

Standard costing

Standard

- The word *standard* means a criterion (*principle, measure*).
- A standard figure is one against which one can measure an actual figure to see the deviation.

Standard Cost

- Standard cost is ‘a predetermined cost which is compared in advance of production on the basis of specifications of all the factors affecting costs and used in standard costing.’
- In other words, standard cost is a predetermined cost that should be attained under a given set of operating conditions.

Standard Costing

- Standard costing is a technique which is used in many industries, where production is of repetitive nature.
- Standard costing is developed due to the shortcomings of historical costing.
- CIMA, London, defines standard costing ‘as the predetermined cost based on technical estimates of materials, labour and overheads for selected period of time and for the prescribed set of working conditions’.
- Standard costing is that technique in which the standard cost is determined before starting the production.

Standard costing system

- The management evaluates the performance of a company by comparing it with some predetermined measures
- Therefore, it can be used as a process of measuring and correcting actual performance to ensure that the plans are properly set and implemented

Objectives Of Standard Costing

- To establish control
- To set standards for various elements of cost
- To fix responsibility
- To make budgetary control more effective

Procedures of standard costing system

- Set the predetermined standards for sales margin and production costs
- Collect the information about the actual performance
- Compare the actual performance with the standards to arrive at the variance
- Analyze the variances and ascertaining the causes of variance
- Take corrective action to avoid adverse variance
- Adjust the budget in order to make the standards more realistic

Functions of standard costing system

- Valuation
 - Assigning the standard cost to the actual output
- Planning
 - Use the current standards to estimate future sales volume and future costs
- Controlling
 - Evaluating performance by determining how efficiently the current operations are being carried out

- Motivation
 - Notify the staff of the management's expectations
- Setting of selling price

Variance

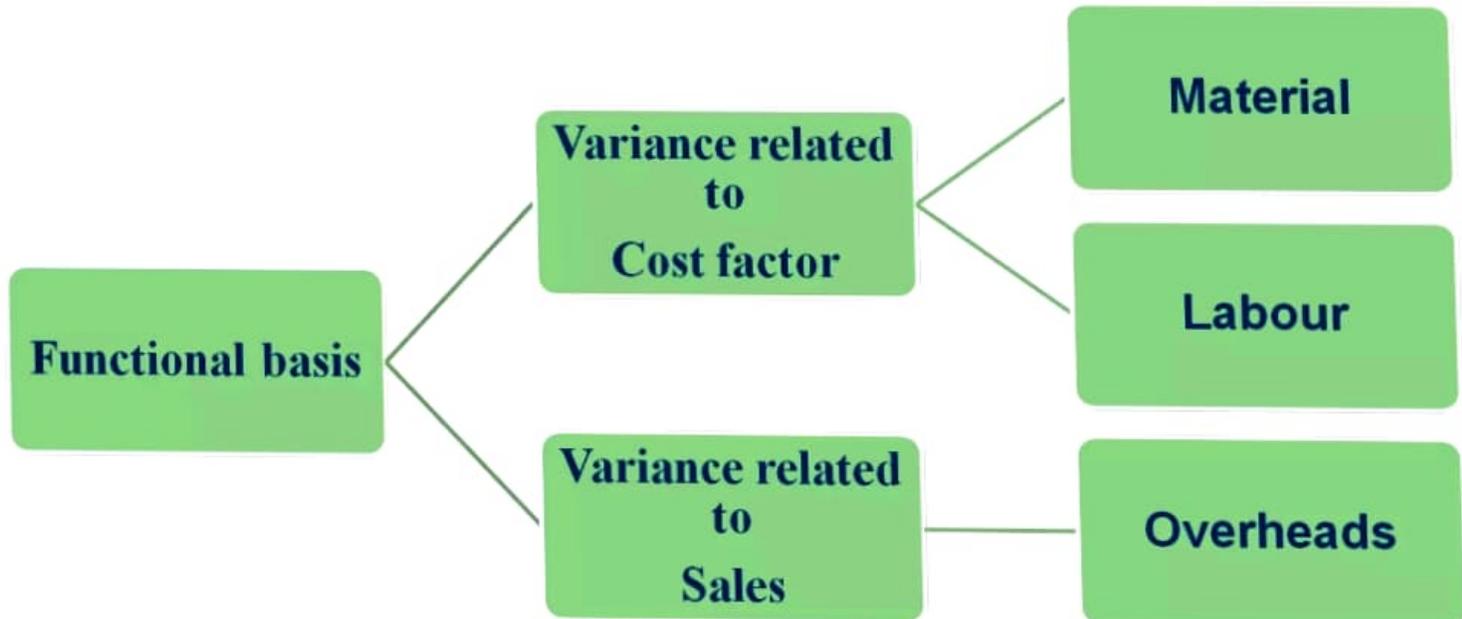
Variance analysis

- A variance is the difference between the standards and the actual performance
- When the actual results are better than the expected results, there will be a favourable variance (F)
- If the actual results are worse than the expected results, there will be an adverse variance (A)

