

CHAPTER 6: STANDARD COSTING

Standard Costing is the chapter that deals with the ascertainment of variances and their interpretation between the actuals and preset Standards and / or Budgets. Variances are worked out for both expenditure (or cost) items as well as for income (Revenue) items with a view to ascertain the reasons for deviations if any, from the expected results and the steps to be taken to contain adverse variances and take corrective measures.

Question

Describe three distinct groups of variances that arise in standard costing.

Answer

The three distinct groups of variances that arise in standard costing are:

Variances of efficiency: These are the variance, which arise due to efficiency or inefficiency in use of material, labour etc.

Variances of prices and rates: These are the variances, which arise due to changes in procurement price and standard price.

Variances due to volume: These represent the effect of difference between actual activity and standard level of activity.

These can be summarized as under:

Element of cost	Variances of Efficiency	Variances of price	Variances of volume
Material	Usage, Mix, Yield	Price	-
Labour	Efficiency, idle time	Rate of pay	--
Variable Overhead	Efficiency	Expenditure	Capacity
Fixed overhead	Efficiency	Expenditure	Calendar

Note: *Readers are expected to have thorough knowledge and understanding of the formulas in this chapter so that they can answer the questions perfectly. In every examination there will be a variety of questions (especially problems) from this chapter. Strong conceptual knowledge is very essential to handle such questions. Apart from knowing*

the formulas, they should also be clear in concept why such formula is to be used for calculation.

Variances are also classified into:

- Material Variances;
- Labour variances;
- Overhead variances:
 - ❖ Variable overhead variances;
 - ❖ Fixed overhead variances;
- Sales / Profit variances;

Material Variances:

Total Material Cost Variance (TMCV) is the difference between the Standard Material Cost [Standard Quantity (SQ) x Standard Price (SP)] to be incurred for given production and the Actual Material Cost [Actual Quantity (AQ) X Actual Price (AP)] incurred for that production. This arises due to change in the prices of procurement of materials or change in the usage of materials or both.

$$\text{TMCV} = \text{SQ} \times \text{SP} - \text{AQ} \times \text{AP}$$

Total Material Cost Variance is bifurcated into Material Price Variance (MPV) and Materials Usage Variance (MUV).

$$\text{TMCV} = \text{MPV} + \text{MUV}$$

Material Price Variance (MPV) is the difference between Standard Price (SP) and Actual Price (AP) multiplied with the Actual Quantity (AQ). This arises due to the change in prices procurement of materials.

$$\text{MPV} = \text{AQ} (\text{SP}-\text{AP}) = \text{AQ} \times \text{SP} - \text{AQ} \times \text{AP}$$

Material Usage Variance (MUV) is the difference between the Standard Quantity (SQ) and Actual Quantity (AQ) multiplied with the Standard Price (SP). This arises due to the change in quantities of usage of materials. This measures the efficiency in usage of materials.

$$\text{MUV} = \text{SP} (\text{SQ}-\text{AQ}) = \text{SP} \times \text{SQ} - \text{SP} \times \text{AQ}$$

Material Usage Variance (MUV) is further bifurcated into Material Mix Variance (MMV) and Materials Sub Usage Variance (MSUV). Materials Sub

Usage Variance (MSUV) is also called as Materials Usages Other Causes Variance (MUOCV).

$$\text{MUV} = \text{MMV} + \text{MSUV}$$

Materials Mix Variance is the difference between the Standard Cost per unit of Standard Mix (SCpuSM) and Standard Cost per unit of Actual Mix (SCpuAM) multiplied with Actual Quantity (AQ). This arises due to change in composition of usage of materials.

$$\text{MMV} = \text{AQ} (\text{SCpuSM} - \text{SCpuAM})$$

Materials Sub Usage Variance (MSUV) is the difference between the Standard Quantity (SQ) and Actual Quantity (AQ) multiplied with Standard Cost per unit of Standard Mix (SCpuSM)

$$\text{MSUV} = \text{SCpuSM} (\text{SQ} - \text{AQ})$$

In cases where output is given, in such cases there will be Material Yield Variance (MYV) instead of Materials Sub Usage Variance (MSUV). Then,

$$\text{MUV} = \text{MMV} + \text{MYV}$$

Material Yield Variance (MYV) is the difference between Actual Yield (AY) and Standard Yield (SY) multiplied with Standard Yield Rate (SYR). This arises due to change in yields between the standards and actuals.

