

Standard Costing and Variance Analysis

Standard Costing

Standard cost is predetermined cost agreed earlier under specific working conditions. Standard costing is a technique which establishes predetermined estimates of the costs of products and services, compares them with actual cost incurred in order to find out variances and takes necessary measures to control such variances.

Advantages of standard costing

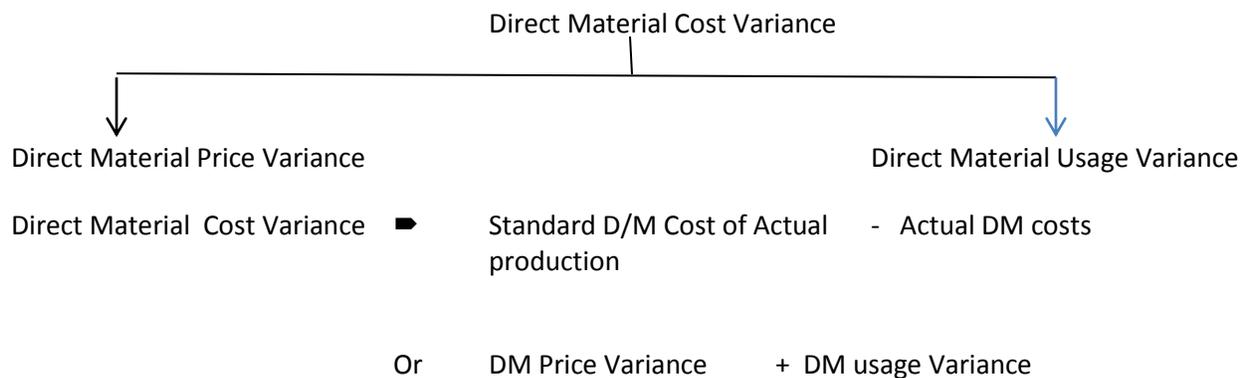
- It helps management in formulating price and production policy
- It acts as a yardstick of performance
- It reduces avoidable wastage and losses
- It assists the process of setting budgets
- It assists in the improvement of efficiency
- It assists to motivate the staff and management
- It assists in the operation of management by exception principle
- It encourages a forward looking mentality
- It facilitates timely cost reports and operating statements
- It acts as control device

Limitations/Disadvantages of standard costing

- It may be costly and time consuming
- Inefficient staff is in cable of operating system
- For small entities, it is expensive
- It is not effective for non-standardised products

Variations Analysis

Direct Material (DM) Variances



Direct Material Price Variance ➤ Actual Material quantity (Standard price – Actual Price)

Direct Material Usage Variance ➤ Standard price (Standard usage of Actual product– Actual Usage)

Example

Standard direct material cost per unit of product X - Rs.150 Per 1kg @ 2kg - Rs. 300

Actual Production for the month - 49,000 units

Actual Material Usage - 100,000kg (1kg – Rs.145)

Calculate the variances

DM Price Variance ➤ Actual Material quantity (Standard price – Actual Price)
 $100,000\text{kg} (150 - 145) = 100,000 \times 5$
500,000 Favourable

Actual price is lesser than standard price, therefore this is favourable variance

DM Usage Variance ➤ Standard price (Standard usage – Actual Usage)
 $150 (49,000 \times 2\text{kg} - 100,000) = 150 (98,000 - 100,000)$
300,000 Adverse

Actual usage is higher than standard usage, therefore this is adverse variance.

DM Cost Variance ➤ $500,000 \text{ (Favourable)} + 300,000 \text{ (adverse)}$
 $500,000 - 300,000 = \mathbf{200,000 \text{ Favourable}}$

Or

Standard D/M Cost of Actual - Actual DM costs

Cost of actual production

$(49,000 \times 300) - (100,000 \times 145)$

$14,700,000 - 14,500,000 = \mathbf{200,000 \text{ Favourable}}$

Direct Labour (DL) Variances

Direct Labour Cost Variance



Direct Labour Cost Variance ➤ Standard D/L Cost of Actual - Actual DL costs production

Or DL Rate Variance + DL Efficiency Variance

VOH Expenditure Variance ► Actual labour hours (Standard rate – Actual rate)
 Or
 (VOH absorption rate per hour X Actual Hours) – Actual VOH

VOH efficiency Variance ► Standard rate (Standard labour hours – Actual labour hours)
 Or
 Standard VOH absorption rate(Standard hours for Act production-Act hours)

Example

Standard Variable cost of a product A is Rs.30 (2 hours @Rs.15 per hour) and actual information is as follow.

Actual Variable cost - Rs.8,000

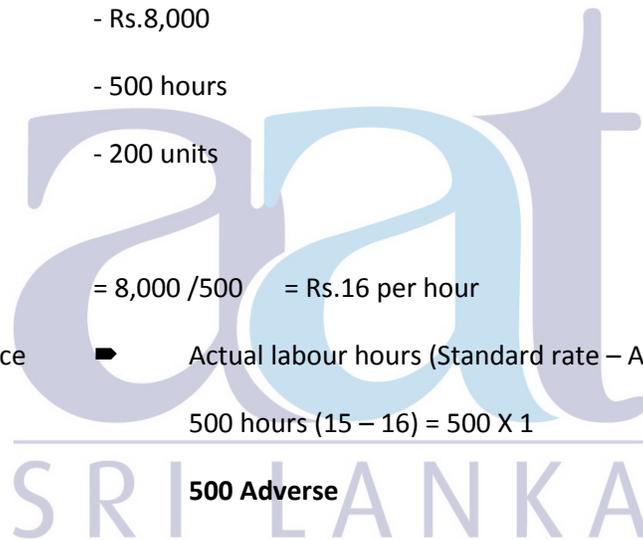
Direct labour hours - 500 hours

Actual production - 200 units

Calculate VOH variances

Actual Rate = 8,000 /500 = Rs.16 per hour

VOH Expenditure Variance ► Actual labour hours (Standard rate – Actual rate)
 500 hours (15 – 16) = 500 X 1