Classification Of Variances

- Functional Basis
- Measurement Basis
- Result Basis
- Controllability Basis

Functional Basis



Measurement Basis

**Measurement
basis**

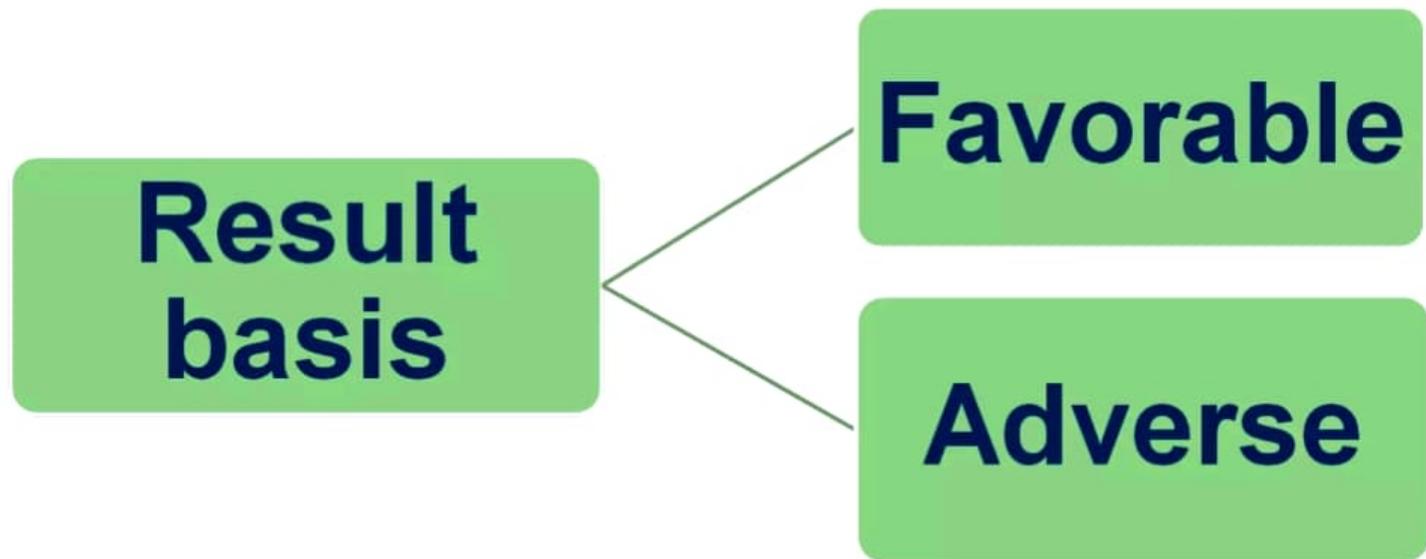
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graph LR; A[Measurement basis] --- B[Absolute]; A --- C[Relative];
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Absolute

Relative

- **Absolute variance:** Difference between the standard cost and the actual cost in terms of money is known as absolute variance.
- **Relative variance:** difference is expressed as a percentage of the standard cost, it is known as relative variance.

Result basis



Cost variance



Cost variance

- $\text{Cost variance} = \text{Price variance} + \text{Quantity variance}$

Cost variance is the difference between the standard cost and the
Actual cost

- $\text{Price variance} = (\text{standard price} - \text{actual price}) * \text{Actual quantity}$

A price variance reflects the extent of the profit change
resulting from the change in activity level

- $\text{Quantity variance} = (\text{standard quantity} - \text{actual quantity}) * \text{standard cost}$

A quantity variance reflects the extent of the profit change
resulting from the change in activity level