$$\text{MYV} = \text{SYR} (\text{AY} - \text{SY})$$

Labour Variances:

Total Labour Cost Variance (TLCV) is the difference between the Standard Labour Cost [Standard Hours (SH) x Standard Rate (SR)] to be incurred for given output and the Actual Labour Cost [Actual Hours (AH) X Actual Rate (AR)] incurred for that output. This arises due to change in the wage rates of labour or change in the usage hours of labour or both.

$$\text{TLCV} = \text{SH} \times \text{SR} - \text{AH} \times \text{AR}$$

Total Labour Cost Variance is bifurcated into Labour Rate Variance (LRV) and Labours Efficiency Variance (LUV)

$$\text{TLCV} = \text{LRV} + \text{LEV}$$

Labour Rate Variance (LRV) is the difference between Standard Rate (SR) and Actual Rate (AR) multiplied with the Actual Hours (AH). This arises due to change in the rates of labour.

$$\text{LRV} = \text{AH} (\text{SR}-\text{AR}) = \text{AH} \times \text{SR} - \text{AH} \times \text{AR}$$

Labour Efficiency Variance (LEV) is the difference between the Standard Hours (SH) and Actual Hours (AH) multiplied with the Standard Rate (SR). At times Labour Efficiency Variance is also called as Labour Usage Variance. This arises due to change in the number of hours used to generate the same output.

$$\text{LEV} = \text{SR} (\text{SH}-\text{AH}) = \text{SR} \times \text{SH} - \text{SR} \times \text{AH}$$

Labour Efficiency Variance (LEV) is further bifurcated into Labour Mix Variance (MMV) (Labour Mix Variance is also known as Labour Gang Variance) and Labour Yield Variance (LYV) and Idle Time Variance (ITV).

$$\text{LEV} = \text{LMV} + \text{LYV} + \text{LITV}$$

Labour Mix Variance is the difference between the Actual Hours at Standard Proportion (AH@sp) and Actual Hours (AH) multiplied with Standard Rate (SR). This arises due to the change in composition of the labour gang in generating the output.

$$\text{LMV} = \text{SR} (\text{AH@sp} - \text{AH})$$

Labour Yield Variance (LYV) is the difference between the Actual Yield (AY) and Standard Yield multiplied with Standard Yield Rate (SYR). Standard Yield Rate is also called Standard Cost per unit of Standard Output (SCpuSO). This arises due to the differences between the actual output and the standard output in actual hours.

$$\text{LYV} = \text{SYR} (\text{AY} - \text{SY})$$

Labour Idle Time Variance (LITV) is the value of Idle Hours (IH) @ Standard Rate (SR). This arises due to abnormal factors like power cuts, machinery break down, strike etc. Normal gaps for lunch, tea, etc. are not considered. This arises when hours paid exceeds actual hours worked.

$$\text{LITV} = \text{IH} \times \text{SR}$$

Labour Sub Efficiency Variance (LSEV) is the difference between the Standard Hours for Actual Output (SHAO) and Actual Hours for Actual Output (AHAO) multiplied with the Standard Rate. This is that portion of

Labour Efficiency Variance which arises for reasons other than those specified for Labour Mix and Idle Time.

$$\text{LSEV} = \text{SR} (\text{SHAO} - \text{AHAO})$$

Overhead Variances: Overhead variances are calculated under two methods. Viz. On hours basis and / or on units basis. Depending on the available information in the problem, any of the two methods can be adopted. Following are the basic workings that are to be made before variances are calculated.

	Hours Basis			Units Basis		
1	Std. OH rate / hr.	=	Budg. OH / Budg. Hrs.	Std. OH rate / unit	=	Budg. OH / Budg. Units
2	Std. Hrs. for Actual Prodn. (SHAP)	=	(Budg. Hrs. / Budg. Prodn.) x Actual Prodn.	Std. Output for Actual Hrs.	=	(Budg. Output / Budg. Hrs.) x Actual Hrs.
3	Absorbed OH	=	SHAP x Std OH rate / hr.	Absorbed OH	=	Std. OH rate / unit x Act. units
4	Std. OH	=	Std. Hrs. x Std. OH rate / hr.	Std. OH	=	(Std. OH rate / unit) x Std. units
5	Budg. OH	=	Budg. Hrs. x Std. OH rate / hr.	Budg. OH	=	(Std. OH rate / unit) x Budg. units
6	Actual OH	=	Actual hrs. x Act. OH rate / hr.	Actual OH	=	(Actual. OH rate / unit) x Act. units

