Lectures Note

COST ACCOUNTING

Chapter 10. Standard Costing (Part -1)

Sari Anggraini

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Fakultas Ekonomi dan Bisnis
Universitas Al-Azhar Indonesia
Jl. Sisingamangaraja Kebayoran Baru - Jakarta Selatan

Direktorat Pembelajaran dan Kemahasiswaan, Kementerian Pendidikan Kebudayaan, Riset dan Teknologi

Chapter X

Standard Costing, Target Costing and Kaizen Costing (Part -1)

After studying this chapter, you should be able to:

1. ***Explain the difference between budget, standard cost and target cost***
2. ***Determine the standard cost variances***
3. ***Explain the method of target costing***
4. ***Explain about kaizen costing and the differences with standard costing***
5. ***Journalize the transactions needed***

Study objectives of this chapter will give you the concepts and implementations of standard cost, target cost and kaizen cost

A. STANDARD COSTING

A standard cost is the predetermined cost of manufacturing a single unit or a specific quantity of product during a specific period.

A standard cost has two components:

1. A physical standard (a standard cost or rate per unit of input)
2. A price standard (a standard cot or rate per unit of input)

A standard cost system can be used in connection with either process or job order cost accumulation

B. STANDARD COSTS AND BUDGETS

Standard costs are used for preparing the budget. Unit standard cost is multiplied by total units to be produces to determine budgeted costs.

Exhibit 10.1 Distinguish actual vs standard vs budget

C. DETERMINING STANDARD COST VARIANCES[12]

A. Material Variances

1. Material Price Variance

Material Price Variance (MPV) = (AMP – SMP) x AMQ

Favorable Variance = AMP < SMP

Unfavorable Variance = AMP > SMP

AMP = Actual Material Price

SMP = Standard Material Price

AMQ = Actual Material Quantity

2. Material Quantity Variance or Material Usage Variance or Efficiency Variance

Material Quantity Variance (MQV) = (AMQ – SMQ) x SMP

Favorable Variance = AMQ < SMQ

Unfavorable Variance = AMQ > SMQ

SMQ = Standard Material Quantity

B. Labor Variances

1. Labor Rate Variance

Labor Rate Variance (LRV) = (ALR – SLR) x ALH

Favorable Variance = ALR < SLR

Unfavorable Variance = ALR > SLR

ALR = Actual Labor Rate

SLR = Standard Labor Rate

ALH = Actual Labor Hour

2. Labor Efficiency (Quantity or Time) Variance

Labor Efficiency Variance (LEV) = (ALH – SLH) x SLR

Favorable Variance = ALR < SLR

Unfavorable Variance = ALR > SLR

SLH = Standard Labor Hour

C. Factory Overhead Variances

Two – Variance Analysis

1. Controllable Variance

Controllable Variance = Actual Overhead Costs – {(Normal Capacity x Fixed Rate) + (Standard Capacity x Variable Rate)}

Favorable Variance = Actual Overhead Costs < Budgeted Overhead Costs at Standard Capacity

2. **Volume Variance**

Volume Variance = (Normal Capacity – Standard Capacity) x Fixed Rate

Favorable Variance = Normal Capacity < Standard Capacity

Three – Variance Analysis

1. **Spending Variance (Budget Variance)**

Spending Variance = Actual Overhead Costs – {(Normal Capacity x Fixed Rate) + (Actual Capacity x Variable Rate)}

Favorable Variance = Actual Overhead Costs < Budgeted Overhead Costs at Actual Capacity

2. **Capacity Variance**

Capacity Variance = (Normal Capacity – Actual Capacity) x Fixed Rate

Favorable Variance = Normal Capacity < Actual Capacity

3. **Overhead Efficiency Variance**

Overhead Efficiency Variance = (Actual Capacity – Standard Capacity) x Total Overhead Rate

Favorable Variance = Actual Capacity < Standard Capacity

Four – Variance Analysis

1. **Spending Variance (Budget Variance**
2. **Capacity Variance**
3. **Variable Efficiency Variance**

Variable Efficiency Variance = (Actual Capacity – Standard Capacity) x Variable Rate