Three types of cost variance

- Material cost variance
- Labour cost variance
- Variable overheads variance

Material and labour variance

Material cost
variance

Material
price
variance

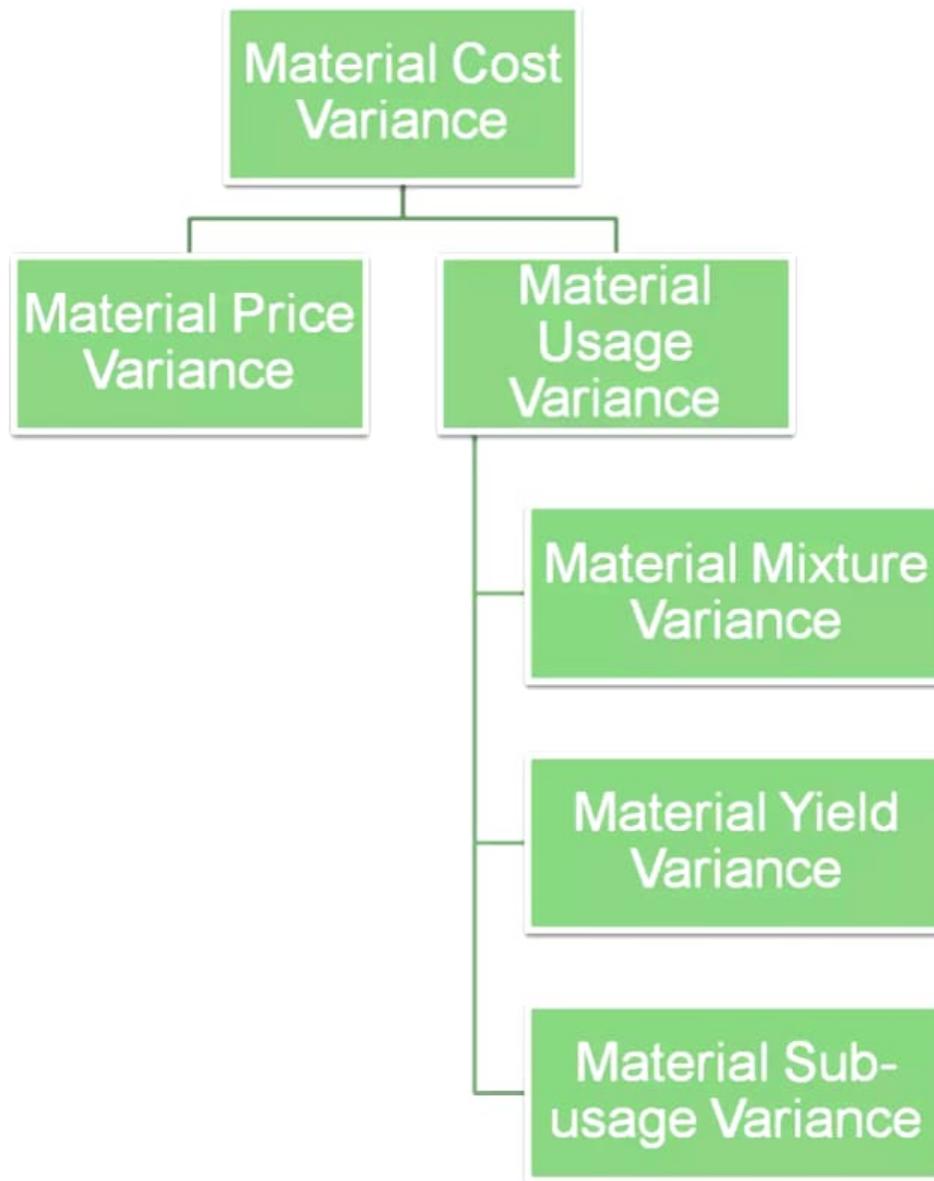


Material
usage
variance

Material mix
variance



Material
yield
variance



Material cost variance

- It is the difference between the standard direct material cost of the actual production volume and the actual cost of direct materials.
- **Material cost variance = (Standard quantity of input for actual production × SP) – (Actual quantity of input × AP)**
- **Material cost variance = Material price variance + Material usage variance**

Material cost variance

- **Material price variance**

$$= (\text{standard price} - \text{actual price}) * \text{actual quantity}$$

$$= (\$3 - \$3.2) * 2400$$

$$= \$480 \text{ (A)}$$

- **Material usage variance**

$$= (\text{Standard quantity} - \text{actual quantity}) * \text{standard price}$$

$$= (\text{Standard quantity for actual production} - \text{actual}$$

$$\text{quantity production}) * \text{standard price}$$

$$\frac{4000 \text{ units}}{1000 \text{ units}} \rightarrow = (4 * 800 - 2400) * \$3$$

$$= \$2400 \text{ (F)}$$

Material cost variance

• Material price variance	\$480 (A)
• Material usage variance	<u>\$2400 (F)</u>
• Total Material cost variance	\$1920 (F)

