Chapter 7: Flexible Budgets, Variances, and Management Control: I

The use of Planning for Control
Basic Concepts

- **Variance** – difference between an actual and an expected (budgeted) amount
- **Management by Exception** – the practice of focusing attention on areas not operating as expected (budgeted)
- **Static budget** – a budget prepared for only one level of activity
  - It is based on the level of output planned at the start of the budget period.
  - The master budget is an example of a static budget.
- **Flexible budget** – revenues or costs considered justified by the actual output level of the budget period
  - A key difference between a *flexible budget* and a *static budget* is the use of the actual output level in the flexible budget.
  - In general, flexible budgets can also be conditioned on actual levels of other external influences
  - serve to implement responsibility accounting
Basic Concepts

- **Static-Budget Variance (Level 0)** – the difference between the actual result and the corresponding static budget amount
- **Flexible-Budget Variances (Level 1)** – static budget variance decomposed according to categories
- **Favorable Variance (F)** – has the effect of increasing operating income relative to the budget amount
- **Unfavorable Variance (U)** – has the effect of decreasing operating income relative to the budget amount
Variances

- Variances may start out “at the top” with a Level 0 variance
  - the difference between actual and static-budget operating income
  - Answers: “How much were we off?”
- Levels 1, 2, and 3 examine the Level 0 variance into progressively more-detailed levels of analysis
  - Answers: “Where and why were we off?”
A Simple Example

- **Operating Indicators:**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Actual Results</th>
<th>Static Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units Sold</td>
<td>100</td>
<td>90</td>
</tr>
<tr>
<td>Selling Price</td>
<td>$35</td>
<td>$30</td>
</tr>
<tr>
<td>Direct Materials Cost per Unit</td>
<td>$7</td>
<td>$6</td>
</tr>
<tr>
<td>Direct Labor Cost per Unit</td>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>Variable Manufacturing Overhead per Unit</td>
<td>$5</td>
<td>$6</td>
</tr>
<tr>
<td>Fixed Costs</td>
<td>$600</td>
<td>$700</td>
</tr>
</tbody>
</table>
## A Simple Example

<table>
<thead>
<tr>
<th></th>
<th>Actual Results</th>
<th>Static-Budget Variances</th>
<th>Static Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Units Sold</strong></td>
<td>100</td>
<td>10 F</td>
<td>90</td>
</tr>
<tr>
<td><strong>Revenues</strong></td>
<td>$3,500</td>
<td>$800 F</td>
<td>$2,700</td>
</tr>
<tr>
<td><strong>Variable Costs:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Materials</td>
<td>700</td>
<td>160 U</td>
<td>540</td>
</tr>
<tr>
<td>Direct Labor</td>
<td>1,000</td>
<td>100 U</td>
<td>900</td>
</tr>
<tr>
<td>Variable Factory Overhead</td>
<td>500</td>
<td>(40) F</td>
<td>540</td>
</tr>
<tr>
<td><strong>Contribution Margin</strong></td>
<td>1,300</td>
<td>580 F</td>
<td>720</td>
</tr>
<tr>
<td><strong>Fixed Costs</strong></td>
<td>600</td>
<td>(100) F</td>
<td>700</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>$700</td>
<td>$680 F</td>
<td>$20</td>
</tr>
</tbody>
</table>

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**Level 1 Analysis**

**Level 0 Analysis**
Flexible Budget

- Flexible Budget – shifts budgeted revenues and costs up and down based on actual operating results (activities)
- Represents a blending of actual activities and budgeted dollar amounts
- Will allow for preparation of Levels 2 and 3 variances
  - Answers the question: “Why were we off?”
# A Flexible-Budget Example

<table>
<thead>
<tr>
<th>Units Sold</th>
<th>Actual Results</th>
<th>Flexible-Budget Variances</th>
<th>Flexible Budget</th>
<th>Sales-Volume Variances</th>
<th>Static Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>-</td>
<td>N/A</td>
<td>100</td>
<td>90</td>
</tr>
</tbody>
</table>

| Revenues   | $ 3,500        | $ 500 F                   | $ 3,000        | $ 300 F                | $ 2,700       |

| Variable Costs: |                  |                           |                |                        |               |
| Direct Materials | $ 700           | 100 U                     | $ 600          | 60 U                   | $ 540         |
| Direct Labor    | $ 1,000         | - N/A                     | $ 1,000        | 100 U                  | $ 900         |
| Variable Factory Overhead | $ 500    | (100) F                   | $ 600          | 60 U                   | $ 540         |