Variable Overhead Variances

Variable Overhead Cost Variance (VOHCV) is the difference between Absorbed Variable Overhead (Abs.VOH) and Actual Variable Overhead (Act.VOH). This arises due to variations in sales commissions paid, consumables used, output generated by machinery and / or labour etc.

$$\begin{aligned} \text{VOHCV} &= \text{Abs.VOH} - \text{Act.VOH} \\ &= \text{SHAP} \times \text{Std.OH rate / hr.} - \text{Act.VOH} \\ &= \text{Std.VOH rate / unit} \times \text{Act.Units} - \text{Act.VOH} \end{aligned}$$

Variable Overhead Cost Variance (VOHCV) is bifurcated into Variable Overhead Expenditure Variance (VOHExp.V) and Variable Overhead Efficiency Variance (VOHEff.V)

$$\text{VOHCV} = \text{VOHExp.V} + \text{VOHEff.V}$$

Variable Overhead Expenditure Variance (VOHExp.V) is the difference between Standard Variable Overhead for Actual Hours (SVOH) and Actual

Variable Overhead (ActVOH). This indicates the over spending or under spending of overheads (like sales commission, consumables etc.) compared to standards.

$$\begin{aligned}
 \text{VOHExp.V} &= \text{SVOH for Act. Hrs.} - \text{Act.VOH} \\
 &= \text{Std. Hrs.} \times \text{Std.VOH rate / hr.} - \text{Act.VOH} \\
 &= \text{Std. UNITS} \times \text{Std.VOH rate / unit} - \text{Act.VOH} \\
 &= \text{Bud. VOH for Act. Hrs. @ Std. rate} - \text{Act. VOH} \\
 &= \text{Act. Hrs.} \times (\text{Std. Rate} - \text{Act. Rate})
 \end{aligned}$$

Variable Overhead Efficiency Variance (VOHEff.V) is the difference between Absorbed Variable Overhead (Abs.VOH) and Standard Variable Overhead for Actual Hours (SVOH). This indicates the productivity of labour / machinery

$$\begin{aligned}
 \text{VOHEff.V} &= \text{Abs.VOH} - \text{SVOH for Act. Hrs.} \\
 &= \text{Std. rate} \times \text{Std. Hrs.} - \text{Std. rate} \times \text{Act. Hrs.} \\
 &= \text{Std. rate / unit} \times (\text{Std. Units in Act. Hrs.} - \text{Act. Units})
 \end{aligned}$$

Fixed Overhead Variances

Fixed Overhead Cost Variance (FOHCV) is the difference between Absorbed Fixed Overhead (Abs.FOH) and Actual Fixed Overhead (Act.FOH). This arises due to increase or decrease in fixed overheads like rent of office building, insurance of admin building, variations in capacity levels operations, etc.

$$\begin{aligned}
 \text{FOHCV} &= \text{Abs.FOH} - \text{Act.FOH} \\
 &= \text{Std.FOH rate / hr.} \times \text{SHAP} - \text{Act.FOH} \\
 &= \text{Std. rate / Unit} \times \text{Std. output for Act. Hrs.} - \text{Act. FOH} \\
 &= \text{Std.FOH rate / unit} \times \text{Act. Units} - \text{Act.FOH}
 \end{aligned}$$

Fixed Overhead Cost Variance (FOHCV) is bifurcated into Fixed Overhead Expenditure Variance (FOHExp.V) and Fixed Overhead Volume Variance (FOHVol.V)

$$\text{FOHCV} = \text{FOHExp.V} + \text{FOHVol.V}$$

Fixed Overhead Expenditure Variance (FOHExp.V) is the difference between Budgeted Fixed Overhead (Bud.FOH) and Actual Fixed Overhead (Act.FOH). This indicates the improper use of facilities, seasonal conditions etc.

$$\begin{aligned}\text{FOHExp.V} &= \text{Bud.FOH for Actual Prodn.} - \text{Act.FOH} \\ &= \text{Act. Hrs.} \times (\text{Std. rate} - \text{Act. Rate})\end{aligned}$$

