...	...	...	...
Total Costs (A + B + C)	...	...	...	...

Question 1 (Case 1)

Variable cost per unit = $ 5 per unit

Fixed cost = $ 10,000

Required: Flexible budgeted for budgeted outputs 1,000 units, 2,000 units and 3,000 units.

Solution: Using Formula Method

BA = FC + (UVC x LA), y = a + bx

If output = 1,000 units, BA = $10,000 + ($5 X 1,000 units) = $15,000

If output = 2,000 units, BA = $10,000 + ($5 X 2,000 units) = $20,000

If output = 3,000 units, BA = $10,000 + ($5 X 3,000 units) = $25,000

Solution: Using Table Method

	Flexible Budget		
Budgeted Outputs (Units)	1,000 units	2,000 units	3,000 units
Budgeted VC @ $5/unit	$5,000	$10,000	$15,000
Budgeted FC	$10,000	$10,000	$10,000
Budgeted Total Cost [VC+FC]	$15,000	$20,000	$25,000

Question 2 (Case 1)

Budgeted Outputs (Units)	1,000 units	2,000 units
Material	$2,000	$4,000
Labour	$3,000	$6,000
Manufacturing overhead	$2,000	$3,000
Rent and other cost	$2,500	$2,500
Total Cost	$9,500	$15,500

Required:

Flexible budgeted for budgeted outputs 1,200 units, and 1,500 units.

Solution:

Segregation of Semi-VC

$$\text{UVC} = \frac{\text{Diff. in cost}}{\text{Diff. in Outputs}}$$

UVC = (3000-2000) / (2000-1000)

UVC = $1 per unit

FC = TC – (UVC x Outputs)

It outputs = 1,000 units

FC = 2,000 – (1 x 1,000) = $1,000

Cost Items	Cost Behavior	UVC	FC
Material	VC	$2	-
Labour	VC	$3	-
Overhead	Semi-VC	$1	$1,000
Rent/Other	FC	-	$2,500
Total		$6	$3,500

Now,	**Flexible Budget**	
Budgeted Outputs (Units)	1,200 units	1,500 units
VC @ $6 per unit	$7,200	$9,000
Fixed Cost	$3,500	$3,500
Budgeted Total Cost	$10,700	$12,500

Question 3 (Case 2)

Continue question 2
Additional information, Budgeted Selling Price = $8.50 per unit

Required:
Flexible budgeted for budgeted outputs 1,200 units, and 1,500 units.

Solution	**Flexible Budget**	
Budgeted Outputs (Units)	1,200 units	1,500 units
Budgeted Sales Revenue @ $8.50/unit	$10,200	$12,750
Variable Cost @ $6 per unit	$7,200	$9,000
Fixed Cost	$3,500	$3,500
Budgeted Total Cost	$10,700	$12,500
Budgeted Profit (Loss)	($500)	$250

Question 4 (Case 3)

Continue question 2

Additional information, Desired Profit = 20% on cost

Required:

Flexible budgeted for budgeted outputs 1,200 units, and 1,500 units.

Solution

	Flexible Budget	
Budgeted Outputs (Units)	1,200 units	1,500 units
Variable Cost @ $6 per unit	$7,200	$9,000
Fixed Cost	$3,500	$3,500
Budgeted Total Cost	$10,700	$12,500
Desired Profit @ 20% on cost	$2,140	$ 2,500
Budgeted Sales Revenue	$12,840	$15,000
Budgeted Selling Price	$10.70	$10

Question 5

Ram Higher School has total of 150 students consisting of 5 sections with 30 students per section. The school plans for a picnic around the city during the weekend to places such as the zoo, the amusement park, the planetarium, etc. A private transport operator has come forward to lease out the buses for taking the students. Each bus will have a maximum capacity of 50 (excluding 2 seats reserved for the teachers accompanying the students.) The school will employ two teachers on each bus, paying them an allowance of $ 50 per teacher. It will also lease out the required number of buses. The following are the other cost estimates:

	Costs per student ($)
Breakfast	5
Lunch	10
Tea	3
Entrance Fee at zoo	2
Rent $ 650 per bus	
Special Permit Fee $ 50 per bus	
Block Entrance Fee at the Planetarium $ 250	
Prizes to Students for Games $ 250	

No costs are incurred in respect of the accompanying teachers (except the allowance of $ 50 per teacher).