| Contribution Margin | 1,300 | 500 F | 800 | 80 F | 720 |

| Fixed Costs | 600 | (100) F | 700 | - N/A | 700 |

| Operating Income | $ 700 | $ 600 F | $ 100 | $ 80 F | $ 20 |

**Level 3** Variances will explore these figures in detail.

**Level 2 Variances:**
- **Flexible-Budget**
- **Sales-Volume**

**Level 1 Variance:**
- **Static-Budget**
Level 2 analysis

- provides information on the two components of the static-budget variance.

1. **Flexible-budget variance:**
   
   \[
   (\text{Actual} - \text{budgeted contribution margin/unit}) \times \text{actual sales mix} \times \text{actual units sold}
   \]

2. **Sales-volume variance:**
   
   \[
   (\text{Actual units sold \times actual sales mix} - \text{budgeted units sold \times budgeted sales mix}) \times \text{budgeted contribution margin/unit}
   \]
Level 3 Variances

- All Product Costs can have Level 3 Variances. Direct Materials and Direct Labor will be handled next. Overhead Variances are discussed in detail in a later chapter.
- Both Direct Materials and Direct Labor have both Price and Efficiency Variances, and their formulae are the same.

**Price Variance**

\[
\text{Price Variance} = \left\{ \frac{\text{Actual Price Of Input}}{} - \frac{\text{Budgeted Price Of Input}}{} \right\} \times \frac{\text{Actual Quantity Of Input}}{}
\]

**Efficiency Variance**

\[
\text{Efficiency Variance} = \left\{ \frac{\text{Actual Quantity Of Input Used}}{} - \frac{\text{Budgeted Quantity of Input Allowed for Actual Output}}{}} \right\} \times \frac{\text{Budgeted Price Of Input}}{}
\]
Another Example

- Rockville Co. manufactures and sells dress suits.
  - Budgeted variable costs per suit:
    - Direct materials cost $65
    - Direct manufacturing labor 26
    - Variable manufacturing overhead 24
    - Total variable costs $115
  - Budgeted selling price: $155 per suit.
  - Fixed manufacturing costs are expected to be $286,000 within a relevant range between 9,000 and 13,500 suits.
  - The static budget for year 2004 is based on selling 13,000 suits.

- Static-budget operating income
  - Revenues (13,000 × $155) $2,015,000
  - Variable Expenses (13,000 × $115) - 1,495,000
  - Fixed Expenses - 286,000
  - Budgeted operating income $234,000
Rockville Co. produced and sold 10,000 suits.

Actual Budgeted

- Sales Revenue: $1,600,000 $2,015,000
- variable costs: $1,200,000 - 1,495,000
- fixed manufacturing costs $ 300,000 - 286,000
- operating income: $ 100,000 $234,000

Static-budget variance: difference between an actual result and a budgeted amount in the static budget.

- Favorable: if operating income > budgeted amount.
- Unfavorable: if operating income < budgeted amount.
Level 0 analysis compares actual operating income with budgeted operating income.

- Actual operating income: $100,000
- Budgeted operating income: $234,000
- Static-budget variance of operating income: $134,000 U

Level 1 analysis provides information on components of the operating income static-budget variance.

### Static Budget Based Variance Analysis

(Level 1) in (000)

<table>
<thead>
<tr>
<th>Static Budget</th>
<th>Actual Results</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suits (volume)</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Revenue</td>
<td>$2,015</td>
<td>$1,600</td>
</tr>
<tr>
<td>Variable costs</td>
<td>$1,495</td>
<td>$1,200</td>
</tr>
<tr>
<td>Contribution margin</td>
<td>$520</td>
<td>$400</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>286</td>
<td>300</td>
</tr>
<tr>
<td>Operating income</td>
<td>$234</td>
<td>$100</td>
</tr>
</tbody>
</table>
Steps in Developing Flexible Budgets

- **Step 1**: Determine budgeted selling price, budgeted variable cost per unit, and budgeted fixed cost.
  - Budgeted selling price: $155, budgeted variable cost: $115 per suit, budgeted fixed cost: $286,000.

- **Step 2**: Determine the actual quantity of output.
  - 10,000 suits produced and sold in 2004.

