

Flexible budget and performance analysis

Companies use the variance analysis cycle to evaluate and improve performance report: highlight variance which are the difference between the actual results and what should have occurred according to the budget.

الموازنة المرنة وتحليل الأداء

تستعمل الشركات دورة تحليل الانحرافات لتقييم وتحسين تقرير الاداء: يظهر الانحراف الاختلاف بين النتائج الفعلية وما الذي يجب ان يحدث طبقا للموازنة.

The static planning budget

Is suitable for planning but is inappropriate evaluating.

موازنة التخطيط الثابتة او الساكنة// هي مناسبة للتخطيط ولكنها غير مناسبة للتقييم.

Flexible budget

Flexible budget take into account how changes in activity effect costs.

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

تأخذ الموازنة المرنة في الاعتبار تأثير التغيير في النشاط على التكاليف.

تستعمل الموازنة المرنة في تقييم الاداء و حيث يتم مقارنة التكاليف الفعلية بالتكاليف التي يجب ان تكون للمستوى الفعلي من النشاط خلال الفترة بدلا من موازنة التخطيط الثابتة (الساكنة).

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.

انحراف الإيراد/ الفرق بين الإيراد الفعلي للفترة والإيراد الذي يجب ان يكون، للمستوى الفعلي للنشاط.

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.

انحراف الانفاق / الفرق بين المقدار الفعلي من التكلفة ، والتكلفة التي يجب ان تكون للمستوى الفعلي من النشاط.

Activity variance

The difference between a revenue or cost item in the flexible budget and the same item in the static planning budget.

انحراف النشاط / الاختلاف بين عنصر الإيراد أو التكلفة في الموازنة المرنة ونفس العنصر في الموازنة التخطيط الثابتة (الساكنة).

Multiple Choice Questions (MCQ)

1- Spending variance is :

- A) The difference between a revenue or cost item in the flexible budget and the same item in the static planning budget.
- B) The difference between the actual revenue for the period and how much the revenue should have been, given the actual level of activity.
- C) The difference between the actual amount of the cost and how much the cost should have been, given the actual level of activity.

Answer: (C).

2- True or False

The static planning budget/ Is suitable for evaluating but is inappropriate for planning.

- A) True
- B) False

Answer : (B)

3. True or False

Flexible budget take into account how changes in activity affect costs.

- A) True
- B) False

Answer : (A)

The analysis of mixed costs

Managers can use a variety of method to estimates the fixed and variable components of mixed cost such as:

- 1- Account analysis.
- 2- Engineering approach.
- 3- High – low method.

High – low method : estimates the and variable components of mixed cost by analyzing past record of cost and activity data.

$$\begin{aligned} \text{variable cost} &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{\text{cost of the high activity level} - \text{cost of the low activity level}}{\text{high activity level} - \text{low activity level}} \\ &= \frac{\text{change in cost}}{\text{change in activity}} \end{aligned}$$

The following data for the recent seven month period:-

Month	Activity level	Maintenance cost (mix cost)
January	5,600 unit	\$ 7,880
February	7,100	9,080
march	5,000	7,400
April	6,500	8,600
may	7,300	9,240
June	8,000	9,800
july	6,200	8,360

Required: by using high – low method

- 1- Estimate variable cost.
- 2- Estimate fixed cost.

Solution :

	UNITS	COST \$
<i>high activity level</i>	8,000	9,800
<i>low activity level</i>	5,000	7,400

$$\text{variable cost} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{variable cost} = \frac{9800 - 7400}{8000 - 5000} = 0.80 \text{ \$ Per unit}$$

fixed cost = total cost – variable cost

$$9800 - (0.80 * 8000) = 3400$$

$$7880 - (0.80 * 5600) = 3400$$

$$9080 - (0.80 * 7100) = 3400$$

$$7400 - (0.80 * 5000) = 3400$$

$$8600 - (0.80 * 6500) = 3400$$

Example on static and 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	\$ 16.50 q
Cost of ingredients	\$ 6.25 q
Wages and salaries	\$ 10,400
Utilities	\$ 800 + \$ 0.20 q
Rent	\$ 2,200
miscellaneous	\$ 600 + \$ 0.80 q