4. **Fixed Efficiency Variance**

Fixed Efficiency Variance = (Actual Capacity – Standard Capacity) x Fixed Rate

Illustration

The data forms Jumper Manufacturing Co. at December 2023 are as follows:

a. Standard costs per unit product are:

- Raw Materials 4 kg @$20 = $ 80
- Labor Costs 2 Direct Labor Hours @ $10 = 20
- Overhead Costs (Variable) 2 Hours @ $ 15 = 30
- Overhead Costs (Fixed) 2 Hours @ $10 = 20

Total $150

b. Normal capacity 10,000 units of products or 20,000 direct labor hours

c. 9,500 units are completed with the beginning work in process inventory of 2,000 units (100% RM, 60% CC) and ending work in process inventory of 1,000 units (100% RM, 50% CC)

d. Raw materials are purchased $1,125,000 for 45,000 kg in which 35,000 kg of them has been used

e. Labor costs are incurred $225,000 for 15,000 direct labor hours

f. The actual overhead costs are $ 400,000

Required:

1. Calculate the variance of each manufacturing cost elements. Overhead costs are using four-variance analysis. FIFO method is used to determine the equivalent units.
2. Prepare journal entries. Overhead variances are close to Cost of Good Sold.

RAW MATERIAL VARIANCES

1. Material (purchase) Price Variance = (25^{1} – 20) * 45,000

= $225,000 UF

2. Material (usage) Price Variance = (25^{1} – 20) * 35,000

= $175,000 UF

3. Material Quantity Variance = (35,000 – 34,000[2]) * 20

= $20,000 UF

[1] *$1,125,000 / 45,000 units*

[2] *Equivalent Units = 9,500 + 1,000 (100%) – 2,000 (100%) = 8,500*

Quantity Standard = 8,500 x 4 kg = 34,000

LABOR COST VARIANCES

1. Labor Rate Variance = (15^{3} – 10) * 15,000

= $75,000 UF

2. Labor Efficiency Variance = (15,000 – 17,600[4]) * 10

= $26,000 F

[3] *$225,000 / 15,000 hours*

[4] *Equivalent Units = 9,500 + 1,000 (50%) – 2,000 (60%) = 8,800*

Quantity Standard = 8,800 x 2 hours = 17,600

FACTORY OVERHEAD VARIANCES

1. Spending Variance:

Actual Overhead Costs	$400,000
Budgeted Fixed Overhead: (20,000 x 10)	(200,000)
Actual Variable Overhead Cost	$200,000
Budgeted Variable Overhead: (15,000 x 15)	(225,000)
Spending Variance	$ (25,000) F

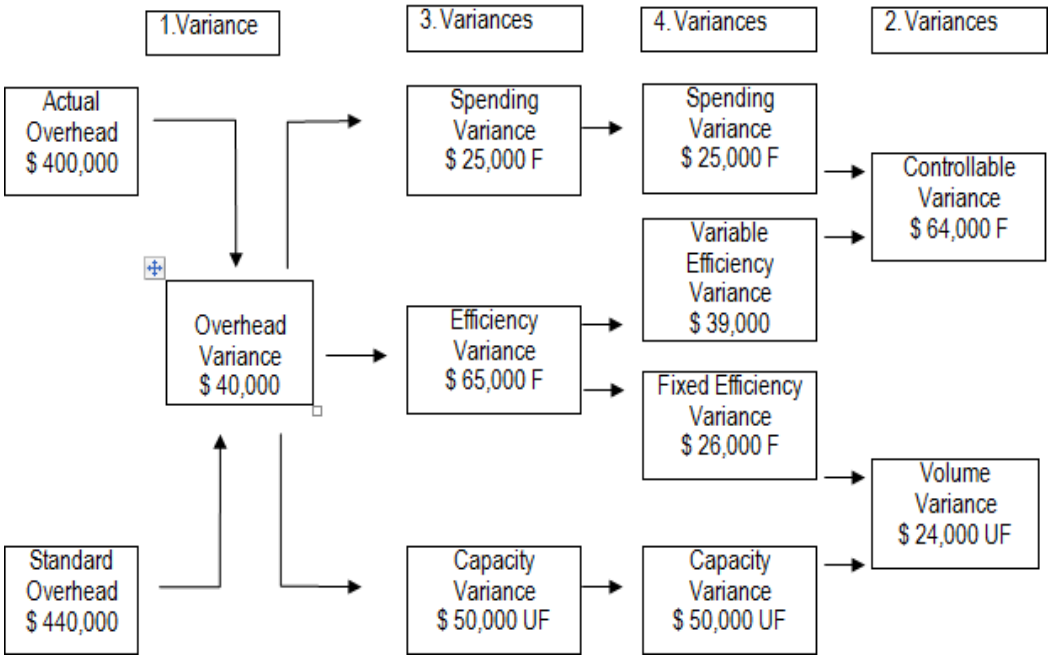
2. Capacity Variance = (20,000 – 15,000) * 10 = $ 50,000 UF
3. Variable Overhead Efficiency Variance:

(15,000 – 17,600) * 15 = $ 39,000 F

4. Fixed Overhead Efficiency Variance:

(15,000 – 17,600) * 10 = $ 26,000 F

OVERHEAD VARIANCES DIAGRAM



JOURNAL ENTRIES

RAW MATERIALS

Material Price Variance is recorded when purchased

1. To record the material purchase

Raw Material Inventory	*900,000*		
Material Price Variance	*225,000*		
Cash / Account Payable			*1,125,000*

2. To record the usage of raw materials

WIP Inventory	*680,000*		
Material Quantity Variance		*20,000*	
Raw Material Inventory			*700,000*

The limitation of this method, all material price variances are charged to current period expenses while a part of raw material purchased are still in the ending raw material inventory.

Material Price Variance is recorded when used

1. To record the material purchase

Raw Material Inventory	*1,125,000*	
Cash / Account Payable		*1,125,000*

2. To record the usage of raw materials

WIP Inventory	*680,000*	
Material Price Variance	*175,000*	
Material Quantity Variance	*20,000*	
Raw Material Inventory		*875,000*

The limitation of this method a material price variance of ending raw material inventory can not be known. Also, material subsidiary ledger are needed because material inventory is recorded using the actual costs.

Material Price Variance is recorded when purchased and used

1. To record the material purchase

Raw Material Inventory	*900,000*	
Material Purchase Price Variance	*225,000*	
Cash / Account Payable		*1,125,000*

2. To record the material usages

a). To reverse the material purchase price variance

Material Usage Price Variance	*175,000*	
Material Purchase Price Variance		*175,000*

b). To record the material usage

WIP Inventory	*680,000*	
Material Quantity Variance	*20,000*	
Raw Material Inventory		*700,000*

The balance of material purchase variance will be treated as a part of ending raw material inventory (Product costs) and will appear in the balance sheet. Only material usage price variance goes to the income statement as a period cost.

LABOR COST

1. To record the payment of labor costs

Payroll	*225,000*	
Payroll payable		*225,000*

2. To record the application of labor cost

WIP Inventory	*176,000*	
Labor Rate Variance	*75,000*	
Labor Efficiency variance		*26,000*
Payroll		*225,000*

FACTORY OVERHEAD COSTS

1. To record the actual over head costs

Overhead Control	*400,000*	
Any account Credited		*400,000*

2. To apply the overhead costs to the products

WIP Inventory (17,600 x 25)	*400,000*	
Capacity Variance	*50,000*	
Spending Variance		*25,000*
Variable Overhead Efficiency Var		*39,000*
Fixed Overhead Efficiency Var		*26,000*
Factory Overhead Control		*400,000*

3. To close the overhead Variances

Spending Variance	*25,000*	
Variable Overhead Efficiency Var	*39,000*	
Fixed Overhead Efficiency Var	*26,000*	
Capacity Variance		*50,000*
Cost Of Goods Sold		*40,000*

4. To record the finished goods

Finished Goods Inventory (9,500 x 150)	*1,425,000*	
WIP Inventory		*1,425,000*

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