- **Step 3**: Determine the flexible budget for revenues based on budgeted selling price and actual quantity of output.
  - $155 \times 10,000 = $1,550,000

- **Step 4**: Determine the flexible budget for costs based on budgeted variable costs per output unit, actual quantity of output, and the budgeted fixed costs.
  - Flexible budget:
    - Variable costs: $115 \times 10,000 = $1,150,000
    - Fixed costs: $286,000
    - Total costs: $1,436,000
# Flexible-Budget Variances

(Low 2) in (000)

<table>
<thead>
<tr>
<th>Flexible Budget</th>
<th>Actual Results</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suits 10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Revenue $1,550</td>
<td>$1,600</td>
<td>$ 50 F</td>
</tr>
<tr>
<td>Variable costs</td>
<td>1,150</td>
<td>1,200</td>
</tr>
<tr>
<td>Contribution margin $ 400</td>
<td>$ 400</td>
<td>$ 0 U</td>
</tr>
<tr>
<td>Fixed costs 286</td>
<td>300</td>
<td>14 U</td>
</tr>
<tr>
<td>Operating income $ 114</td>
<td>$ 100</td>
<td>$ 14 U</td>
</tr>
</tbody>
</table>

- The flexible-budget variance pertaining to revenues is often called a **selling-price variance** because it arises solely from differences between the actual selling price and the budgeted selling price:
  - Selling-price variance = ($160 – $155) x 10,000 = $50,000 F
  - Actual selling price exceeds the budgeted amount by $5.
Sales-Volume Variance

- The difference between the static budget for the number of units expected to be sold and the flexible budget for the number of units that were actually sold.
  - The only difference between the static budget and the flexible budget is the output level upon which the budget is based.

- **Sales-Volume Variance (Level 2) in (000)**

<table>
<thead>
<tr>
<th></th>
<th>Flexible Budget</th>
<th>Static Budget</th>
<th>Sales-Volume Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suits</strong></td>
<td>10</td>
<td>13</td>
<td>3 U</td>
</tr>
<tr>
<td><em><em>Revenue</em>)</em>*</td>
<td>$1,550</td>
<td>$2,015</td>
<td>$465 U</td>
</tr>
<tr>
<td><em><em>Variable costs</em>)</em>*</td>
<td>1,150</td>
<td>1,495</td>
<td>345 F</td>
</tr>
<tr>
<td><strong>Contr. margin</strong></td>
<td>$ 400</td>
<td>$ 520</td>
<td>$120 U</td>
</tr>
<tr>
<td><strong>Fixed costs</strong></td>
<td>286</td>
<td>286</td>
<td>0</td>
</tr>
<tr>
<td><strong>Operating income</strong></td>
<td>$ 114</td>
<td>$ 234</td>
<td>$120 U</td>
</tr>
</tbody>
</table>

*) budgeted price and unit cost
Split-up of Static Budget Variance

Level 1

Static-budget variance
$134,000 U

Level 2

Flexible-budget variance
$14,000 U

Volume as actual, price and unit cost compared

Sales-volume variance
$120,000 U

price and unit cost as budgeted, volume compared
Remark

- The above split-up has been derived by introducing the flexible budget between static budget and actual values:
  
  **static budget variance (level 1)**
  
  \[
  \text{static budget variance (level 1)} = \text{budgeted } \# \text{ of units} \times \text{budgeted } \$ \text{ per unit} \\
  \hspace{1cm} - \hspace{1cm} \text{actual } \# \text{ of units} \times \text{budgeted } \$ \text{ per unit} \\
  \hspace{1cm} + \hspace{1cm} \text{actual } \# \text{ of units} \times \text{budgeted } \$ \text{ per unit} \\
  \hspace{1cm} - \hspace{1cm} \text{actual } \# \text{ of units} \times \text{actual } \$ \text{ per unit}
  \]

- Formally, a similar split-up could have been derived by developing a "flexible budget 2" as follows
  
  **static budget variance (level 1)**
  
  \[
  \text{static budget variance (level 1)} = \text{budgeted } \# \text{ of units} \times \text{budgeted } \$ \text{ per unit} \\
  \hspace{1cm} - \hspace{1cm} \text{budgeted } \# \text{ of units} \times \text{actual } \$ \text{ per unit} \\
  \hspace{1cm} + \hspace{1cm} \text{budgeted } \# \text{ of units} \times \text{actual } \$ \text{ per unit} \\
  \hspace{1cm} - \hspace{1cm} \text{actual } \# \text{ of units} \times \text{actual } \$ \text{ per unit}
  \]
Variance and Journal Entries