Fixed Overheads Volume Variance (FOHVol.V) is the difference between the Absorbed Fixed Overheads (Abs.FOH) and Budgeted Fixed Overhead (Bud.FOH). This arises due to changes in levels of activity / volume, number of working days etc.

$$\begin{aligned}\text{FOHVol.V} &= \text{Abs.FOH} - \text{Bud.FOH} \\ &= \text{SFOH rate / hr.} \times (\text{Actual Vol. in Std. Hrs.} - \text{Bud. Vol. In Std. Hrs.}) \\ &= \text{SFOH rate / hr.} \times (\text{Act. Hrs. worked} - \text{Bud. Hrs.}) \\ &= \text{SFOH rate / unit} \times (\text{Act. Units} - \text{Bud. Units})\end{aligned}$$

Fixed Overheads Volume Variance (FOHVol.V) is further bifurcated into Fixed Overhead Efficiency Variance (FOHEff.V), Fixed Overhead Capacity Variance (FOHCap.V) and Fixed Overhead Calendar Variance (FOHCal.V).

$$\text{FOHVol.V} = \text{FOHEff.V} + \text{FOHCap.V} + \text{FOHCal.V}$$

Fixed Overhead Efficiency variance (FOHEff.V) is the difference between the Absorbed Fixed Overhead (Abs.FOH) and the Standard Fixed Overhead (SFOH). This arises due to efficiency or inefficiency of labour and / or machinery.

$$\begin{aligned}\text{FOHEff.V} &= \text{Abs.FOH} - \text{SFOH} \\ &= \text{SFOH rate / hr.} \times (\text{SHAP} - \text{Act. Hrs.}) \\ &= \text{SFOH rate / unit} \times (\text{Std. Units in Act. Hrs.} - \text{Act. Units}) \\ &= \text{Abs. FOH} - \text{Act. Hrs.} \times \text{SFOH rate / hr.}\end{aligned}$$

Fixed Overhead Capacity Variance (FOHCap.V) is the difference between the Standard Fixed Overhead (SFOH) and Budgeted Fixed Overhead (Bud.FOH). This arises because of changes in levels of activity.

$$\begin{aligned}\text{FOHCap.V} &= \text{SFOH} - \text{Bud.FOH} \\ &= \text{SFOH rate / hr.} \times (\text{Act. Cap. Hrs.} - \text{Budg. Cap. Hrs.}) \\ &= \text{SFOH rate / unit} \times (\text{Act. Units} - \text{Bud Units})\end{aligned}$$

$$= \text{Act. Hrs.} \times \text{Std. FOH Rate} - \text{Bud. FOH}$$

Fixed Overhead Calendar Variance (FOHCal.V) is the one which arises due to change in the number of actual working days (or hours) and budgeted working days. This is calculated by the difference between Actual Working Days and Budgeted Working days multiplied with Standard Fixed Overhead Rate (SFOH)

$$\text{FOHCal.V} = (\text{Actual Days} - \text{Budgeted Days}) \times \text{SFOH rate} / \text{day}$$

$$= \text{SFOH rate} / \text{hr.} \times (\text{Bud. Hrs. in Act. Days} - \text{Bud. Hrs. in Bud. Days})$$

Note: When downtime (i.e. idle time) exists, then, Capacity Variance & Calendar Variance are to be worked on revised std. hrs.

Sales Variances

Sales variances can be calculated in any of the two methods viz. Turnover method or margin (profit) method. Formulas under both the methods will be similar to Material Variance Formulas.

Sales Variances – Turnover Method

Sales Value Variance (SVal.V) = Actual Quantity (AQ) x Actual Price (AP) – Budgeted Quantity (BQ) x Budgeted Price (BP)

$$\text{SVal.V} = \text{AQ} \times \text{AP} - \text{BQ} \times \text{BP}$$

Sales Price Variance (SPV) = Actual Quantity (AQ) x [Actual Price (AP) – Budgeted Price (BP)]

$$\text{SPV} = \text{AQ} \times (\text{AP} - \text{BP})$$

Sales Volume Variance (SVol.V) = Budgeted Price (BP) x [Actual Quantity (AQ) – Budgeted Quantity (BQ)]

$$\text{SVol.V} = \text{BP} \times (\text{AQ} - \text{BQ})$$

Further,

$$\text{SVal.V} = \text{SPV} + \text{SVol.V}$$

Also, Sales Volume Variance (SVol.V) is bifurcated into Sales Mix Variance (SMiV) and Sales Sub Volume Variance (SSVV).

