Standard Costs and Variance Analysis

Objectives

1. Explain how standard costs are developed.
2. Calculate and interpret variances for direct material.
3. Calculate and interpret variances for direct labor.

Standard Costs

Standard cost refers to expected costs under anticipated conditions.

- Standard cost systems allow for comparison of standard versus actual costs.
- Differences are referred to as standard cost variances.
- Variances should be investigated if significant.

Standard Costing: Process of establishing the standard cost

Development of Standard Costs

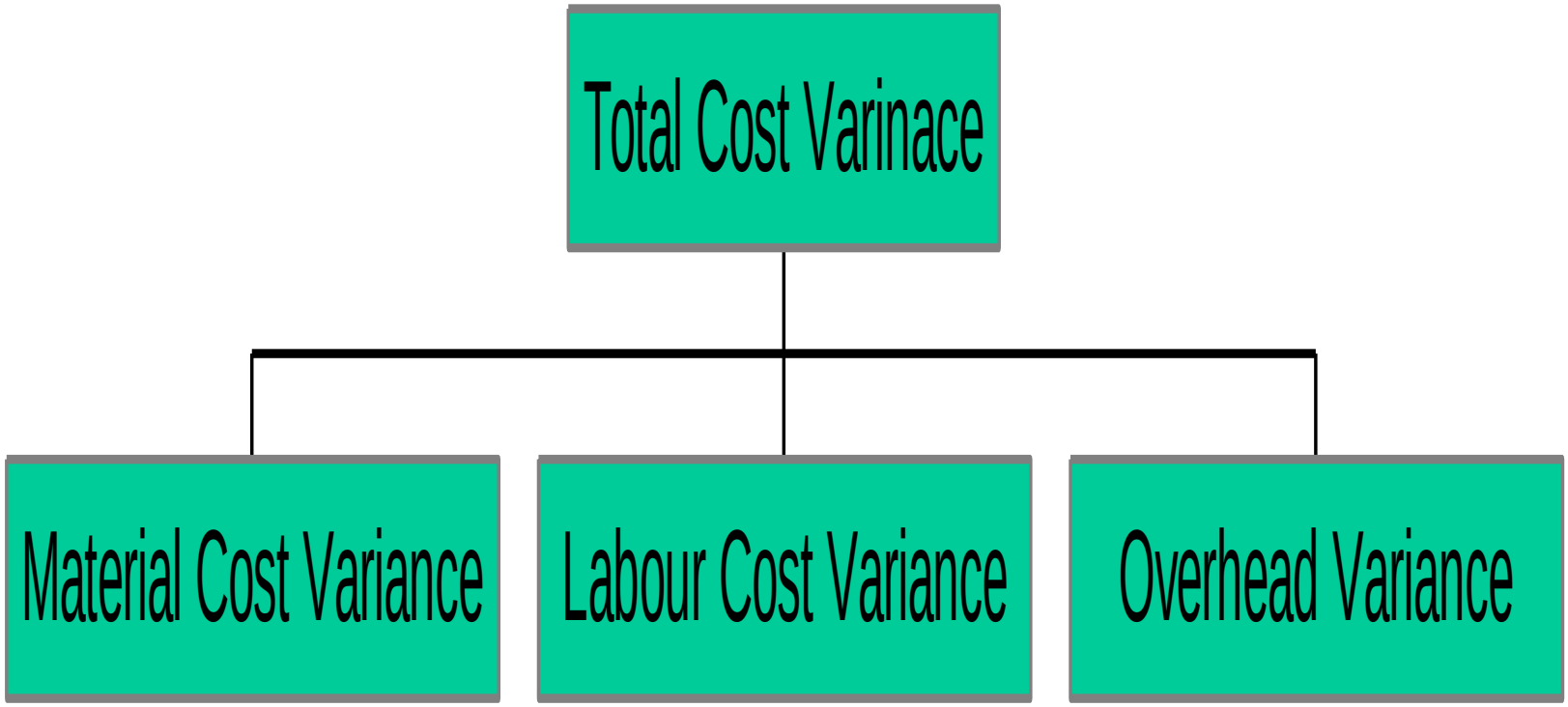
1. Standard costs are developed in a variety of ways:
   a. Specified by formulas.
   b. Developed from price lists provided by suppliers.
   c. Determined by time studies conducted by industrial engineers.
   d. Developed from analyses of past data.

