

STANDARD COSTING

[Note: Standard costing is usually asked with Budgetary control. So, candidates are advised to refer both of the chapters simultaneously. There are two methods given for reading purpose for formulae. First method notifies easiness of formulae so that it will be easy to remember the formulae; other method is adopted from ICAI Study Material. Candidates can choose according to their requirements.]

SUPER SUMMARY [Reading Method 1]					
Material variance:	SP × SQ (1)	SP × AQ (2)	SP × RSQ (3)	AP × AQ (4)	
SP=Std. Price	Material cost variance		=	(1) – (4)	
SQ=Std. Qty.	Material price variance		=	(2) – (4)	
AQ=Act. Qty.	Material usage variance		=	(1) – (2)	
RSQ=Revised SQ	Material mix variance		=	(3) – (2)	
	Material yield variance		=	(1) – (3)	
Labour variance:	SR × ST (1)	SR × AT (P) (2)	ST × RST (3)	AR × AT (4)	SR × AT (W) (5)
P=Paid; W=Worked	Labour cost variance		=	(1) – (4)	
SR=Std. Rate	Labour rate variance		=	(2) – (4)	
ST = Std. Time	Labour efficiency variance		=	(1) – (2)	
AT=Act. Time	Labour mix variance		=	(3) – (5)	
AR=ActualRate	Labour idle time variance		=	(5) – (2)	
RST=Revised ST					
Variable overhead cost variance:	SR × ST (1)	SR × AT (2)	AR × AT (1)		
SR=Std. Rate	Variable Overheads Cost Variance		=	(1) – (4)	
ST=Std. Time	Variable Overheads Expenditure Variance		=	(2) – (4)	
AT=Act. Time	Variable Overheads Efficiency Variance		=	(1) – (2)	
AR=ActualRate	$\left[\text{Where, Standard rate/hour (SR)} = \frac{\text{Budgeted variable OH}}{\text{Budgeted Hours}} \right]$				
Fixed overhead cost variance:	SR × ST (1)	SR × AT (W) (2)	ST × RBT (3)	SR × BT (4)	SR × AT (P) (5)
P=Paid	Fixed overhead cost variance		=	(1) – (5)	
W=Worked	Fixed overhead budgeted variance		=	(4) – (5)	
SR=Std. Rate	Fixed overhead efficiency variance		=	(1) – (2)	
ST=Std. Time	Fixed overhead volume variance		=	(1) – (4)	
AT=Act. Time	Fixed overhead capacity variance		=	(2) – (3)	
AR=ActualRate	Fixed overhead calendar variance		=	(3) – (4)	
BT=Budgeted Time					
RBT=Revised BT					
Sales value variance:	BP × BQ (1)	BP × AQ (2)	BP × BM (3)	AP × AQ (4)	
BP=Bud. Price	Sales value variance		=	(4) – (1)	
BQ=Bud. Qty.	Sales price variance		=	(4) – (2)	
AQ=Act. Qty.	Sales volume variance		=	(2) – (1)	
BM=Bud. Mix	Sales mix variance		=	(2) – (3)	
AP=Act. Price	Sales quantity variance		=	(3) – (1)	
Note: Actual margin per unit (AMPU) = Actual sale price – Selling cost per unit Budgeted margin per unit (BMPU) = Budgeted sale price – Selling price per unit					

Control Ratio:	Efficiency Ratio = $\frac{\text{Std. hrs. for actual output}}{\text{Actual hrs. worked}} \times 100$
	Capacity Ratio = $\frac{\text{Actual hrs. worked}}{\text{Budgeted hrs.}} \times 100$
	Activity Ratio = $\frac{\text{Actual hrs. worked}}{\text{Budgeted hrs.}} \times 100$
	Verification: Activity ratio = Efficiency Ratio $\times$ Capacity Ratio

