

Flexible Budget

Cost and management accounting 2

4th semester

Budgetary control

A flexible budget is one which is prepared in such a way that it will be possible to determine the budget cost for any level of output.

Q1.

The expenses for the budgeted production of 10,000 units in a factory are given below:

	Per unit
Direct materials	70
Direct labour	25
Variable overhead	20
Fixed overhead (1,00,000)	10
Variable expenses (direct)	5
Selling expenses (10% fixed)	13
Distribution expenses (20% fixed)	7
Administrative expenses (Rs 50,000)	5
Total cost per unit	155

Prepare flexible budget for production of i. 8,000 units ii 6,000 units

Solutions

Number of units	10,000	8,000	6,000
Variable costs			
Direct materials	7,00,000	5,60,000	4,20,000
Direct labours	2,50,000	2,00,000	1,50,000
Variable overhead	2,00,000	1,60,000	1,20,000
Direct expenses	50,000	40,000	30,000
Selling expenses	1,17,000	93,600	70,200
Distribution expenses	56,000	44,800	33,600
Total variable cost	13,73,000	10,98,400	8,23,800
Fixed costs			
Fixed overhead	1,00,000	1,00,000	1,00,000
Selling expenses	13,000	13,000	13,000
Distribution expenses	14,000	14,000	14,000
Administrative expenses	50,000	50,000	50,000
Total fixed costs	1,77,000	1,77,000	1,77,000
Total cost	15,50,000	12,75,400	10,00,800

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Q2.

A factory is currently working at 50% capacity and produces 10,000 units of product P, the unit cost of which is Rs 180 comprised as follows (all figures in Rs):

Direct materials	100
Direct labours	30
Factory overhead	30 (40% fixed)
Administrative overhead	20 (50% fixed)
The selling price is Rs200	

If the capacity is increased to 60% the raw material cost will increase by 2% and selling price falls by 2%. At 80% capacity material cost increases by 5% and the selling price falls by 5%

You are required to prepare a flexible budget for three capacity levels (50%, 60% and 80%) and prepare a brief note for the management on the profitability at these levels of performance with your recommendation.

Capacity	50%	60%	80%
Number of units	10,000	12,000	16,000
Sales units C	20,00,000	23,52,000	30,40,000
Variable costs			
Direct materials	10,00,000	12,24,000	16,80,000
Direct labours	3,00,000	3,60,000	4,80,000
Factory overheads	1,80,000	2,16,000	2,88,000
Administrative overheads	1,00,000	1,20,000	1,60,000
Total variable costs (a)	15,80,000	19,20,000	26,08,000
Total fixed cost (b)	2,20,000	2,20,000	2,20,000
Total costs (a +b) (D)	18,00,000	21,40,000	28,28,000
Profit C-D	2,00,000	2,12,000	2,12,000

Note: at 60% level of activity profit is Rs2,12,000. At 80% level of activity the profit is also Rs2,12,000. As there is no change in the total profit, the company should operate at 60% level of activity.

Working Notes:

Factory overhead = 12* 10,000= 1,20,000

Administrative Overheads = 10* 10,000= 1,00,000

2,20,000

Ques 3.

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The information relating to the budget prepared for two levels of capacity utilization is given below:

Capacity	60%	100%
Output	36000U	60000 U
Materials	3,60,000	6,00,000
Direct wages	2,16,000	3,60,000
Production overhead	5,40,000	7,56,000
Administrative overhead	1,80,000	1,80,000
Selling overhead	1,44,000	1,92,000

Prepare a flexible budget for 70%, 80% and 90% capacity utilization showing clearly the unit fixed cost and variable unit cost and total cost (cu bcom 2006)