500 Adverse

Actual rate is higher than standard rate, therefore this is adverse variance

VOH efficiency Variance ► Standard rate (Standard labour hours – Actual labour hours)
 15 (200X 2 – 500) = 15 (400 -500) = 15 (100)
1,500 Adverse

Actual hours is higher than standard hours, therefore this is adverse variance.

VOH Cost Variance = (200 x 30) – 8,000 = 6,000 – 8000
 = 2000 Adverse
 Or 500 + 1500
2,000 Adverse

FOH Volume variance = FOH absorption rate (Standard hours of Actual production – Budgeted hours) per hour

120,000/100,000 (21,000 x 5 hours – 100,000)

1.2 per hour (105,000 – 100,000)

6,000 Favourable

Or Standard Rate per unit (Budgeted production – Actual production)

6 (20,000 -21,000)

Rs.6,000 Favourable

FOH Cost Variance = 4,500 Favourable + 6,000 Favourable

10,500 Favourable

Or

Standard FOH Costs – Actual FOH costs

(21,000 x 6) – 115,500

126,000 – 115,500

10,500 Favourable

Example

X Ltd uses the Standard Costing system. In December 2016, the budgeted production/sale were 19,200 units and standard cost card is as follow. Budgeted fixed overhead for the month is Rs.345,600.

	Per unit (Rs.)
Direct Materials (2kg at Rs10/- each)	20
Direct Labour (3 hours at Rs.24/- per hour)	72
Variable overhead (Rs.8 per labour hour)	24
Fixed Overhead (Rs.6 per labour hour)	18
Total	134

Actual information for the month

Direct Material Purchase - Rs.392,000 (40,000kg)
 Actual production - 19,000 units
 Labour cost - Rs.1,364,000 (62,000 hours)
 Variable Overhead cost - Rs.558,000
 Fixed overheads costs - Rs. 361,000

Calculate the following variances

- a. Direct material price variance
- b. Direct material usage variance
- c. Direct material cost variance
- d. Direct labour rate variance
- e. Direct labour efficiency variance
- f. Direct labour cost variance
- g. Variable overhead expenditure variance
- h. Variable overhead efficiency variance
- i. Variable overhead cost variance
- j. Fixed overhead expenditure variance
- k. Fixed over head volume variance.

a) Direct material price variance = Actual Material (Standard price – Actual Price)
 $40,000 (10 - 392,000/40,000)$
 $40,000 (10 - 9.80)$

Rs.8,000 Favourable

b) Direct material usage variance = Standard price (Standard usage – Actual Usage)
 $10 (19,000 \times 2 - 40,000)$
 $10 (38,000 - 40,000) = 10 (2,000)$

20,000 Adverse

c) Direct material cost Variance = $8,000(F) + 20,000(A)$

12,000 Adverse

Or

Standard D/M Cost of Actual Production - Actual DM costs
 $(19,000 \times 20) - 392,000$
 $380,000 - 392,000$
12,000 Adverse

d) Direct labour rate variance = Actual labour hours (Standard rate – Actual rate)
 $62,000 (24 - 1,364,000/62,000)$
 $62,000 (24 - 22) = 62,000 \times 2$
124,000 Favourable

e) Direct labour efficiency variance = Standard rate (Standard hours – Actual hours)
 $24 (19,000 \times 3 - 62,000)$
 $24(57,000 - 62,000) = 24 (5000)$
120,000 Adverse

f) Direct Labour cost Variance = $124,000 (F) + 120,000(A)$
4,000 Favourable

Or

Standard D/L Cost of Actual Production - Actual DL costs
 $19,000 \times 72 - 1,364,000 = 1,368,000 - 1,364,000$
4,000 Favourable

g) VOH expenditure variance = Actual labour hours (Standard rate – Actual rate)
 $62,000 (8 - 558,000/62,000)$
 $62,000 (8 - 9) = 62,000 \times 1$
62,000 adverse

h) VOH efficiency variance = Standard rate (Standard hours – Actual hours)
 $8 (3 \times 19,000 - 62,000)$
 $8 (57,000 - 62,000) = 8 (5,000)$
40,000 Adverse

i) VOH cost variance = 62,000 adverse + 40,000 adverse
102,000 adverse

Or

Standard/Budgeted VOH Cost of Actual Production - Actual VOH costs
 $19,000 \times 24 - 558,000 = 456,000 - 558,000$
102,000 adverse

j) FOH Expenditure Variance = Budgeted FOH costs – Actual FOH Costs
 $345,600 - 361,000$
15,400 adverse

k) FOH Volume variance = FOH absorption rate (Actual production – Budgeted production)
per unit

$$345,600 / 19,200 (19,000 - 19,200) = 18 \times 200$$

3,600 Adverse

L) FOH cost variance = 15,400 A + 3,600A = **19,000 Adverse**

Or

Standard FOH Costs – Actual FOH costs

$$(19,000 \times 18 - 361,000) = 342,000 - 361,000 = \mathbf{19,000 Adverse}$$