Material price variance

- This is that portion of the material cost variance which is due to the difference between the standard price specified and the actual price paid.
- If the actual price is higher than the standard price, it would result in adverse price variance and if the actual price is lower than standard price, the result is favorable price variance.
- **Material price variance** = (standard price – actual price) x actual quantity of materials

Material Usage Variance

- This is that portion of material cost variance which is due to the difference between the standard quantity of actual production and the actual quantity used.
- **Material usage variance**
= (Standard quantity – actual quantity) x standard price
= (Standard quantity for actual production – actual quantity production) x standard price

Material Mix Variance

- This is that portion of usage variance which is due to the difference between the standard and actual composition of mixture.
- **Material Mixture Variance** = Standard price [Actual quantity in standard mix (i.e. RSQ) – Actual quantity]
- **Revised Standard quantity** = Total actual quantity consumed \times $\frac{\text{Standard quantity of particular material}}{\text{Total standard quantity of all the materials}}$

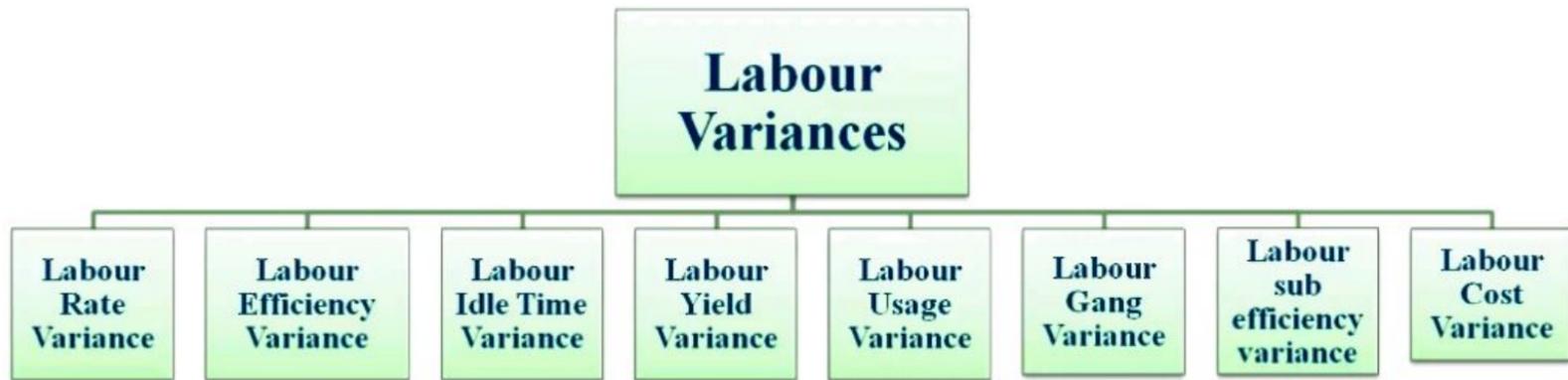
Material Yield Variance

- This variance arises due to the difference between the standard yield specified and actual yield obtained.
- **Material yield variance** = [(Standard loss in terms of actual input) – (Actual loss on actual input)] × (Average standard price)
- **Material yield variance** = Material usage variance – Material mix variance

Material Sub-usage Variance

- When a product is produced from a mixture of two or more kinds of material, there may arise material sub-usage variance.
- **Material sub-usage variance** = (Standard Quantity – Revised Standard Quantity) × Standard Price
- It can be seen from this formula that material sub-usage variance is the analysis of variance in basic standard quantity of each material.

Labour Variances



Formulas Of Labour Variances

- **Labour rate variance** = (standard price – actual price) x actual hours
- **Labour Idle Time Variance** = [(actual hrs.- idle time) x standard price] – (actual hrs. x standard price)
- **Labour Gang variance** = [revised(actual hrs.- idle time) x standard price] – [(actual hrs.- idle time) x standard price]
- **Labour Yield variance** = [revised(actual hrs.- idle time) x standard price x (actual output/standard output)] - [revised(actual hrs.- idle time) x standard price]
- **Labour sub-efficiency variance** = (standard hrs. x standard price) - [revised(actual hrs.- idle time) x standard price x (actual output/standard output)]

