Two useful financial analysis tools are the following:

- Horizontal analysis
- Vertical analysis

Horizontal and vertical analysis are both types of common-size analysis, which express financial statement data in percentages that allow comparisons in a more meaningful way than using absolute dollar amounts. The major limitation to using dollar amounts for comparisons is that a small change in amount can result in a very substantial percentage change. For example, if a firm has profits of $100,000 last year and it increases to $150,000 this year, this is a 50% increase. That is more meaningful than saying the firm's profits increased by $50,000. Another firm may have had sales of $10,000 last year and an increase of $50,000 this year, which would be a 500% increase.

**Vertical Analysis**

Vertical analysis compares each amount with a base amount selected from the same year—an up-down evaluation of the accounts. For example, on a vertical analysis of an income statement, if the sales of $100,000 are used as the base amount, the selling expense of $5,000 would be shown as 5% of sales.

The vertical analysis compares each income statement line item with revenues for the same year. In this example, this easily allows one to see that although the revenue increased from $92,000 in 2010 to $125,000 in 2012, the net income percentage has declined from 7.4% of revenue in 2010 to 6.4% of revenue in 2012.

The vertical analysis also allows one to compare each expense. In this example, it will help determine which items are resulting in the decreased net income. For instance, cost of goods sold has become 65% of revenue in 2012 versus 63% of revenue in 2010. This appears to be the biggest driver of the increased expenses over the 3-year period.

**Horizontal Analysis**

Horizontal analysis compares each amount with a base amount for a selected base year. For example, if sales were $100,000 in 2011 and $150,000 in
2012, then sales increased to 150% of the 2011 level, an increase of 50%.

Comparing each income statement line item for 2012 and 2011 with the same line items for 2010 allows you to see the growth in revenue and growth in expenses by line item. For instance, 2012 revenue is 135.9% of 2010 revenue. Alternatively, 2012 revenue has grown by 35.9% over 2010 revenue. Likewise, gross profit in 2012 is 140.2% of the gross profit in 2010. Similarly, net income in 2012 is 156.6% of 2010 net income.

**Ensuring Analysis Accuracy**

When preparing any analysis, it important to have a way to tie out, or double-check the numbers to ensure the accuracy of the analysis. This is quite evident with the vertical common-size analysis of the income statement. Note that the 2012 revenue of 100% less the cost of goods sold of 65% equals the gross profit of 35%. Likewise, the 2012 selling expense of 10.4% plus the general expense of 12.4% equals the total operating expenses of 22.8%.

When analyzing a balance sheet, it is customary to express total assets (or liabilities plus equity) as 100%.

- This vertical analysis shows each balance sheet account as a percentage of total assets.
- The horizontal analysis expresses 2012 and 2011 growth over the base year of 2010.

As with the income statement common-size analysis, it is important to tie out the numbers to verify the analysis. Note that the total assets, as well as the total liabilities and equity, total 100%.