

Gross Margin Variance Analysis

When a company improves their Gross Margin, they may wonder whether this was due to an increase in their sales (due either to an increase in volume or price), or a reduction in their cost of goods sold (COGS). To assess where the improved Gross Margin has come from, variance analysis can be employed similar to the material price variance and material quantity variance used in managerial accounting.

	Year 2	Year 1	Δ	Year 2	Year 1
Sales	\$200	\$150	\$50	S ₂	S ₁
COGS	\$90	\$80	\$10		
Gross Margin	\$110	\$70	\$40		
Gross Profit Margin	55%	47%	8%	PM ₂	PM ₁

ΔGross Profit Due to:

$$\Delta \text{ Sales Volume } \$23.33 = PM_1 \times (S_2 - S_1)$$

$$\Delta \text{ Margin } \$16.67 = S_2 \times (PM_2 - PM_1)$$

\$40.00

By using the variance formulas $\Delta \text{ Sales Volume} = PM_1 \times (S_2 - S_1)$ and $\Delta \text{ Margin} = S_2 \times (PM_2 - PM_1)$, an approximation can be made as to what contributed to the Gross Margin increase of \$40 from Year 1 to Year 2.

There are two important things to note though:

1. The sales volume increase may be due to either an increase in sales price or sales volume, and this can only be determined by a more fundamental analysis of your sales.
2. The Gross Margin increase could be due to either an increase in the price, or reduction in the COGS, and this can only be determined by further analysis of per unit price and cost.

The objective is to increase Gross Margin through either an increase in price, an increase in sales volume, or a decrease in COGS. If $\Delta \text{ Sales Volume}$ has increased due to price, then the sales staff should not be rewarded for this unless they are directly responsible for the price increase through value selling. And if Gross Margin is improved through the reduction in COGS, then any employee directly responsible for this should be rewarded at the same compensation level that a sales person would receive for an equivalent increase in sales. Cost reduction is just as valuable as sales, but is seldom recognized and rewarded.