Flexible Budgets

and

Standard Costing Variance Analysis

Static Budgets and Performance Reports

CheeseCo

	Static Budget	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

Preparing a Flexible Budget

	Cost Formula per Hour	Total Fixed Cost	Flexible Budgets 8,000 Hours	10,000 Hours	12,000 Hours
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 Budget	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
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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

Activity

This $15,000F 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:

Inputs	A Standard Quantity or Hours	B Standard Price or Rate	A x B Standard 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

Are standards the same as budgets?

A budget is set for total costs.

A standard is a per unit cost.

Standards are often used when preparing budgets.

A General Model for Variance Analysis

Actual Quantity × Actual Price	Actual Quantity × Standard Price	Standard Quantity × Standard Price
	Price Variance	Quantity Variance

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 kg.

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

Actual Quantity × Actual Price	Actual Quantity × Standard Price	Standard Quantity × Standard Price
210 kgs. × $4.90 per kg.	210 kgs. × $5.00 per kg.	200 kgs. × $5.00 per kg.
= $1,029	= $1,050	= $1,000
Price variance $21 favorable		Quantity variance $50 unfavorable

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

Production Manager

Materials Price Variance

Purchasing Manager

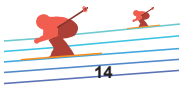
The standard price is used to compute the quantity variance so that the production manager is not held responsible for the purchasing manager's performance.

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.

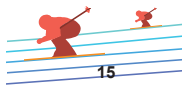


Labor Variances Summary

Actual Hours × Actual Rate	Actual Hours × Standard Rate	Standard Hours × Standard Rate
2,500 hours × $10.50 per hour	2,500 hours × $10.00 per hour.	2,400 hours × $10.00 per hour
= $26,250	= $25,000	= $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.

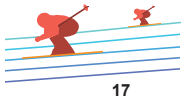
Production Manager

Variable Manufacturing Overhead Variances Example

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

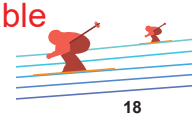
1.2 standard hours per parka at $4.00 per hour

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

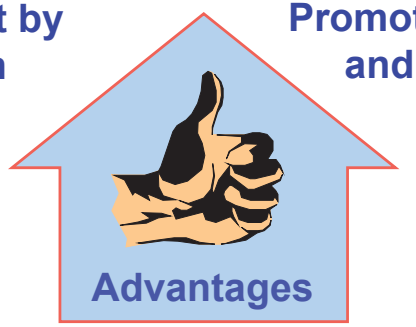
Actual Hours × Actual Rate	Actual Hours × Standard Rate	Standard Hours × Standard Rate
2,500 hours × $4.20 per hour	2,500 hours × $4.00 per hour	2,400 hours × $4.00 per hour
= $10,500	= $10,000	= $9,600
	Spending variance $500 unfavorable	Efficiency variance $400 unfavorable



Advantages of Standard Costs

Management by exception

Promotes economy and efficiency



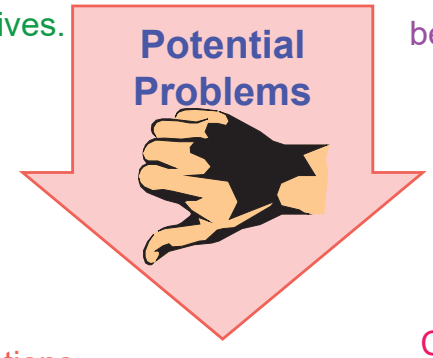
Simplified bookkeeping

Enhances responsibility accounting

Potential Problems with Standard Costs

Emphasizing standards may exclude other important objectives.

Favorable variances may be misinterpreted.



Standard cost reports may not be timely.

Emphasis on negative may impact morale.

Invalid assumptions about the relationship between labor cost and output.

Continuous improvement may be more important than meeting standards.

Variable Overhead Variances – Example

Actual Variable Overhead Incurred	Flexible Budget for Variable Overhead at Actual Hours	Flexible Budget for Variable Overhead at Standard Hours
	3,300 hours × $2.00 per hour	3,200 hours × $2.00 per hour
$6,740	$6,600	$6,400

Spending variance $140 unfavorable

Efficiency variance $200 unfavorable

$340 unfavorable flexible budget total variance

Overhead Rates and Overhead Analysis – Example

ColaCo prepared this flexible budget for overhead:

Machine Hours	Total Variable Overhead	Variable Overhead Rate	Total Fixed Overhead	Fixed Overhead Rate
3,000	$ 6,000	$ 2.00	$ 9,000	$ 3.00
4,000	8,000	2.00	9,000	2.25

Overhead Variances and Under- or Overapplied Overhead Cost

In a standard cost system:

Unfavorable variances are equivalent to underapplied overhead.

Favorable variances are equivalent to overapplied overhead.

The sum of the overhead variances equals the under- or overapplied overhead cost for a period.