

WHAT IT IS[Return to Table of Contents](#)

Trend analysis seeks out and examines systematic historical patterns in financial statements or other quantitative data. Such analysis of data over time can vary from primarily descriptive techniques to more complex cause-and-effect methods. This module minimizes discussion of cause-and-effect analysis and focuses on the descriptive methods of trend analysis and two closely related analytical techniques -- fluctuation analysis and common-size statements analysis. (See the modules on [Inferential Statistics](#) and [Ratio Analysis](#) for additional related information.)

- **Trend analysis** usually involves choosing one fiscal period as a base period and then expressing subsequent quantities as a percentage of the data associated with this base period. In the case of an income statement, changes in all items could be assessed in relation to the base period. Significant changes can then be investigated further. Note that trend analysis can be performed to determine changes in the number of physical units as well as dollar amounts.
- **Fluctuation analysis** is closely related to trend analysis and consists of comparing the absolute and percentage differences of current period balances to those of prior periods. Variances may then be further explored for their causes, effects, and reasonableness.
- **Common-size statements analysis** expresses balance sheet components as a percentage of total assets and income statement components as a percentage of total revenue. This approach facilitates identifying deviations in the components of statements by focusing on relative differences through time.

It is not uncommon to combine these analyses in the same table or spreadsheet. These techniques generally compare the entity to itself. However, it is also possible to compare the entity to external points of reference through cross-sectional analysis. This type of analysis compares the data being audited to an external norm or data generated by a similar external entity. However, examining data over time is generally not part of cross-sectional analysis.

Trend analysis as described here is related to a broader discipline called “time-series analysis.” Time-series analysis may involve more advanced analysis techniques such as:

- ARIMA, which aids in detecting seasonal patterns and fluctuations
- Fourier, which reduces time-series information into underlying wave forms
- Time-lagged correlation, when a time lag exists between the predictor and dependent variables -- for example, between advertising and sales

These types of analysis may involve forecasting (via regression analysis), cyclic adjustments, exponential or linear smoothing, and moving averages. For further information on these techniques, refer to the resources, particularly books, listed at the end of the Data Analysis section.

WHEN TO USE IT

Trend analysis is valuable when one wants to use historical data to predict future values or to calculate expected values for comparison to actual current values. Trend analysis is also useful for identifying unexpected variances that may indicate strategic or operational changes or entity weaknesses worthy of additional exploration and analysis.

HOW TO PREPARE IT

The following is an example of a simple trend analysis:

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Fund Equity	335,398	366,044	361,704	234,666	192,921
% Change	--	8.37%	-1.20%	-54.14%	-21.64%

The following is an example of a common size statement:

<u>Liabilities and Equity</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Accounts Payable	16%	19%	15%	3%
Other Current Liabilities	10%	14%	12%	11%
Long -Term Debt	20%	18%	27%	32%
Deferred Revenue	6%	7%	6%	7%
Fund Balance	48%	42%	40%	47%

ADVANTAGES

Trend analysis can:

- reveal potentially fruitful areas of audit investigation
- detect significant variations over time
- be easily understood and communicated
- be readily accepted due to its widespread use

DISADVANTAGES

Trend analysis can:

- provide little insight into the root causes of variations
- fail to indicate what the entity's normal or benchmark position is
- be undermined by frequent changes in financial reporting formats
- be heavily influenced by the choice of the base fiscal period