$$\mathbf{SVol.V = SMiV + SSVV}$$

Sales Mix Variance (SMiV) = [Actual Quantity (AQ) – Actual Quantity at standard proportion (AQ@sp)] x Budget Price (BP)

$$\mathbf{SMV = (AQ - AQ@sp) \times BP}$$

Sales Sub Volume Variance (SSVV) = [Actual Quantity at standard proportion (AQ@sp) – Budget Quantity] x Budget Price.

$$\mathbf{SSVV = (AQ@sp - BQ) \times BP}$$

Sales Variances – Margin Method

Sales Margin Variance (SMaV) = Actual Quantity (AQ) x Actual Margin (AM) – Budget Quantity (BQ) x Budget Price (BP)

$$\mathbf{SMaV = AQ \times AM - BQ \times BP}$$

Sales Margin Price Variance (SMaPV) = Actual Quantity x [Actual Margin (AM) – Budget Margin (BM)]

$$\mathbf{SMaPV = AQ \times (AM - BM)}$$

Sales Margin Volume Variance (SMaVV) = Budget Margin (BM) x [Actual Quantity (AQ) – Budget Quantity (BQ)]

$$\mathbf{SMaVV = BM \times (AQ - BQ)}$$

Sales Margin Mix Variance (SMaMV) = Budget Margin (BM) x [Actual Quantity (AQ) – Actual Quantity @ standard proportion (AQ@sp)]

$$\mathbf{SMaMV = BM \times (AQ - AQ@sp)}$$

Sales Margin Sub Volume Variance (SMaSVV) = [Actual Quantity @ standard proportion (AQ@sp) – Budget Quantity (BQ)] x Budget Margin (BM)

$$\mathbf{SMaSVV = (AQ@sp - BQ) \times BM}$$

Market Share Variance

Market Share Variance indicates the difference between:

- a. Actual Sales at Budget Contribution per unit and
- b. Sales Units representing the budgeted share of actual market at Standard Contribution / unit

This indicates the change in contribution or margin caused by a change in market share.

Market Share Variance (MShV) = (Actual Market Share % - Budget Market Share %) x Actual Industry Sales Volume in units x Budget Average Contribution Margin / unit

Market Size Variances

Market Size Variance represents the difference between:

- a. Sales units as per Budget Share of Actual Market at Budget Contribution / unit and
- b. Budget Contribution.

This indicates the change in contribution or margin caused by a change in the size of the market.

Market Size Variance = (Actual Industrial Sales Volume in Units – Budget Industrial Sales Volume in units) x Budget Market Share % x Budget Contribution Margin / Unit

Marketing Cost Variances

When Marketing Costs contain both Fixed and Variable Costs, then separate variances are to be calculated.

Question

"Overhead variances should be viewed as interdependent rather than independent". Explain.

Answer

The operations of a firm are so inter linked that the level of performance in one area of operation will affect the performance in other areas. Improvements in one area may lead to improvements in other areas. A sub-standard performance in one area may be compensated by a favourable performance in another area. Because of such interdependency among activities in the firm, the managers should not jump to conclusions merely based on the label of variances namely favourable or unfavourable. They should remember that there is a room for trade off amongst variances. Hence, variances need to be viewed as 'attention directors' rather than problem solvers. Thus, a better picture will be captured when overhead variance are not viewed in isolation but in an integrated manner.

Question

"Calculation of variances in standard costing is not an end in itself, but a means to an end." Discuss.

Answer

The crux of standard costing lies in variance analysis. Standard costing is the technique whereby standard costs are predetermined and subsequently compared with the recorded actual costs. It is a technique of cost ascertainment and cost control. It establishes predetermined estimates of the cost of products and services based on management's standards of efficient operation. It thus lays emphasis on "what the cost should be". These 'should be costs' are then compared with the 'actual costs'. The difference between standard cost and actual cost of actual output is defined as the variance.