Solutions

Particulars	60% 36,000		70% 42,000		80% 48,000		90% 54,000		100% 60,000	
	Total	Pu	Total	Pu	Total	Pu	Total	Pu	Total	Pu
1. Direct materials	3,60,000	10.00	4,20,000	10.00	4,80,000	10.00	5,40,000	10.00	6,00,000	10.00
2. Direct wages	2,16,000	6.00	2,52,000	6.00	2,88,000	6.00	3,24,000	6.00	3,60,000	6.00
3. PC (1+2)	5,76,000	16.00	6,72,000	16.00	7,68,000	16.00	8,64,000	16.00	9,60,000	16.00
4. Variable production overhead	3,24,000	9.00	3,78,000	9.00	4,32,000	9.00	4,86,000	9.00	5,40,000	9.00
5. Variable selling overhead	72,000	2.00	84,000	2.00	96,000	2.00	1,08,000	2.00	1,20,000	2.00
6. Total VC (3+4+5)	9,72,000	27.00	11,34,000	27.00	12,96,000	27.00	14,58,000	27.00	16,20,000	27.00
7. Fixed prod over	2,16,000	6.00	2,16,000	5.14	2,16,000	4.50	2,16,000	4.00	2,16,000	3.60
8. Fixed administrative over	1,80,000	5.00	1,80,000	4.29	1,80,000	3.75	1,80,000	3.34	1,80,000	3.00
9. Fixed selling over	72,000	2.00	72,000	1.71	72,000	1.50	72,000	1.33	72,000	1.20
10. Fixed over(7+8+9)	4,68,000	13.00	4,68,000	11.14	4,68,000	9.75	4,68,000	8.67	4,68,000	7.80
11. Total cost	14,40,000	40.00	16,02,000	38.14	17,64,000	36.75	19,26,000	35.67	20,88,000	34.80

Workings

1. Output at 100% is 60,000 units

70% capacity= 60,000*70%= 42,000 u

80% capacity= 60,000*80%=48,000u

90% capacity= 60,000*90%=54,000U

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- Total administrative overhead is fixed cost by nature as this cost remains the same at 60% capacity as well as at 100% capacity
- Production overhead and selling overhead are semi variable cost in nature because as per the definition of semi variable costs cost per unit as well as total costs of these cost elements will vary with the change of output

Variable production overhead= change in cost/change in output=
 $(756000-540000)/(60000-36000)=Rs9$

So fixed portion of indirect wages
 $= (756000-60000*9)=216000$

Variable selling overhead per unit
 $= \text{change in cost/ change in output}$
 $= (192000-144000)/(60,000-36,000)u$
 $=Rs2$

So fixed portion of factory expenses
 $= (144,000- 36,000*2)$
 $=Rs72,000$

Ques4.

Production cost of rainbow ltd

	60%	70%	80%
Output units	1200	1400	1600
Costs (Rs)			
Direct materials	24,000	28,000	32,000
Direct labour	7200	8400	9600
Indirect labour	5600	6200	6800
Other factory expenses	12800	13600	14400
	49600	56200	62800

A proposal to increase production to 90% level of activity is under the consideration of management. The proposal does not involve any increase and decrease of fixed indirect wages and fixed factory expenses. Prepare a statement showing prime cost and total factory cost at 90% level of capacity

Statement of flexible budget

Particulars	60%		70%		80%		90%	
	1200 u		1400 u		1600		1800 u	
1. Direct mat	24,000	20	28,000	20	32000	20	36000	20
2. Direct lab	7200	6.00	8400	6.00	9600	6.00	10800	6.00
3. PC (1+2)	31,200	26.00	36,400	26.00	41,600	26.00	46,800	26.00
4. Variable indirect wages	3600	3.00	4200	3.00	4800	3.00	5400	3.00
5. Fixed indirect	2,000	1.67	2000	1.43	2,000	1.25	2,000	1.11

wages								
6. Indirect wages (4+5)	5600	4.67	6200	4.43	6800	4.25	7400	4.11
7. Variable other factory	4800	4.00	5600	4.00	6400	4.00	7200	4.00
8. Fixed other factory expenses	8,000	6.67	8,000	5.71	8000	5.00	8000	4.44
9. Other factory exp (7+8)	12,800	10.67	13,600	9.71	14,400	9.00	15200	8.44
10. Factory overhead	18,400	15.34	19800	14.14	21200	13.25	22600	12.65
11. Total factory cost (10+3)	49,600	41.34	56200	40.14	62800	39.25	69400	38.65

Workings:

1. At 60% capacity, output ie production and sale = 1200 units
2. At 100% capacity, production and sale= 1200/60%= 2000 units
3. At 90% capacity, production and sale (2000*90%) units= 1800 units
4. Indirect wages and other factory overhead are semi variables cost in nature because as per the definition of semi variable cost, cost per unit as well as total costs of these cost elements will vary with the change of output

Variable indirect wages per unit

=change in cost/change in output

= $(6200-5600)/(1400-1200)$ = Rs3

So fixed portion of indirect wages

= $(5600-1200*3)$ = Rs2000

Variable factory expenses per unit

=Change in cost/change in output

= $(13600-12800)/(1400-1200)$

Rs4

So fixed portion of factory expenses

= $(12800-1200*4)$

=8000