# Flexible Budgets 

## and

## Standard Costing <br> Variance Analysis

## Static Budgets and Performance Reports

CheeseCo
,
Static
Budget
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Actual
Results
Variances
Machine hours
10,000
8,000

$$
2,000 \mathrm{U}
$$

Variable costs

| Indirect labor | $\$ 40,000$ | $\$ 34,000$ | $\$ 6,000 \mathrm{~F}$ |
| :--- | ---: | ---: | ---: |
| Indirect materials | 30,000 | $\mathbf{2 5 , 5 0 0}$ | $4,500 \mathrm{~F}$ |
| Power | $\mathbf{5 , 0 0 0}$ | $\mathbf{3 , 8 0 0}$ | $\mathbf{1 , 2 0 0}$ F |

Fixed costs


## Preparing a Flexible Budget

|  | Cost Formula per Hour | Total | Flexible Budgets |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Fixed Cost | $\begin{aligned} & \hline 8,000 \\ & \text { Hours } \end{aligned}$ | $10,000$ <br> Hours | $\begin{aligned} & 12,000 \\ & \text { Hours } \end{aligned}$ |
| Machine hours |  |  | 8,000 | 10,000 | 12,000 |
| Variable costs |  |  |  |  |  |
| Indirect labor | \$ 4.00 |  | \$ 32,000 | \$ 40,000 | \$ 48,000 |
| Indirect material | 3.00 |  | 24,000 | 30,000 | 36,000 |
| Power | 0.50 |  | 4,000 | 5,000 | 6,000 |
| Total variable cost | \$ 7.50 |  | \$ 60,000 | \$ 75,000 | \$ 90,000 |
| Fixed costs |  |  |  |  |  |
| Depreciation |  | \$ 12,000 | \$ 12,000 | \$ 12,000 | \$ 12,000 |
| Insurance |  | 2,000 | 2,000 | 2,000 | 2,000 |
| Total fixed cost |  |  | \$ 14,000 | \$ 14,000 | \$ 14,000 |
| Total overhead costs |  |  | \$ 74,000 | \$ 89,000 | \$ 104,000 |

## Flexible Budget Performance Report

CheeseCo

|  | Cost Formula per Hour | Total Fixed Cost | Flexible Budget | Actual Results | Variances |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Machine hours |  |  | 8,000 | 8,000 | 0 |
| Variable costs |  |  |  |  |  |
| Indirect labor | \$ 4.00 |  | \$ 32,000 | \$ 34,000 | \$ 2,000 U |
| Indirect material | 3.00 |  | 24,000 | 25,500 | 1,500 U |
| Power | 0.50 |  | 4,000 | 3,800 | 200 F |
| Total variable cost | \$ 7.50 |  | \$ 60,000 | \$ 63,300 | \$ 3,300 U |
| Fixed costs |  |  |  |  |  |
| Depreciation |  | \$ 12,000 | \$ 12,000 | \$ 12,000 | \$ 0 |
| Insurance |  | 2,000 | 2,000 | 2,050 | 50 U |
| Total fixed cost |  |  | \$ 14,000 | \$ 14,050 | 50 U |
| Total overhead costs |  |  | \$ 74,000 | \$ 77,350 | \$ 3,350 U |

## Static Budgets and Performance



|  |  | Static udget | Actual Results | Variances |
| :---: | :---: | :---: | :---: | :---: |
| Machine hours |  | 10,000 | 8,000 | 2,000 U |
| Variable costs |  |  |  |  |
| Indirect labor | \$ | 40,000 | \$ 34,000 | \$6,000 F |
| Indirect materials |  | 30,000 | 25,500 | 4,500 F |
| Power |  | 5,000 | 3,800 | 1,200 F |
| Fixed costs |  |  |  |  |
| Depreciation |  | 12,000 | 12,000 | 0 |
| Insurance |  | 2,000 | 2,050 | 50 U |
| Total overhead costs | \$ | 89,000 | \$ 77,350 | \$11,650 F |

## Flexible Budget Performance Report

## Overhead Variance Analysis

| Static Overhead Budget at 10,000 Hours | Flexible Overhead Budget at 8,000 Hours | Actual Overhead at 8,000 Hours |
| :---: | :---: | :---: |
| \$ 89,000 | \$ 74,000 | \$ 77,350 |

This $\mathbf{\$ 1 5 , 0 0 0 F}$ variance is due to lower activity.

Cost control
This \$3,350U
variance is due
to poor cost control.