OR

SUPER SUMMARY [Reading Method 2 (Study Module Method)]		
Material Variance	Material cost variance	= SC – AC = (SQ $\times$ SQ) – (AQ $\times$ AP)
	Material price variance	= AQ (SP – AP)
	Material usage variance	= SP (SQ – AQ)
	Material mix variance	= SP (RSQ – AQ)
	Material yield variance	= (AY – SY for act. input) $\times$ $\frac{\text{Std. material cost}}{\text{p.u. of output}}$
	Material revised usage variance (calculation instead of Material yield variance)	= $\left(\frac{\text{Std. Qty. for}}{\text{Actual output}} - \frac{\text{Revised Std. Qty.}}{\text{Qty.}} \right) \times \text{Std. Price}$
Labour Variance	Labour cost variance	= SC – AC = (SH $\times$ AR) – (AH $\times$ AR)
	Labour rate variance	= AH (SR – AR)
	Labour efficiency or time variance	= SR (SH – AH)
	Labour mix or gang composition variance	= SR (RSH – AH)
	Labour idle time variance	= Idle hours $\times$ SR
	Labour yield variance	= $\left(\frac{\text{Actual Std. output for}}{\text{output}} - \frac{\text{Actual input}}{\text{Actual input}} \right) \times \frac{\text{Std. labour cost}}{\text{per unit of input}}$
	Labour revised efficiency variance (instead of Labour yield variance)	= $\left(\frac{\text{Std. hrs. of}}{\text{Actual output}} - \frac{\text{Revised Std. hrs.}}{\text{Std. hrs.}} \right) \times \text{Std. rate}$
	Note: LCV = LRV + LMV + ITV + LYV LCV = LRV + LEV + ITV LEV = LMV, LYV (or) LREV	
Overhead Variance	Std. overhead rate (per hr.) variance	= $\frac{\text{Budgeted Overheads}}{\text{Budgeted Hours}}$
	Std. hrs. for actual output variance	= Budgeted hrs. $\times$ $\frac{\text{Actual output}}{\text{Budgeted output}}$
Variable Overhead Variance	Variable OH cost variance	= Std. OH – Actual OH
	Variable OH expenditure variance	= Absorbed OH – Actual variable OH
	Variable OH efficiency variance	= Std. OH – Absorbed OH = $\left[\frac{\text{Std. hrs. for}}{\text{Actual output}} - \frac{\text{Actual}}{\text{Hours}} \right] \times \text{Std. rate for Variable OH}$
Fixed Overhead Variance	Fixed OH cost variance	= Std. OH – Actual OH
	Fixed OH expenditure variance	= Budgeted OH – Actual OH
	Fixed OH efficiency variance (hr. based)	= Standard OH (units based) – Absorbed OH
	Fixed OH volume variance	= Std. OH – Budgeted OH = $\left[\frac{\text{Std. hrs. for}}{\text{Actual output}} - \frac{\text{Budgeted}}{\text{Hours}} \right] \times \text{Std. rate}$
	Fixed OH capacity variance	= Absorbed OH – Budgeted OH
	Fixed OH calendar variance	= $\left[\frac{\text{Revised}}{\text{budgeted hrs.}} - \frac{\text{Budgeted}}{\text{hours}} \right] \times \text{Std. rate / hrs.}$

	Note: When there is calendar variance capacity variance is calculated as follows : $\text{Capacity variance} = \left[\frac{\text{Actual hrs.}}{(\text{Revised})} - \frac{\text{Budgeted hrs.}}{(\text{Revised})} \right]$	
Verification: (i) Variable OH cost variance = Variable OH Expenditure variance + Variable OH Efficiency variance (ii) Fixed OH cost variance = Fixed OH Expenditure variance + Fixed OH volume variance (iii) Fixed OH volume variance = Fixed OH Efficiency variance + Capacity variance + Calander variance		
Sales Variance	Turnover Method: OR Sales value method	
	Sales value variance	= Actual sales – Budgeted sales
	Sales price variance	= [Actual Price – Std. price] × Actual quantity = Actual sales – Std. sales
	Sales volume variance	= [Actual qty. – Budgeted qty.] × Std. price = Standard sales – Budgeted sales
	Sales mix variance	= [Actual qty. – Revised std. qty.] × Std. rate = Std. sales – Revised sales
	Sales qty. variance	= [Revised Std. variance – Bud. qty.] × Std. price = Revised Std. sales – Budgeted sales
Sales Variance	Profit Method	
	Total sales margin variance	= Actual profit – Budgeted profit $= \left\{ \frac{\text{Actual}}{\text{qty.}} \times \frac{\text{Actual}}{\text{profit p. u.}} \right\} - \left\{ \frac{\text{Budgeted}}{\text{qty.}} \times \frac{\text{Standard}}{\text{profit p. u.}} \right\}$
	Sales margin price variance	= Actual profit – Std. profit $= \left\{ \frac{\text{Actual}}{\text{profit p. u.}} - \frac{\text{Standard}}{\text{profit p. u.}} \right\} \times \text{Actual qty. of sales}$
	Sales margin volume variance	= Std. profit – Budgeted Profit $= \left\{ \frac{\text{Actual}}{\text{qty.}} - \frac{\text{Budgeted}}{\text{qty.}} \right\} \times \text{Std. profit p.u.}$
	Sales margin mix variance	= Std. profit – Revised Std. profit $= \left\{ \frac{\text{Actual}}{\text{qty.}} - \frac{\text{Revised}}{\text{Std. qty.}} \right\} \times \text{Std. profit p.u.}$
	Sales margin quantity variance	= Revised std. profit – Budgeted profit $= \left\{ \frac{\text{Revised}}{\text{Std. qty.}} - \frac{\text{Budgeted}}{\text{qty.}} \right\} \times \text{Std. profit p.u.}$

ABBREVIATIONS	
SC = Standard Cost	RSQ = Revised Standard Quantity
AC = Actual Cost	SR = Standard Rate
SP = Standard Price	ST = Standard Time
SQ = Standard Quantity	AR = Actual Rate
AP = Actual Price	AT = Actual Time
AQ = Actual Quantity	RST = Revised Standard Time
AY = Actual Yield	BP = Budgeted Price,
SY = Standard Yield	BQ = Budgeted Quantity
RSQ = Revised Standard Quantity	RBT = Revised Budgeted Time
SR = Standard Rate	BMPU = Budgeted Margin per Unit
ST = Standard Time	AMPU = Actual Margin per Unit