You are required to prepare:

(a) A flexible budget estimating the total cost for the levels of 30, 60, 90, 120 and 150 students. Each item of cost is to be indicated separately.

(b) Compare the average cost per student at these levels.

(c) What will be your conclusions regarding the break-even level of students if the school proposes to collect $ 45 per student ?

Solution: (a) Flexible Budget (b) Cost per student

Budgeted No. of students	30	60	90	120	150
A: Variable Costs					
Breakfast @ $5	150	300	450	600	750
Lunch @ $10	300	600	900	1,200	1,500
Tea @ $3	90	180	270	360	450
Entrance Fee at zoo @ $2	60	120	180	240	300
Total VC @ $20	600	1,200	1,800	2,400	3,000
B: Fixed Costs					
Block Entrance Fee at the Planetarium	250	250	250	250	250
Prizes to Students for Games	250	250	250	250	250
Total FC	500	500	500	500	500
C: Step FC (based on no. of bus)					
Bus Rent	650	1,300	1,300	1,950	1,950
Special Permit Fee	50	100	100	150	150
Teacher's Allowance	100	200	200	300	300
Total Step FC	800	1,600	1,600	2,400	2,400
Budgeted Total Cost (A+B+C)	1,900	3,300	3,900	5,300	5,900
Average cost per student	1900/30 = 63.33	3,300/60 = 55	3,900/90 = 43.33	5,300/120 = 44.17	5,900/150 = 39.33

(c) What will be your conclusions regarding the break-even level of students if the school proposes to collect $ 45 per student ?

No. of students	1-50 (1 Bus)	51-100 (2 Bus)	101-150 (3 Bus)
Selling Price (SP) Varaible Cost per Student (VCPS)	45 20	45 20	45 20
Contribution Margin per Student (CMPS)	25	25	25
Fixed Cost	500	500	500
Step Fixed Cost	800	1600	2400
Total Fixed Cost	1300	2100	2900
BEP (No. of Students) = FC/CMPS	1300/25 = 52	2100/25 = 84	2900/25 = 116
	Not possible	Possible	Possible
Conclusion		84 - 100 Students	116 – 150 Students

Question 6

A campus canteen provides meals at cost as follows:

	Variable Cost per Meal ($)	Annual Fixed Cost ($)
Food Items	20	–
Wages for the Manpower Involved	5	120,000
Utility and Services	3	80,000

Required: Flexible Budget for 20,000 meals for the 1st half and 30,000 for the second half year showing the price to be charged (a) if charge cost plus 10% (b) if charge 20% of sales price.

Flexible Budget (a) if charge cost plus 10%			
	1st Half (6 months)	2nd Half (6 Months)	Total (1 Year)
Budgeted Number of Meals	20,000	30,000	50,000
Budgeted VC			
Food items @ $ 20	400,000	600,000	10,00,000
Wages @ $ 5	100,000	150,000	2,50,000
Utility @ $ 3	60,000	90,000	1,50,000
Budgeted total VC @ 28	560,000	840,000	14,00,000
Budgeted FC			
Wages	60,000	60,000	1,20,000
Utility	40,000	40,000	80,000
Budgeted Total FC	100,000	100,000	2,00,000
Budgeted Total Cost (VC + FC)	660,000	940,000	16,00,000
Profit (!0% on total cost)	66,000	94,000	1,60,000
Budgeted Sales Revenue	726,000	1034,000	17,60,000
Budgeted Selling Price			17,60,000/50,000 =$ 35.20/Meal

Flexible Budget ((b) if charge 20% of price)			
	1st Half (6 months)	2nd Half (6 Months)	Total (1 Year)
Budgeted Number of Meals	20,000	30,000	50,000
Budgeted Total Cost (VC + FC)	660,000	940,000	16,00,000
Profit (20% on Sales)	165,000	235,000	4,00,000
Budgeted Sales Revenue	825,000	1,175,000	20,00,000
Budgeted Selling Price			20,00,000/50,000 = $ 40/Meal

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Thank You