The variance in other words is the difference between the actual performance and the standard performance. The calculations of variances are simple. A variance may be favourable or unfavourable. If the actual cost is less than the standard cost, the variance is favourable but if the actual cost is more than the standard cost, the variance will be unfavourable. They are easily expressible and do not provide detailed analysis to enable management to exercise control over them. It is not enough to know the figures of these variances from month to month. We infact are required to trace their origin and causes of occurrence for taking necessary remedial steps to reduce / eliminate them.

A detailed probe into the variance particularly the controllable variances help the management to ascertain:

- a. the amount of variance
- b. the factors or causes of their occurrence
- c. the responsibility to be laid on executives and departments and
- d. Corrective actions which should be taken to obviate or reduce the variances.

Mere calculation and analysis of variances is of no use. The success of variance analysis depends upon how quickly and effectively the corrective actions can be taken on the analysed variances. In fact variance gives information. The manager needs to act on the information provided for taking corrective action. Information is the means and action taken on it is the end. In other words, the calculation of variances in standard costing is not an end in itself, but a means to an end.

Question

"Standard costing variances centre around comparison of actual Performance with the standard and the standards or plans are normally based on the environment anticipated when the targets are set and if the current environment is different from that anticipated, such analysis cannot measure managerial performance". Comment on the statement and how will you deal with the situation with reference to material, labour and sales variances.

Answer

The statement given in the question highlights practical difficulties faced by our industries today.

When the current environmental conditions are different from the anticipated environmental conditions (prevailing at the time of setting standard or plans) the use of routine analysis of variance for measuring managerial performance is not desirable / suitable.

The variance analysis can be useful for measuring managerial performance if the variances computed are determined on the basis of revised targets / standards based on current actual environmental conditions. In order to deal with the above situation i.e. to measure managerial performance with reference to material, labour and sales variances, it is necessary to proceed and compute the following variances.

Material variances:

In the case of material purchase price variance, suppose the standard price of raw material determined was Rs. 5 per unit, the general market price per unit at the time of purchase was Rs. 5.20 and actual price paid per unit was Rs. 5.18 on the purchase of say 10,000 units of raw material.

In this case the variances to be computed should be:

Uncontrollable material purchase price planning variance:

= (Standard price p.u. – General market price p.u.) Actual quantity purchased

= (Rs. 5 – Rs. 5.20) 10,000 units = Rs. 2,000 (Adverse)

Controllable material purchase price efficiency variance:

= (General market price p.u. – Actual price paid p.u.) Actual quantity purchased

= (Rs. 5.20 – 5.18) 10,000 units

= Rs. 200 (Fav.)

In the case of material usage variance, suppose the standard quantity per unit be 5 kgs, actual production units be 250 and actual quantity of material used is 1,450 kgs. Standard cost of material per kg. was Re.1. Because of shortage of skilled labour it was felt necessary to use unskilled labour and that increased material usage by 20%.

The variances to be computed to deal with the current environmental conditions will be: Uncontrollable material usage planning variances:

= (Original std. quantity in kgs. – Revised std. quantity in kgs.) Standard price per kg.

= (1,250 kgs. – 1,500 kgs) Re.1

= Rs. 250 (Adverse)

Controllable material usage efficiency variance:

= (Revised standard quantity in kgs. - Actual quantity used in kgs.) Standard price per kg.

= (1,500 kgs. – 1,450 kgs.) Re.1

= Rs. 50 (Favourable)

Labour variances:

Like material variances, here also labour efficiency and wage rate variances should also be adjusted to reflect changes in environmental conditions that prevailed during the period. The labour efficiency variances would be equivalent to the following two variances.

Uncontrollable labour efficiency planning variance

Controllable labour efficiency variance

The above variances would arise when unskilled labour is substituted for skilled labour.

Similarly, one uncontrollable and other controllable variance would arise in the case of wage rate variance as well under current environmental conditions.

Sales variances:

The conventional sales volume variance reports the difference between actual and budgeted sales, priced at the budgeted contribution per unit. The variance merely indicates whether sales volume is greater or less than expected. It does not indicate how well sales management actual sales volume should be compared with an expert estimate that reflects the market conditions prevailing during that period.