Reconciliation Statement: <i>Reconciliation statement is prepared to reconcile the actual profit with the budgeted profit.</i>				
Particulars		Favourable	Unfavourable	
Budgeted profit:	Add: Favourable variances Less: Unfavourable variances	...	(...)	...
Sales variance:	Sales price variance Sales mix variance Sales qty. variance			
Cost variance				
Material:	Cost variance Usage variance Mix variance			
Labour:	Rate variance Mix variance Efficiency variance Idle time variance			
FOH variance:	Expenditure variance Efficiency variance Capacity variance Calendar variance			

FIVE STAR QUESTIONS

- Q. 1:** A company manufacturing two products uses standard costing system. The following data relating to April, 2011 have been furnished to you:

Standard cost per unit	A (₹)	B (₹)
Direct material	2	4
Direct wages	8	6
Factory overheads	16	12
Total	26	22
Unit processed/in process:		
Beginning of the month: All materials applied and 50% complete in respect of labour and overheads	4,000	12,000
End of the month: All materials applied and 80% complete in respect of labour and overheads	8,000	16,000
Units completed and transferred to warehouse during the month	16,000	20,000

The following were the actual costs recorded during the month:

Direct materials purchased at standard price amount to ₹ 2,00,000 and actual cost of which ₹ 2,20,000. Direct materials used for consumption at standard price amount to ₹ 1,75,000.

Direct wages for actual hours worked at standard wages rate were ₹ 4,20,000 and at actual wage rates were ₹ 4,12,000.

Fixed overheads budgeted were ₹ 8,25,000 and actual fixed overheads incurred were ₹ 8,50,000.

Required:

- Direct Material Price Variance at the point of consumption and at the point of purchase.
- Direct Material Usage Variance.
- Direct Wages Rates and Efficiency Variance.
- Fixed Overheads Volume and Expenditure Variance.
- Standard Cost of WIP at the end of the months. **(Final, May 2000, 15 marks)**

[Hint: You may use **average cost method** to analyses.]

- [Ans.: (i) Direct Material Price Variance at the point of consumption and at the point of purchase = ₹ 17,500 (A)
(ii) Direct Material Usage Variance = ₹ 1,000 (F)
(iii) Direct Wages Rates and Efficiency Variance = ₹ 8,000 (A)
(iv) Fixed Overheads Volume and Expenditure Variance = ₹ 1,11,400
(v) Standard Cost of WIP at the end of the months = ₹ 2,20,800]

- Q. 2:** TQM Ltd. has furnished the following information for the month ending 30th June, 2007:

	Budgeted	Actual	Variance
Unit produced and sold	80,000	72,000	
Sales (₹)	3,20,000	2,80,000	40,000 (A)
Direct material (₹)	80,000	73,600	6,400 (A)
Direct wages (₹)	1,20,000	1,04,600	15,200 (F)

Variable overheads (₹)	40,000	37,600	2,400 (F)
Fixed overheads (₹)	40,000	39,200	800 (F)
Total cost	2,80,000	2,55,200	

The Standard costs of the products are as follows:

	₹ (per unit)
Direct material (1 kg. @ ₹ 1 per kg.)	1.00
Direct wages (1 hr. @ ₹ 1.50)	1.50
Variable overheads (1 hr. @ ₹ 0.50)	0.50

Actual results for the month showed that 78,400 kg of material were used and 70,400 labour hours were recorded. Do as per following instructions:

- Prepare Flexible budget for the month and compare with actual results.
- Calculate material, labour, sales price, variable overhead and fixed overhead expenditure variances and sales volume (profit) variance. **(PCC-May 2008, 5 + 10 = 15 Marks)**

[Ans.: (i) Comparison of Actual with budgeted
Sales: ₹ 8,000 (A)
Direct material: ₹ 1,600 (A)
Direct wages: ₹ 3,200 (F)
Variable OH: ₹ 1,600 (A)
Fixed OH: ₹ 800 (F)
Net profit: ₹ 7,200 (A)
(ii) Variances:
Sales price variance: ₹ 8,000 (A)
Direct material cost variance: ₹ 1,600 (A)
Direct material price variance: ₹ 4,800 (F)
Direct material usage variance: ₹ 6,400 (A)
Direct labour cost variance: ₹ 3,200 (F)
Direct labour rate variance: ₹ 800 (F)
Direct labour efficiency variance: ₹ 4,000 (A)
Variable OH variance: ₹ 1,600 (A)
Fixed OH variance: ₹ 800 (A)
Sales volume (profit) variance: ₹ 4,000 (A)]

Q. 3: Calculate efficiency and capacity ratio from the following figures: **(PCC-Nov 2007, 2 marks)**

Budgeted production	80 units
Actual production	60 units
Standard time per unit	8 hours
Actual hours worked	500

[Ans.: Efficiency Ratio = 96%
Capacity Ratio = 78.12%]

Ego and attitude is a small word that can create big differences