## Standard Cost Card - Variable Production Cost

## A standard cost card for one unit of product might look like this:

|  | A | B | A x B |
| :---: | :---: | :---: | :---: |
| Inputs | Standard Quantity or Hours | Standard Price or Rate | Standard <br> Cost per Unit |
| Direct materials | 3.0 lbs. | \$ 4.00 per lb. | \$ 12.00 |
| Direct labor | 2.5 hours | 14.00 per hour | 35.00 |
| Variable mfg. overhead | 2.5 hours | 3.00 per hour | 7.50 |
| Total standard unit cost |  |  | \$ 54.50 |

## Standards vs. Budgets



A standard is a per unit cost.

Standards are often used when preparing budgets.

## A General Model for Variance Analysis



## Material Variances Example

Glacier Peak Outfitters has the following direct material standard for the fiberfill in its mountain parka.
0.1 kg . of fiberfill per parka at $\$ 5.00$ per $\mathbf{k g}$.

Last month 210 kgs of fiberfill were purchased and used to make 2,000 parkas. The material cost a total of \$1,029.

## Material Variances Summary



## Material Variances



Hanson purchased and used 1,700 pounds. How are the variances computed if the amount purchased differs from the amount used?


The price variance is computed on the entire quantity purchased.
The quantity variance is computed only on the quantity used.

## Responsibility for Material Variances

Materials Quantity Variance


Materials Price Variance


The standard price is used to compute the quantity variance so that the production manager is not held responsible for the purchasing manager's performance.

## Labor Variances Example

Glacier Peak Outfitters has the following direct labor standard for its mountain parka.
1.2 standard hours per parka at $\$ 10.00$ per hour

Last month, employees actually worked 2,500 hours at a total labor cost of $\$ 26,250$ to make 2,000 parkas.


## Labor Variances Summary



2,500 hours $\times$
$\$ 10.50$ per hour
$=\$ 26,250$

Actual Hours
$\times$
Standard Rate
2,500 hours
$\times$
$\$ 10.00$ per hour.
$=\$ 25,000$

Standard Hours $\times$
Standard Rate
2,400 hours $\times$
$\$ 10.00$ per hour
$=\$ 24,000$

Rate variance
\$1,250 unfavorable

Efficiency variance \$1,000 unfavorable


## Responsibility for Labor Variances

Production managers are usually held accountable for labor variances because they can influence the:


Mix of skill levels assigned to work tasks.

Level of employee motivation.

Quality of production supervision.

Quality of training provided to employees.

## Variable Manufacturing Overhead Variances Example

Glacier Peak Outfitters has the following direct variable manufacturing overhead labor standard for its mountain parka.

## 1.2 standard hours per parka at $\$ 4.00$ per hour

Last month, employees actually worked 2,500 hours to make 2,000 parkas. Actual variable manufacturing overhead for the month was $\$ 10,500$.

## Variable Manufacturing Overhead Variances Summary



2,500 hours $\times$
$\$ 4.20$ per hour
$=\$ 10,500$

Actual Hours $\times$
Standard Rate
2,500 hours
$\times$
$\$ 4.00$ per hour
$=\$ 10,000$

Standard Hours $\times$
Standard Rate
2,400 hours $\times$
$\$ 4.00$ per hour
$=\$ 9,600$

Spending variance \$500 unfavorable

Efficiency variance \$400 unfavorable


## Advantages of Standard Costs



Enhances
Simplified
bookkeeping
responsibility
accounting

## Potential Problems with Standard Costs

Emphasizing standards
may exclude other important objectives.

Standard cost reports may not be timely.

## Potential

 ProblemsInvalid assumptions about the relationship between labor cost and output.

Favorable variances may be misinterpreted.

Emphasis on negative may impact morale.

Continuous improvement may
be more important than meeting standards.

## Variable Overhead Variances - Example

Actual<br>Variable<br>Overhead Incurred

Flexible Budget for Variable
Overhead at
Actual Hours
3,300 hours
$\times$
$\$ 2.00$ per hour
\$6,600

Flexible Budget for Variable Overhead at
Standard Hours

3,200 hours<br>$\times$

$\$ 2.00$ per hour
\$6,400

Spending variance \$140 unfavorable

Efficiency variance
\$200 unfavorable

## Overhead Rates and Overhead Analysis - Example

## ColaCo prepared this flexible budget for overhead:

| Machine | Total <br> Variable <br> Hours | Variable <br> Overhead <br> Onerhead | Total <br> Fixed <br> Overhead | Fixed <br> Overhead <br> Rate |  |  |
| :---: | :---: | ---: | ---: | ---: | ---: | ---: |
| 3,000 | $\$ 6,000$ | $\$$ | 2.00 | $\$$ | 9,000 | $\$$ |
| 4,000 | 8,000 | 2.00 | 9,000 | 2.00 |  |  |

## Overhead Variances and Under- or Overapplied Overhead Cost