Total sales margin variance (planning element):

$$= \{ \text{Expert's budgeted sales volume} \times (\text{Expert's selling price} - \text{Standard cost}) - \text{Original budgeted sales volume} \times (\text{Budgeted selling price} - \text{Standard cost}) \}$$

Total sales margin variance (appraisal element):

$$= \{ \text{Actual sales volume} \times (\text{Actual selling price} - \text{Standard cost}) \}$$
$$= \text{Expert's budgeted sales volume} \times (\text{Expert's selling price} - \text{Standard cost}) \}$$

The figure of "Expert's budgeted sales volume" for a particular product can be determined by estimating the total market sales volume for the period and then multiplying the estimate by the target percentage of market share.

Question

"How are cost variances disposed off in a standard costing system? Explain."

Answer

There is no unanimity of opinion among Cost Accountants regarding the disposition of variances. The following are commonly used methods for their disposition.

- a. Transfer all variances to Profit and Loss Account. Under this method, stock of work-in-progress, finished stock and cost of sales are maintained at standard cost and variances arising are transferred to profit and loss account.
- b. Distributing variances on pro-rata basis over the cost of sales, work-in-progress and finished goods stocks by using suitable basis.

- c. Write off quantity variance to profit and loss account and spread price variance over to cost of sales, work in progress and finished goods. The reason behind apportioning variance to inventories and cost of sales is that they represent costs although they are derived as variances.

Question

State the features of Partial plan of Standard Cost Accounting procedure.

Answer

Standard cost operations can be recorded in the books of account by using partial plan, Features of partial plan of standard costing procedure are as follows:

- a. Partial plan system uses current standards in which the inventory will be valued at current standard cost figure.
- b. Under this method WIP account is charged at the actual cost of production for the month and is credited with the standard cost of the month's production of finished product.
- c. The closing balance of WIP is also shown at standard cost. The balance after making the credit entries represent the variance from standard for the month.
- d. The analysis of variance is analysed after the end of the month.

In Partial Plan, Work in Process a/c. is debited with Actual Cost of Production and credited with Standard Cost of Finished Goods and Standard Cost of Work in Process. The balance in Work in Process a/c. Represents the sum of net variances which is transferred to respective Variance Accounts and from there to the costing P & L account.

Single Plan: In Single Pan, Work in Process a/c. Is debited and credited with Standard Costs and variances are accounted in respective Variance Accounts. From there, the variances are transferred to the Costing P & L a/c.

Work in Progress is credited with Finished Goods Value at Standard Cost.

Materials are accounted at Standard Cost.

Variances are accounted directly in respective Variances Accounts.

FORMULAS

SL #	Material Variances
M1	$MCV = SQ \times SP - AQ \times AP$
	$TMCV = MPV + MUV$
M2	$MPV = AQ \times (SP - AP) = AQ \times SP - AQ \times AP$
M3	$MUV = SP \times (SQ - AQ) = SP \times SQ - SP \times AQ$
	$MUV = MMV + MSUV$
M4	$MMV = AQ \times (SC_{puSM} - SC_{puAM})$
M5	$MSUV = SC_{puSM} \times (SQ - VAQ)$
	$MUV = MMV + MYV$
M6	$MYV = SYR \times (AY - SY)$
SL #	Labour Variances
L1	$TLCV = SH \times SR - AH \times AR$
	$TLCV = LRV + LEV$
L2	$LRV = AH \times (SR - AR) = AH \times SR - AH \times AR$
L3	$LEV = SR \times (SH - AH) = SR \times SH - SR \times AH$
	$LEV = LMV + LYV + LITV$
L4	$LMV = SR \times (AH_{@sp} - AH)$
L5	$LYV = LSEV = SYR \times (AY - SY)$
L6	$LITV = IH \times SR$
L7	$LSEV = SR \times (SHAO - AHAO)$

OVERHEAD VARIANCES

	Hours Basis			Units Basis		
1	Std. OH rate / hr.	=	Budg. OH / Budg. Hrs.	Std. OH rate / unit	=	Budg OH / Budg. Units
2	Std. Hrs. for Actual Prodn. (SHAP)	=	(Budg. Hrs. / Budg. Prodn.) x Actual Prodn.	Std. Output for Actual Hrs.	=	(Budg. Output / Budg. Hrs.) x Actual Hrs.
3	Absorbed OH	=	SHAP x Std OH rate / hr.	Absorbed OH	=	Std. OH rate / unit x Act. units
4	Std. OH	=	Std. Hrs. x Std. OH rate / hr.	Std. OH	=	(Std. OH rate / unit) x Std. units
5	Budg. OH	=	Budg. Hrs. x Std. OH rate / hr.	Budg. OH	=	(Std. OH rate / unit) x Budg. units
6	Actual OH	=	Actual hrs. x Act. OH rate / hr.	Actual OH	=	(Actual. OH rate / unit) x Act. units