- **Labour Cost Variance** = (standard hrs. x standard price) – (actual hrs. x actual price)
- **Labour Usage variance** = standard price x (standard hrs. – actual hrs.)
- **Labour efficiency variance** = (standard hrs. x standard price) - [revised(actual hrs.- idle time) x standard price]

Labour Rate Variance

- This is that portion of the labour cost variance which is caused by the use of actual wage rate other than predetermined.
- *Labour rate variance = Actual labour time (Standard wage rate – Actual wage rate)*

Labour Efficiency Variance

- It is the difference between the standard time and the actual time spent multiplied by standard wage rate.
- *Labour efficiency variance = Standard wage rate (Standard labour time – Actual labour time)*

Labour Idle Time Variance

- It is that portion of labour cost variance which is due to the abnormal idle time of workers.
- While calculating labour efficiency variance, abnormal idle time is deducted from the actual time spent to determine the real efficiency of the workers.
- *Idle time variance = Abnormal idle time × Standard wage rate*

Labour Usage Variance

- Labour Usage Variance is the measure of difference between standard hours and actual hours, multiplied by the standard rate.
- ***Labour Usage variance = (standard hrs. – actual hrs.) x standard price***

Labour Yield Variance

- It is computed on the basis of the increase or decrease in the actual yield or output when compared to the standard.
- *Labour Yield Variance = [Actual yield – Standard yield in units expected from the actual hours worked] × Standard labour cost per unit*

Labour Cost Variance

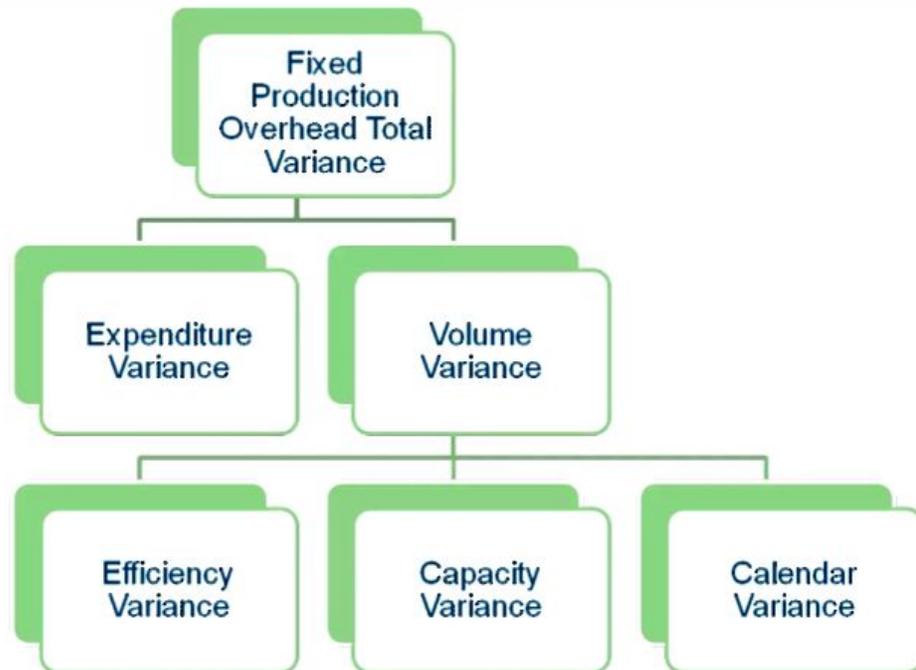
- Labor cost variance can be defined as the deviation of the actual direct wages paid from the direct wages specified for the standard output.
- *Labour Cost Variance= (Standard time x Standard price)-(Actual time x Actual price)*

Overheads variance

I. Variable Production Overhead Variance

- Standard Variable Overheads = Actual Production * Standard Rate
- Standard Rate = Budgeted Variable Overheads / Budgeted Production

II. Fixed Production Overhead Variances



- **Fixed Production Overhead Cost or Total Variance**

Total Variance = (Actual Production * Standard Recovery Rate) - Actual Overheads

- **Fixed Production Overhead Expenditure Variance**

Expenditure Variance = (Standard Recovery rate * Budgeted Production) - Actual Overhead



- **Fixed Production Overhead Volume Variance**

Volume Variance = Standard Fixed Overhead -
Budgeted fixed Overhead

- Value Variance= Actual Sales- Budgeted Sales
- Price Variance= Actual Sales – Standard Sales
- Volume Variance= Standard Sales- Budgeted Sales
- Quantity Variance= Revised Standard Sales – Budgeted Sales
- Mixed Variance= Standard Sales – Revised Standard Sales