Required

- 1- Prepare the restaurant`s planning budget for April assuming that 1,800 meals are served.**
- 2- Assuming 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.**

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

Solution

1- Static planning budget

(q) 1800 meal

Revenue (16.50 * 1,800)		29,700
Expenses:		
Cost of ingredient (6.25*1800)	11,250	
Wages and salaries	10,400	
Utilities [800+(0.20*1800)]=[800+360]	1,160	
Rent	2,200	
Miscellaneous [600+(0.80*1800)]=[600+1440]	2,040	

Total expenses		27,050

Net operating income		2,650

2- Flexible budget

(q) 1700 meal

Revenue (16.50 * 1,700)		28,050
Expenses:		
Cost of ingredient (6.25*1700)	10,625	
Wages and salaries	10,400	
Utilities [800+(0.20*1700)]=[800+ 340]	1,140	
Rent	2,200	

Miscellaneous $[600+(0.80*1700)]=[600+1360]$ **1,960**

Total expenses **26,325**

Net operating income **1,725**

3- performance report

revenue and spending variance

	Actual results	Flexible budget	revenue and spending variance
Revenue	\$ 27,920	28,050	130 U
Expenses:			
Cost of ingredient	\$ 11,110	10,625	485 U
Wages and salaries	\$ 10,130	10,400	270 F
Utilities	\$ 1,080	1,140	60 F
Rent	\$ 2,200	2,200	0
Miscellaneous	\$ 2,240	1,960	280 U
Total expenses	26,760	26,325	435 U
Net operating income	1,160	1,725	565 U

performance report

Activity variance

	Flexible budget	Static budget	Activity variance
Revenue	28,050	29,700	1650 U
Expenses:			
Cost of ingredient	10,625	11250	625 F
Wages and salaries	10,400	10400	0
Utilities	1,140	1160	20 F
Rent	2,200	2200	0
Miscellaneous	1,960	2040	80 F
Total expenses	26,325	27050	725 F
Net operating income	1,725	2650	925 U

Exercise // Stares Company use a flexible budget for planning and cost control. The following information a relating testing department two level capacity.

	80%	100%
Direct Labor Hour (D.L.H)	500 hr.	625 hr.
Indirect material	\$ 450	\$ 562.5
Indirect labor	1350	1500
Rent expense	1500	1500
Depreciation expense	750	750
Other expense	587.5	587.5
total	4637.5	5000

Required:

Prepare a flexible budget activity levels that amount (500, 550,600) D.L.H.

Solution

Not :

$$\text{IN.D.M} = \frac{\$450}{500 \text{ h.}} = \underline{0.9} \quad \frac{\$562.5}{625 \text{ h.}} = \underline{0.9} \quad \text{it is variable}$$

$$\text{IN.D.L} = \frac{1350}{500 \text{ h.}} = \underline{2.7} \quad \frac{1500}{625 \text{ h.}} = \underline{2.4} \quad \text{it is mixed}$$

$$\text{Variable rate per D.L.H} = \frac{1500-1350}{625-500 \text{ h.}} = 1.2 \text{ variable cost per hour}$$

$$\text{Fixed F.O.H at the high level} = 1500 - (1.2 * 625)$$

$$= 1500 - 750$$

$$= 750$$

$$\text{Fixed F.O.H at the low level} = 1350 - (1.2 * 500)$$

$$= 1350 - 600$$

$$= 750$$

Flexible budget

	V. per h.	500 h.	550 h.	600h.
V. F.O.H				
IN.D.M	0.9	450	495	540
IN.D.L	1.2	600	660	720
TOTAL VARIABLE COST	2.1	1050	1155	1260
F.F.O.H				
Rent expense		1500	1500	1500
Depreciation expense		750	750	750
Other expense		587.5	587.5	587.5
IN.D.L		750	750	750
TOTAL FIXED COST		3587.5	3587.5	3587.5
TOTAL COSTS		4637.5	4742.5	4847.5

The following information related to Baghdad Company that used a flexible budget for planning and cost control and its normal capacity level amount 400 direct labor hours (100% level)