Ideal Versus Attainable Standards

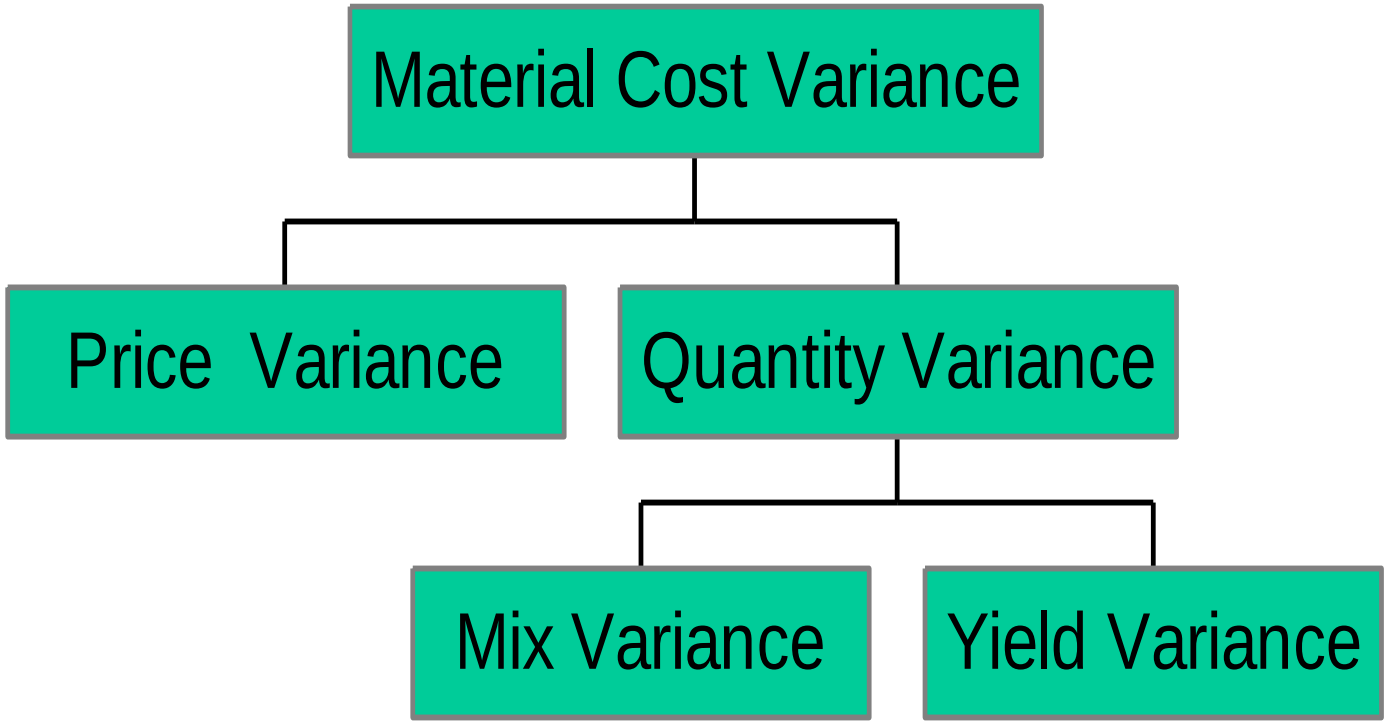
Two schools of thought:

1. Ideal standards (perfection standards): developed under the assumption that no obstacles to the production process will be encountered.
2. Attainable Standards: developed under the assumption that there will be occasional problems in the production process.

Variance Components



Variance Components



Material Variance

When output is not given:

1. Material Cost Variance: Total Standard Material Cost-Total Actual Material Cost
2. Material Price Variance: AQ[SP-AP]
3. Material Quantity Variance: SP[SQ-AQ]

where

AQ----Actual Quantity

SP----Standard Price

AP----Actual Price

SQ----Standard Quantity

Material Variance

When output is given

1. Material cost variance:

   $\frac{\text{Standard cost}}{\text{Standard Output}}$ X Actual Output –Total actual material cost

2. Material Price variance: AQ[SP-AP]

3. Material Quantity Variance:

SP[$\frac{\text{Standard Qty. of A}}{\text{Standard Output}}$ X Actual Output –Actual Qty.of A]

Material Variance

4. Material Mix Variance:

SP[Standard Qty. of A X Total Actual Qty-Actual Qty. of A]

Total Standard Quantity

5.Material Yield Variance:

Std Cost[Actual Yield-Standard output X Total Actual Qty]

Std Output Total Standard Quantity

Questions

1)From the data calculate material variances:

	Standard	Actual
• A	40 units@50/unit	50 units@50/unit
• B	60 units@40/unit	60 units@45/unit

2) The Std. cost of a certain chemical mixture is:

40%material A at Rs. 40/ton

60% material B at Rs. 30/ton

A Standard loss of10% is expected in production.

