Flexible Budgets and Standards

1. Introduction

- Static budget — a budget targeted at one level of operations; unaffected by changes in volume or other conditions during the fiscal period.
- Flexible budget — a budget which is adjusted for changes in volume. Implementing a flexible budget requires knowledge of the behavior of revenues/costs over the relevant range.

2. Example

Cholesterol Producers estimates that its sales volume next year will be 15,000 units. The unit selling price is estimated to be $40.00. Variable Manufacturing costs per unit are expected to be $20, while variable S&A expenses are expected to be $6 per unit sold. FOH is budgeted at $40,000, and $60,000 are expected for fixed S&A expenses.

The following table compares net-income as budgeted with actual results and budgeted figures adjusted for production volume.

<table>
<thead>
<tr>
<th>Line Item</th>
<th>Static Budget</th>
<th>Actual</th>
<th>Flexible Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$600,000</td>
<td>$500,000</td>
<td>40 × s</td>
</tr>
<tr>
<td>CGS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>300,000</td>
<td>236,250</td>
<td>20 × s</td>
</tr>
<tr>
<td>FOH</td>
<td>40,000</td>
<td>50,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>260,000</td>
<td>213,750</td>
<td>20 × s − 40,000</td>
</tr>
<tr>
<td>S&amp;A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>90,000</td>
<td>70,000</td>
<td>6 × s</td>
</tr>
<tr>
<td>Fixed</td>
<td>60,000</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Profit</td>
<td>110,000</td>
<td>83,750</td>
<td>14 × s − 100,000</td>
</tr>
</tbody>
</table>

The difference between actual and budgeted figures gives rise to the following variance analysis. Suppose actual sales volume was 10,000 units.

Based on a note by Stefan Reichelstein.
3. Process

**LEVEL 0:** Compare actual profit to static budget profit.

\[83,750 - 110,000 = 26,250 \text{ (U)}\]

**LEVEL 1:** Compare actual line items to static budget line items.

Example: Sales  
\[500,000 - 600,000 = 100,000 \text{ (U)}\]

**LEVEL 2A:** Compare flexible budget at actual sales volume to static budget for each line item. These differences are called *sales volume* variances.

Example: Sales  
\[400,000 - 600,000 = 200,000 \text{ (U)}\]

**LEVEL 2B:** Compare flexible budget at actual sales volume to actual results for each line item. These differences are called *flexible budget* variances.

Example: Sales  
\[400,000 - 500,000 = 100,000 \text{ (F)}\]

**LEVEL 3:** Further detailed breakdown of the above Flexible budget variances into *price* and *efficiency* variances.

4. Example

Suppose the following standards apply for direct material prices and quantities:

**Direct Materials**  :  2.5 lbs./unit @ $4.00/lb.

The actual figures were:

Purchases of DM  :  30,000 lbs. @ $3.50/lb.  
Usage of DM :  28,000 lbs.  
Units Manufactured :  12,000

**REQUIRED:** Break the flexible budget variance for Direct Materials into price and efficiency variances according to the formulae:
$V_B = V_p + V_e$
$V_p = (AP - SP) \times AQ$
$V_e = (AQ - SQ) \times SP$
$V_B = AP \times AQ - SQ \times SP$

**NOTE:**

$SQ = (\text{Actual output produced}) \times (\text{Standard input allowance per unit of output})$
5. Ledger Procedure Under Standard Costing

<table>
<thead>
<tr>
<th>Raw Materials</th>
<th>Work in Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SP)(QP)</td>
<td>(SP)(AP)</td>
</tr>
<tr>
<td>(SP)(AQ)</td>
<td>(SP)(SQ)</td>
</tr>
</tbody>
</table>

\[

dm - (sp)(sq) \\
DL - (sp)(SQ) \\
VOH - (SRw)(SQ) \\
FOH - (SRf)(SQ) \\
\]

CoGM at standard

where \(QP\) is the quantity purchased.

Journal Entries for Direct Materials

1. Purchase of materials:
   
   Raw Materials Inventory \( (SP)(QP) \)
   
   Accounts Payable \( (AP)(QP) \)

   * reconciling entry is to Materials Price Variance

2. Add DM to production
   
   Work in Progress \( (SP)(SQ) \)
   
   Raw Material Inventory \( (SP)(AQ) \)

   * reconciling entry is to Materials Efficiency Variance

Journal Entries for Direct Labor

\[

dm - (sp)(sq) \\
DL - (sp)(SQ) \\
VOH - (SRw)(SQ) \\
FOH - (SRf)(SQ) \\
\]

Journal Entries for Overhead

\[

dm - (sr)(sq) \\
DL - (sp)(SQ) \\
VOH - (SRw)(SQ) \\
FOH - (SRf)(SQ) \\
\]

Applied OH \( (SR)(SQ) \)

OH Control \( (SR)(SQ) \)

Accounts Payable Actual

Actual