- Each variance may be journalized
- Each variance has its own account
- Favorable variances are credits; Unfavorable variances are debits
- Variance accounts are generally closed into Cost of Goods Sold at the end of the period, if immaterial
Basic Information for Setting Budgets

- Main sources of information about budgeted input prices and budgeted input quantities:
  1. Actual input data from past periods
     - averages adapted according to expected inflation and/or cost reductions due to improvement actions
  2. Standards developed
     - A standard input is a carefully predetermined quantity of inputs (such as pounds of materials or manufacturing labor-hours) required for one unit of output.

- A standard cost is a carefully predetermined cost that is based on a norm of efficiency.
- Standard costs can relate to units of inputs or units of outputs

\[
\text{Standard input allowed for one output unit} \times \text{Standard cost per input unit}
\]
Cost budgeting, procedure...

• Choose normal capacity $x^p$
• Determine static budget (master budget) $K^p$ at normal capacity
• determine budgeted “fixed” cost
• flexible budget as a linear approximation of the cost function which is non-linear in general

![Graph showing flexible cost budget](image)
Cost absorption

- **charge rate** $\alpha = \frac{K^P}{x^P}$, contains costs of used part of capacity
Efficiency Variance, graphical

- Determine actual usage $x^A$

- the cost budget consists of
  - the cost of idle capacity
  - the absorbed cost

- determine actual cost at budgeted prices and charge rates

- excess of actual cost over budget: Flexible budget variance

\[ x^A \text{ versus } x^P \]

\[ K^P \text{ and } K^F \]

\[ \alpha \]

under-absorbed
Cost budgeting and control, Formulas

- Flexible budget: 
  \[ K^S(x) = K^F + (K^P - K^F) \frac{x}{x^P} \]
  \[ = K^P - \frac{K^P - K^F}{x^P} (x^P - x) \]

- Absorbed cost: 
  \[ K^P \cdot \frac{x^A}{x^P} \]

- Cost of idle capacity: 
  \[ K^F \cdot (1 - \frac{x^A}{x^P}) \]

- Flexible budget variance: 
  \[ K^A - K^S(x^A) \]
Standard Costing

- Budgeted amounts and rates are actually booked into the accounting system
- These budgeted amounts contrast with actual activity and give rise to Variance accounts
- Reasons for implementation:
  - Improved software systems
  - Wide usefulness of variance information
Separating price and quantity components

Budget = budgeted price $\times$ budgeted quantity

Price variance = (actual price - budgeted price) $\times$ actual quantity

Quantity variance = Budgeted price $\times$(actual quantity - budgeted quantity)

A standard cost center in a production factory usually has no discretion on purchasing. Then its budget should be independent of price fluctuation.
Flexible-budget variance for direct materials

= Materials-price variance
\[ 42,500 \times ($15.95 - $16.25) \]
\[ = $12,750 \text{ F} \]

+ Materials-efficiency variance
\[ (42,500 - 40,000) \times $16.25 \]
\[ = $40,625 \text{ U} \]
\[ $27,875 \text{ U} \]
Flexible-budget variance for direct manufacturing labor

= Labor-price variance
  \[ 21,500 \times (12.90 - 13.00) \]
  \[ = \$2,150 \text{ F} \]

+ Labor-efficiency variance
  \[ (21,500 - 20,000) \times 13.00 \]
  \[ = \$19,500 \text{ U} \]

\[ \text{Total Variance} = \$17,350 \text{ U} \]
Standards developed for Rockville Company:

- **Direct materials:**
  - 4.00 square yards of cloth input allowed per output unit (suit) purchased at $16.25 standard cost per square yard.
  - Standard cost per output unit manufactured
    \[= 4.00 \times \$16.25 = \$65.00\]

- **Direct manufacturing labor:**
  - 2.00 manufacturing labor-hours of input allowed per output unit (suit) manufactured at $13.00 standard cost per hour.
  - Standard cost per output unit manufactured
    \[= 2.00 \times \$13.00 = \$26.00\]
Price and Efficiency Variances

- Level 3 analysis separates the flexible-budget variance into price and efficiency variances.

