Actual, Normal, and Standard Costing

Questions addressed by this note are:

• What is actual costing? Normal costing? Standard costing?
• What are possible causes of underapplication?
• What are the effects of volatility?
• Are under (over) applied costs inventoriable?

1. Overview

Under standard costing, COGS is calculated entirely on the basis of estimates or standards. This requires specification of standard prices \( SP \) for all direct inputs (\( DM \) and \( DL \)) and standard rates \( SR \) for overhead. In addition, one has to set standard quantities \( SQ \) that reflect the budgeted input allowances per unit of output.

**WIP Charges under Different Costing Alternatives:**

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Normal</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Material</td>
<td>((AP)(AQ))</td>
<td>((AP)(AQ))</td>
<td>((SP)(SQ))</td>
</tr>
<tr>
<td>Direct Labor</td>
<td>((AP)(AQ))</td>
<td>((AP)(AQ))</td>
<td>((SP)(SQ))</td>
</tr>
<tr>
<td>Variable Overhead</td>
<td>Actual</td>
<td>((SR_v)(AQ))</td>
<td>((SR_v)(SQ))</td>
</tr>
<tr>
<td>Fixed Overhead</td>
<td>Actual</td>
<td>((SR_f)(AQ))</td>
<td>((SR_f)(SQ))</td>
</tr>
</tbody>
</table>

where:

\( SP \) (\( SR \)): *standard price (rate for overhead)* is the budgeted price (rate).

\( SQ \): *standard quantity* is the budgeted quantity.

Based in part on a note by Stefan Reichelstein.
2. Advantages of Standard Costing over Actual and Normal Costing

- Useful in the budgeting process.
- Corrects for temporary price changes.
- Corrects for temporary inefficiencies.

3. Example of underapplication:

<table>
<thead>
<tr>
<th></th>
<th>Estimated</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>100 units</td>
<td>110 units</td>
</tr>
<tr>
<td>Costs</td>
<td>$5,000</td>
<td>$6,000</td>
</tr>
</tbody>
</table>

- Application Rate $50/unit
- The ratio of estimated costs to volume differs from the ratio of actual costs to volume.

\[
\text{Costs applied are } \frac{50/\text{unit}}{110 \text{ units}} = \frac{5,500}{110} \approx 50 \text{$/unit, actual} \\
\text{Costs incurred are } \frac{6,000}{110} \approx 54.5 \text{$/unit, estimated} \\
\text{Underapplication of costs} \quad \frac{500}{110} \approx 4.54 \text{$/unit} \\
\]

- Similarly, costs can be overapplied.

4. Seasonality Example—CPA Firm

A salaried staff person costs $50,000 and reports time at work of 2,000 hours.

- Naive model for costing jobs:

\[
\text{Application rate for staff person } = \frac{50,000}{2,000 \text{ hours}} = \$25/\text{hr} \\
\]

- But staff person is only used intensively on chargeable client work from January to June:

\[
\begin{array}{lll}
\text{hours} & \text{Jan – June} & 200 \text{ hours/month} \\
& & 6 \times 200 = 1,200 \\
& \text{July – December} & 100 \text{ hours/month} \\
& & 6 \times 100 = 600 \\
& \text{Training} & 100 \\
& \text{Unassigned} & 100 \\
& \text{Total} & 2,000 \\
\end{array}
\]
• Should a job in January be costed at the same amount as a job in July? If so, does this lead to efficient resource allocation?

• When should training take place?

• What is the opportunity cost of training?

• Should you solicit work at $24/hr in January? In July?

• Should you solicit work at $28/hr in January? In July?