Variable F.O.H		Fixed F.O.H	
Indirect material (IN.D.M)	\$ 180	Insurance	\$ 1200
Indirect labor (IN.D.L)	\$ 660	Depreciation	\$ 1600
Supplies expense	\$ 420	Rent	\$ 1400
Maintenance	\$ 210	total	\$ 4200
Heat and light	\$ 240		
total	\$ 1710		

Required:

- 1- Prepare a flexible budget for F.O.H. that ranging from (100 - 400) D.L.H.
- 2- Compute the overall (total) F.O.H. rate for every level and explanted that cause of the deference in rates.
- 3- Prepare a flexible budget formula.
- 4- Prepare a performance report under the following actual information. Direct labor hour 200 hour.

data cost incurred:-

IN.D.M \$ 100	IN.D.L \$ 350	Supplies \$ 200	Maintenance \$ 115
Heat and light \$ 110	Insurance \$ 1250	Dep. Exp. \$ 1600	Rent \$ 1500

Solution

Variable F.O.H

$$\text{IN.D.M} = \frac{180}{400} = 0.45$$

$$\text{IN.D.L} = \frac{660}{400} = 1.65$$

$$\text{Supplies expense} = \frac{420}{400} = 1.05$$

$$\text{Maintenance} = \frac{210}{400} = 0.525$$

$$\text{Heat and light} = \frac{240}{400} = 0.6$$

$$\text{Total Variable F.O.H} = 0.45 + 1.65 + 1.05 + 0.525 + 0.6 = 4.275$$

Flexible budget

	Variable rate per D.L.H.	100	200	300	NORMAL CAPACITY (N.C) 400
Variable F.O.H					
IN.D.M	0.45	\$ 45	\$ 90	\$ 135	\$ 180
IN.D.L	1.65	165	330	495	660
Supplies exp.	1.05	105	210	315	420
Maintenance	0.525	525	105	157.5	210
Heat and light	0.6	60	120	180	240
Total Variable F.O.H	4.275	427.5	855	1282.5	1710
Fixed F.O.H					
Insurance		\$ 1200	\$ 1200	\$ 1200	\$ 1200
Dep. Exp.		\$ 1600	\$ 1600	\$ 1600	\$ 1600
Rent		\$ 1400	\$ 1400	\$ 1400	\$ 1400
Total Fixed F.O.H		\$ 4200	\$ 4200	\$ 4200	\$ 4200
Total F.O.H		4627.5	5055	5482.5	5910

2- the overall (total) F.O.H. rate for every level

$$\text{F.O.H. rate for 100 level} = \frac{4627.5}{100} = 46.275 = \overbrace{V. 4.275}^{46.275} + F. 42$$

$$\text{F.O.H. rate for 200 level} = \frac{5055}{200} = 25.275 = \overbrace{V. 4.275}^{25.275} + F. 21$$

$$\text{F.O.H. rate for 300 level} = \frac{5482.5}{300} = 18.275 = \overbrace{V. 4.275}^{18.275} + F. 14$$

$$\text{F.O.H. rate for 400 level} = \frac{5910}{400} = 14.775 = \overbrace{V.4.275 + F.10.5}^{14.775}$$

ان سبب الاختلاف هو التكاليف الثابتة

3- flexible budget formula

$$Y = A + BX$$

Y= Total cost

A= fixed cost

B= Variable cost per activity

X= activity volume or level.

$$\underline{\underline{y = 4200 + 4.275 X}}$$

$$\text{cost at 100 h.} = 4200 + (4.275 \times 100) = 4627.5$$

$$\text{cost at 200 h.} = 4200 + (4.275 \times 200) = 5055$$

$$\text{cost at 300 h.} = 4200 + (4.275 \times 300) = 5482.5$$

$$\text{cost at 400 h.} = 4200 + (4.275 \times 400) = 5910$$

Performance Report

Item	Actual cost at 200 actual D.L.H	flexible budget at 200 actual D.L.H	Variance
IN.D.M	100	\$ 90	10 un.
IN.D.L	350	330	20 un.
Supplies exp.	200	210	10 fav.
Maintenance	115	105	10 un.
Heat and light	110	120	10 fav.
Insurance	1250	\$ 1200	50 un.
Dep. Exp.	1600	\$ 1600	0
Rent	1500	\$ 1400	100 un.
total	5225	5055	170 un.

Favorable ملائم

unfavorable غير ملائم