- Actual data for Rockville Company:
  - Direct materials purchased and used: 42,500 sq. yards
  - Actual price paid per yard: $15.95
  - Actual direct manufacturing labor hours: 21,500
  - Actual price paid per hour: $12.90

- Actual cost of direct materials
  - $677,875

- Actual cost of direct manufacturing labor
  - $277,350
Price Variances

- difference between the actual price and the budgeted price of inputs multiplied by the actual quantity of inputs.
  - Input-price variance
  - Rate variance

- Price variance =
  
  (Actual price of inputs – Budgeted price of inputs) × Actual quantity of inputs

- Rockville example:
  - Price variance for direct materials:
    
    ($15.95 – $16.25) × 42,500 = $12,750 F

  - Price variance for direct manufacturing labor:
    
    ($12.90 – $13.00) × 21,500 = $2,150 F
### Price Variances

<table>
<thead>
<tr>
<th>Actual Quantity</th>
<th>Actual Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>of Inputs at</td>
<td>of Inputs at</td>
</tr>
<tr>
<td>Actual Price</td>
<td>Budgeted Price</td>
</tr>
<tr>
<td>42,500 × $15.95</td>
<td>42,500 × $16.25</td>
</tr>
<tr>
<td>= $677,875</td>
<td>= $690,625</td>
</tr>
</tbody>
</table>

$12,750 F

**Materials price variance**

<table>
<thead>
<tr>
<th>Actual Quantity</th>
<th>Actual Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>of Inputs at</td>
<td>of Inputs at</td>
</tr>
<tr>
<td>Actual Price</td>
<td>Budgeted Price</td>
</tr>
<tr>
<td>21,500 × $12.90</td>
<td>21,500 × $13.00</td>
</tr>
<tr>
<td>= $277,350</td>
<td>= $279,500</td>
</tr>
</tbody>
</table>

$2,150 F

**Labor price variance**

---

- **Possible causes for favorable price variances?**
  - Purchasing manager might have negotiated more skillfully than planned.
  - Labor prices were set without careful analysis of the market.
Efficiency Variance

- Difference between the actual and budgeted quantity of inputs used multiplied by the *budgeted price of input*.  

**Efficiency variance =**

\[(\text{Actual quantity of inputs used} - \text{Budgeted quantity of inputs allowed for actual output}) \times \text{Budgeted price of inputs}\]

**Rockville results**

- Efficiency variance for direct materials:
  \[(42,500 - 40,000) \times \$16.25 = \$40,625 \text{ U}\]
- Efficiency variance for direct manufacturing labor:
  \[(21,500 - 20,000) \times \$13.00 = \$19,500 \text{ U}\]
## Efficiency Variances

<table>
<thead>
<tr>
<th>Actual Quantity of Inputs at Budgeted Price</th>
<th>Budgeted Quantity Allowed for Actual Outputs at Budgeted Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>42,500 × $16.25</td>
<td>40,000 × $16.25</td>
</tr>
<tr>
<td>= $690,625</td>
<td>= $650,000</td>
</tr>
<tr>
<td></td>
<td>$40,625 U</td>
</tr>
<tr>
<td></td>
<td>Materials efficiency variance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actual Quantity of Inputs at Budgeted Price</th>
<th>Budgeted Quantity Allowed for Actual Outputs at Budgeted Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>21,500 × $13.00</td>
<td>20,000 × $13.00</td>
</tr>
<tr>
<td>= $279,500</td>
<td>= $260,000</td>
</tr>
<tr>
<td></td>
<td>$19,500 U</td>
</tr>
<tr>
<td></td>
<td>Labor efficiency variance</td>
</tr>
</tbody>
</table>
Possible Causes of unfavorable Efficiency Variances

- Purchasing manager received lower quality of materials.
- Personnel manager hired underskilled workers.
- Maintenance department did not properly maintain machines.
- Poor organization of production process:
  - Shortage of material due to untimely delivery
  - Patterns or models missing
- Fluctuations in motivation or working conditions...
Activity-Based Costing and Variances

- ABC easily lends itself to budgeting and variance analysis
- Budgeting is not conducted on the departmental-wide basis (or other macro approaches)
- Instead, budgets are built from the bottom-up with activities serving as the building blocks of the process
Managerial Uses of Variances

- To understand underlying causes of variances
- Recognition of inter-relatedness of variances
- Performance Measurement
  - Managers ability to be Effective
  - Managers ability to be Efficient
- *Effectiveness* is the degree to which a predetermined objective or target is met.
- *Efficiency* is the relative amount of inputs used to achieve a given level of output.
- Performance evaluation should not be based on Variances alone
  - If any single performance measure, such as a labor efficiency variance, receives excessive emphasis, managers tend to make decisions that maximize their own reported performance in terms of that single performance measure
  - “what you measure is what you get”.