Questions (contd…)

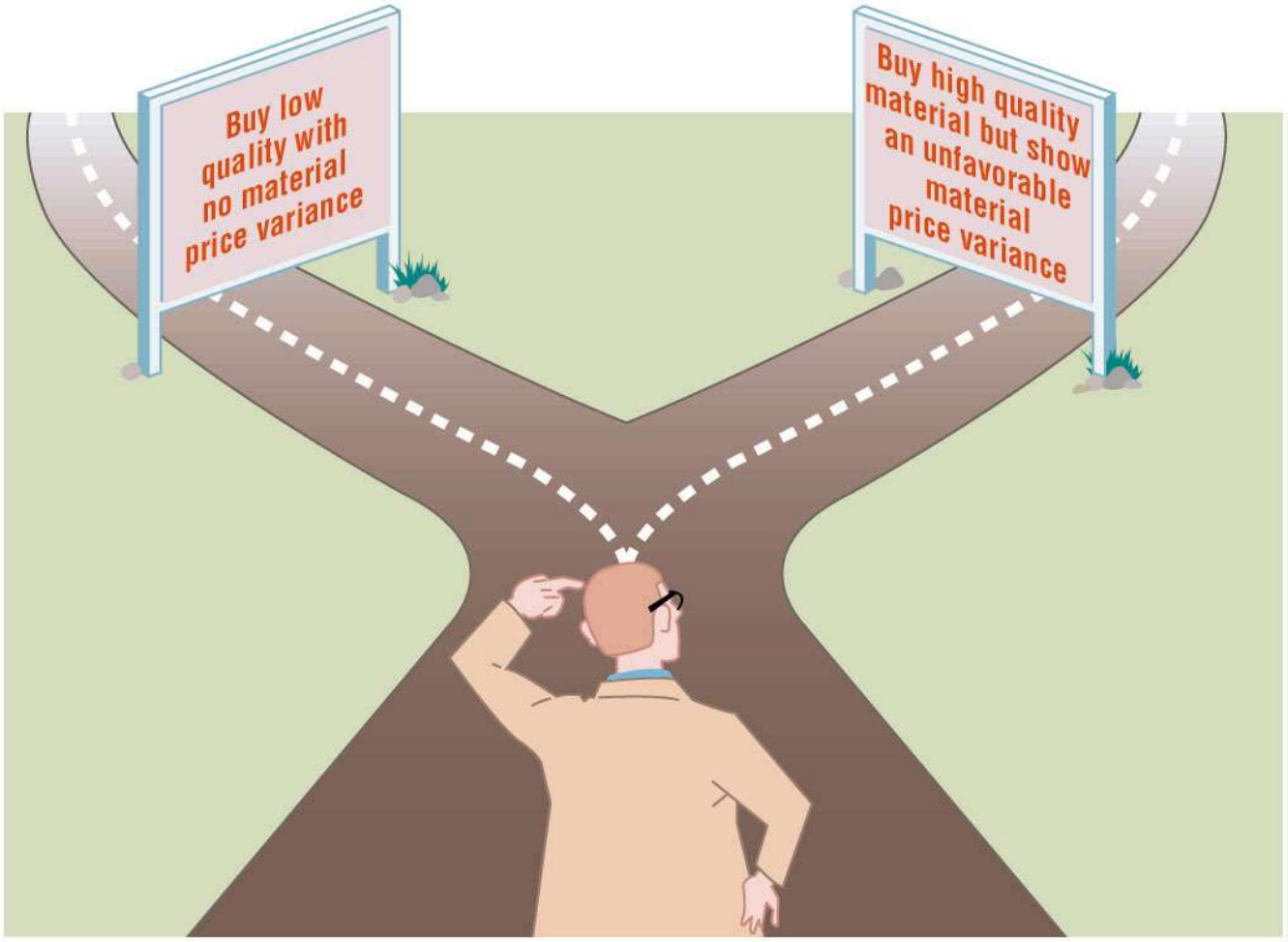
Actual cost of used is:

90 tons of material A @42/ton

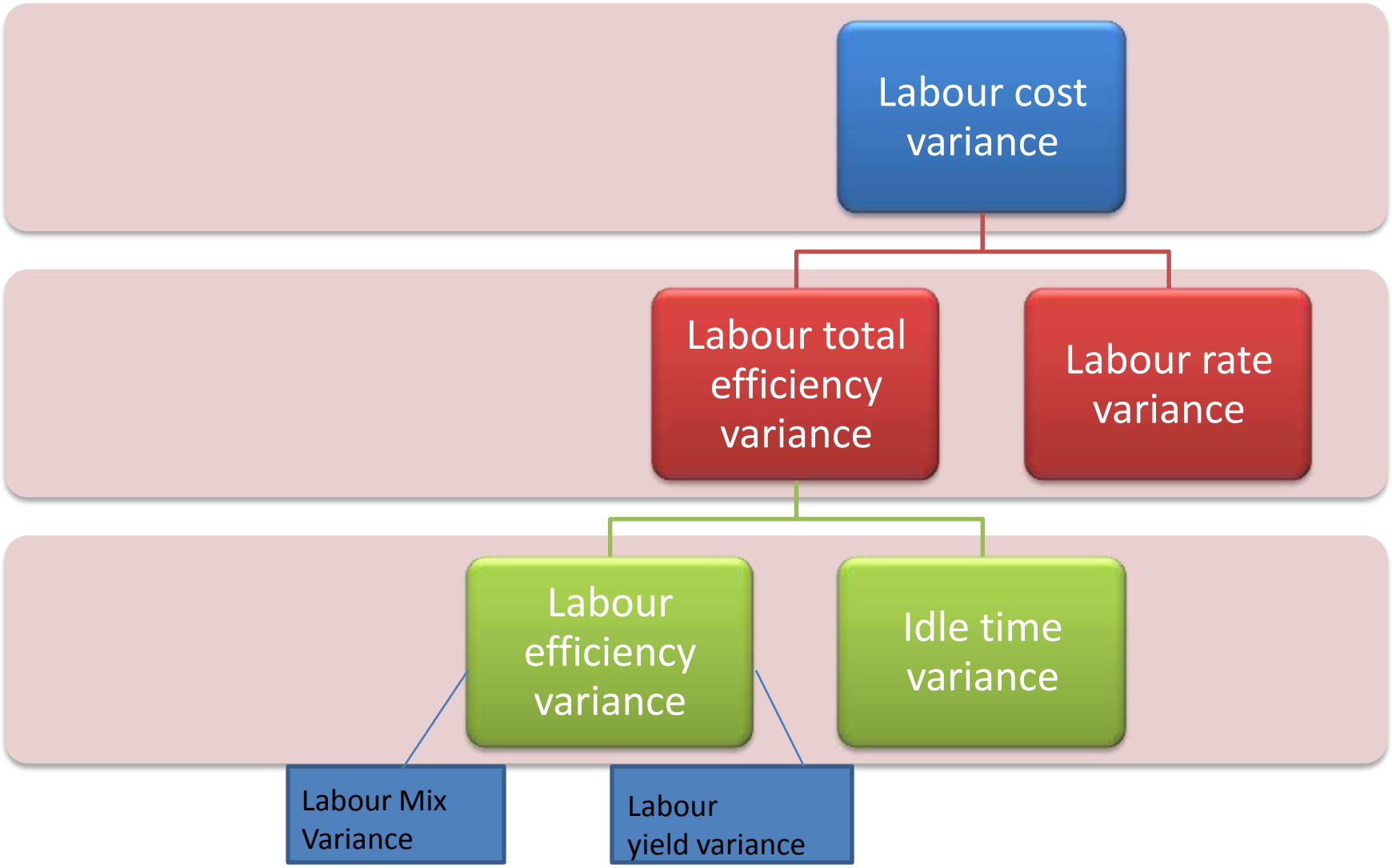
160 tons of material B @28/ton

Actual output is 230 tons

You Get What You Measure



Labour Variance



Labour Varinace

When output is not given:

1. Labour Cost Variance: Total Standard Labour Cost-Total Actual Labour Cost
2. Labour Rate Variance: AH[SR-AR]
3. Labour Efficiency Variance: SR[SH-AH]

where

AH---Actual Hours

SR---Standard Rate

AR---Actual Rate

SH---Standard Hours

Labour Varinace

When output is given

1. Labor cost variance:

   Standard cost / Standard output X Actual Output – Total actual labour cost

2. Labour Rate Variance: AH[SR-AR]

3. Labour Efficiency Variance:

SR[Standard Hrs. of A / Standard Output X Actual Output – Actual Hrs.A]

Labour Varinace

4. Labour Mix Variance:

SR[Standard Hrs. of A X Total Actual Hrs -Actual Hrs. of A]
Total Standard Hrs

5.Labour Yield Variance:

SR[Actual Yield-Standard output X Total Actual Hrs.
Total Standard Hrs.

Where SR=Standard Cost
Standard Output

6. Idle Time Variance:

Idle Time X Standard Rate

When Idle time=0,then LTEV=LEV