SL #	Variable Overhead Variances
V1	VOHCV
	= Std. VOH - Act. VOH
	= Std. rate x Std. hrs. - Act. Rate x Act. Hrs.
	= Abs. OH - Act. OH
	= SHAP x Std. Rate - Act. VOH
	= Std. Output for Act. Hrs. x Std. rate/unit - Act. VOH
	VOHCV = VOHExp.V + VOHEff.V
V2	VOHExp.V
	= Budg. VOH - Act. VOH
	= Bud. VOH for Act. Hrs. (or Units) @ Std. rate - Act. VOH
	= SVOH for Act. Hrs. (or Units) - Act. VOH
	= Act. Hrs. x (Std. rate - Act. Rate)
	= Act. Hrs. x Std. rate - Act. VOH
V3	VOHEff.V
	= Std. rate/hr. x (SHAP - Actl. Hrs.)
	= Std. rate/unit x (Std. units in act. Hrs. - Actl. units)
	= Abs. OH - Std. OH
	= Std. rate x Std. hrs. - Std. Rate x Act. Hrs.

SL #	Fixed Overhead Variances
F1	FOHCV
	= Abs. FOH - Act. FOH
	= SHAP x Std. Rate/hr. - Act. FOH
	= Std. Output for Act. Hrs. x Std. rate/unit - Act. FOH
	= SFOH rate / Unit X Act. Units - Act. FOH
	FOHCV = FOH Exp.V + FOHVol.V
F2	FOHExp.V
	= Budg. FOH for Act. Prodn. - Act. FOH
	= Act. Hrs. x (Std. Rate - Act. Rate)

F3	FOHVol.v
	= Std. rate/hr. x (Act. Hrs. worked - Budg. Hrs to be worked)
	= Std. rate/unit. x (Act. units - Budg. units)
	= Abs. FOH - Budg. FOH
	= FOH recovery rate x (Act. Vol. in Std. hrs. - Budg. Vol. in Std. hrs.)
	= Abs.FOH for Act. Prodn. - Bud. FOH
	FOHVol.V = FOHCapV + FOHEffV + FOHCalV
F4	FOHCap.V
	= Std. rate/hr. x (Act. Cap.hrs. - Budg. Cap.hrs.)
	= Std. rate/unit x (Act. Cap. Units - Budg. Cap. Units)
	= Act. Hrs x Std.FOH rate - Budg. FOH
	= Std. OH rate/unit or rate /hr. x (Act. Units or hrs. Act. days - Bud. Units or hrs. in Act. Days)
	= Std. FOH - Bud. FOH
F5	FOHEff.V
	= Std. rate/hr. x (SHAP - Act. Hrs.)
	= Std. rate/hr. x (Std. hrs. -Act. Hrs.)
	= Std. rate/unit x (Std. units in Act. hrs. - Act. Units)
	= Abs. FOH - Act. Hrs x Std. rate
	= Abs. FOH - Std. FOH
F6	FOHCal.V
	= Std. rate/hr. x (Budg. Hrs. in Act. Days - Budg. Hrs. in Budg. Days)
	= SFOH rate / day X (Actual days in Budget period - Budgeted days in Budget Period)

Note :	When downtime (i.e. idle time) exists, then, Capacity Variance & Calendar Variance are to be calculated on the basis of revised std. hrs.
---------------	---

Mkt. Share Variance

$$(\text{Act. Mkt. Sh. \%} - \text{Budg. Mkt. Sh. \%}) \times \text{Act. Ind. Sales Vol. in units} \times \text{Bud. Avg. Contrbn. / Unit}$$
Mkt. Size Variance
$$(\text{Act. Indl. Sales Vol. in Units} - \text{Budg. Indl. Sales Vol. in Units}) \times \text{Budg. Mkt. Sh. \%} \times \text{Bud. Avg. Contrbn. / Unit}$$