Effectiveness is the degree to which a predetermined objective or target is met. Efficiency is the relative amount of inputs used to achieve a given level of output. Performance evaluation should not be based on Variances alone. If any single performance measure, such as a labor efficiency variance, receives excessive emphasis, managers tend to make decisions that maximize their own reported performance in terms of that single performance measure. "what you measure is what you get".
Benchmarking and Variances

- Benchmarking is the continuous process of comparing the levels of performance in producing products and services against the best levels of performance in competing companies.
- Variances can be extended to include comparison to other entities.
Multiple Causes of Variances

- Often the causes of variances are interrelated.
- A favorable price variance might be due to lower quality materials.
- It is best to always consider possible interdependencies among variances and to not interpret variances in isolation of each other...
- Almost all organizations use a combination of financial and nonfinancial performance measures rather than relying exclusively on either type.
- Control may be exercised by observation of workers.
Quiz

1. Flexible budgets
   a. accommodate changes in the inflation rate.
   b. accommodate changes in activity levels.
   c. are used to evaluate capacity utilization.
   d. are static budgets that have been revised for changes in prices.

2. The following information is available for the Gabriel Products Company for the month of July:

<table>
<thead>
<tr>
<th></th>
<th>Static Budget</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>5,000</td>
<td>5,100</td>
</tr>
<tr>
<td>Sales revenue</td>
<td>$60,000</td>
<td>$58,650</td>
</tr>
<tr>
<td>Variable manufacturing costs</td>
<td>$15,000</td>
<td>$16,320</td>
</tr>
<tr>
<td>Fixed manufacturing costs</td>
<td>$18,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>Variable marketing and administrative expense</td>
<td>$10,000</td>
<td>$10,500</td>
</tr>
<tr>
<td>Fixed marketing and administrative expense</td>
<td>$12,000</td>
<td>$11,000</td>
</tr>
</tbody>
</table>

The total sales-volume variance of operating income for the month of July would be

a. $2,550 unfavorable.  b. $1,350 unfavorable.  c. $700 favorable.  d. $100 favorable.
3. Bartholomew Corporation’s master budget calls for the production of 6,000 units of product monthly. The master budget includes indirect labor of $396,000 annually; Bartholomew considers indirect labor to be a variable cost. During the month of September, 5,600 units of product were produced, and indirect labor costs of $30,970 were incurred. A performance report utilizing flexible budgeting would report a flexible budget variance for indirect labor of

   a. $170 U.  
   b. $170 F.  
   c. $2,030 U.  
   d. $2,030 F.

4. Which of the following is **not** an advantage for using standard costs for variance analysis?

   a. Standards simplify product costing.
   b. Standards are developed using past costs and are available at a relatively low cost.
   c. Standards are usually expressed on a per unit basis.
   d. Standards can take into account expected changes planned to occur in the budgeted period.
5. Information on Pruitt Company’s direct-material costs for the month of July 2005 was as follows:

- Actual quantity purchased: 30,000 units
- Actual unit purchase price: $2.75
- Materials purchase-price variance: $1,500 (unfavorable)
- Standard quantity allowed for actual production: 24,000 units
- Actual quantity used: 22,000 units

For July 2005 there was a favorable direct-materials efficiency variance of:

a. $7,950.  
b. $5,500.  
c. $5,400.  
d. $5,600.
6. Information for Garner Company’s direct-labor costs for the month of September 2005 is as follows:

- Actual direct-labor hours: 34,500 hours
- Standard direct-labor hours: 35,000 hours
- Total direct-labor payroll: $241,500
- Direct-labor efficiency variance—favorable: $3,200

What is Garner’s direct-labor price (or rate) variance?

a. $21,000 F    b. $21,000 U    c. $17,250 U    d. $20,700 U