

Variance basics & standard costing

- ✓ **Total variance** = actual results – master (static) budget; break into price, volume, and mix for the root cause
- ✓ **Favorable** = improves profit; **unfavorable** = reduces profit
The materials, labor, overhead, and sales formulas on this sheet are written so that a positive result is favorable
- ✓ **Standard costing**: predetermined unit-level standards for materials, labor, and overhead (standards = per-unit benchmarks; budgets = aggregated period benchmarks)
- ✓ **Management by exception**: managers act only on material deviations; routine matters are delegated

Materials variances

- ✓ **Price**: $(SP - AP) \times AQ$
AQ = actual quantity purchased; purchasing responsibility
- ✓ **Usage**: $(SQ - AQ) \times SP$
- ✓ **Cost (total)**: $(SQ \times SP) - (AQ \times AP)$
= price + usage, if quantity purchased = quantity used
- ✓ **Mix**: $\sum (SM - AM) \times AMU \times SP$, over the materials
AMU = total actual quantity used
- ✓ **Yield**: $\sum (SMU - AMU) \times SM \times SP$, over the materials
SMU = standard usage for actual output; usage = mix + yield

Variable overhead (VOH)

- ✓ **Standard VOH rate** = $\frac{\text{budgeted VOH}}{\text{budgeted hours}}$
The driver is usually labor hours
- ✓ **Spending**: $(SR - AR) \times AH$
- ✓ **Efficiency**: $(SH - AH) \times SR$
- ✓ **Cost (total)**: $(SH \times SR) - (AH \times AR)$
= spending + efficiency

Sales variances

- ✓ **Total**: actual sales – master budget sales = price + volume
- ✓ **Price**: $(AP - BP) \times \text{actual units}$
Actual – flexible budget; favorable if the actual price > budget
- ✓ **Volume**: $(\text{actual} - \text{budgeted units}) \times BP$
Flexible – master budget; splits into mix + quantity
- ✓ **Mix**: $(AM - SM) \times \text{total actual units} \times BP$
- ✓ **Quantity**: $(\text{total actual} - \text{total budgeted units}) \times SM \times BP$
- ✓ Substitute contribution margin for price → **sales-margin variances**

Flexible budgets

- ✓ **Flexible budget**: recalculates revenues and activity-dependent costs at actual activity using budgeted prices and rates; fixed costs remain unchanged; uses the standard input *allowed* for actual output (e.g., standard hours), not actual usage
- ✓ **Flexible-budget variance** = actual – flexible budget; isolates performance from the sales-volume effect; splits into input price (rate) + input quantity (efficiency)

Labor variances

- ✓ **Rate**: $(SR - AR) \times AH$
HR/personnel responsibility
- ✓ **Efficiency**: $(SH - AH) \times SR$
SH = standard hours for actual output
- ✓ **Cost (total)**: $(SH \times SR) - (AH \times AR)$
= rate + efficiency
- ✓ **Mix and yield**: as for materials (AHU = total actual hours).
Efficiency = mix + yield

Fixed overhead (FOH)

- ✓ **SFR** = $\frac{\text{budgeted FOH}}{\text{budgeted hours}}$
Absorbed FOH = SFR × standard hours (or units) for actual output
- ✓ **Cost (total)**: absorbed FOH – actual FOH
= spending + production volume
- ✓ **Spending (budget)**: budgeted FOH – actual FOH
- ✓ **Production volume**: absorbed FOH – budgeted FOH
Splits into capacity + efficiency when FOH is applied on hours rather than units
- ✓ **Capacity**: $(SFR \times AH) - (SFR \times BH)$
Favorable if AH > BH
- ✓ **Efficiency**: $(SFR \times SH) - (SFR \times AH)$
Favorable if SH > AH