

Horizontal Vertical and Common Size Analysis of Financial Statements

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Abstract

Financial statements contain large amounts of information, but raw figures do not explain whether an organization is improving, weakening, or changing its financial structure. Horizontal, vertical, and common-size analysis provide systematic methods for interpreting the income statement, balance sheet, and cash-flow statement. Horizontal analysis compares amounts across accounting periods to identify changes and trends. Vertical analysis expresses each item as a percentage of a base amount within the same period. Common-size statements apply vertical percentages consistently, allowing analysts to compare firms of different sizes and evaluate changes in financial composition. This essay explains the calculations, interpretation, uses, and limitations of each method. A worked example demonstrates how the methods reveal revenue growth, margin pressure, asset structure, leverage, and cash-flow quality. The essay argues that financial-statement analysis should combine trend and structural analysis with ratios, footnotes, cash-flow review, industry context, inflation, and accounting-policy assessment. Percentages are analytical signals rather than conclusions, and meaningful interpretation requires understanding the economic events behind them. (Fridson & Alvarez, 2022; Robinson et al., 2020)

Keywords: horizontal analysis, vertical analysis, common-size financial statements, financial statement analysis, trend analysis

Introduction

Financial statements summarize an organization's financial position and performance. The income statement reports revenue, expenses, and profit over a period. The balance sheet presents assets, liabilities, and equity at a point in time. The statement of cash flows explains changes in cash through operating, investing, and financing activities. These statements are essential, but they do not interpret themselves. (Financial Accounting Standards Board, 2021; International Accounting Standards Board, 2018)

An amount may appear large because the company itself is large. Revenue may increase while profit margins decline. Assets may grow because the business invested productively, accumulated slow-moving inventory, or acquired another company. Analysts therefore use comparative methods to place figures in context. (Fridson & Alvarez, 2022; Subramanyam, 2014)

Horizontal analysis focuses on change across time. Vertical analysis focuses on the relationship of each item to a base figure within a period. Common-size statements use standardized percentages to make structural and cross-company comparison easier. Used together, these methods provide a clearer picture than any one technique alone. (Robinson et al., 2020)

Foundation of Financial Statement Analysis

Analysis should begin with reliable statements prepared under an appropriate reporting framework. The analyst should identify the reporting period, currency, accounting policies, audit status, and whether the statements are consolidated. Notes to the accounts are essential because they explain estimates, classifications, commitments, contingencies, and unusual transactions. (Financial Accounting Standards Board, 2021; International Accounting Standards Board, 2018)

The fundamental accounting equation is:

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

The performance relationship is commonly expressed as:

$$\text{Profit or loss} = \text{Income} - \text{Expenses}$$

These concepts are explained more fully in [basic accounting concepts every business owner should understand](#). Financial analysis builds on this foundation by comparing amounts and relationships. (Financial Accounting Standards Board, 2021)

Horizontal Analysis

Horizontal analysis compares a financial-statement item across two or more periods. It may show the absolute change, percentage change, or index trend relative to a base year. (Fridson & Alvarez, 2022; Robinson et al., 2020)

The absolute change is calculated as:

$$\text{Current-period amount} - \text{Previous-period amount}$$

The percentage change is:

$$\text{Absolute change} \div \text{Previous-period amount} \times 100$$

If revenue increased from \$800,000 to \$920,000, the absolute increase is \$120,000 and the percentage increase is 15 percent. The calculation becomes less meaningful when the previous amount is zero, very small, or negative. In such cases, the analyst should explain the change rather

than present a misleading percentage. (Subramanyam, 2014)

Trend Analysis Over Several Years

A two-year comparison may be affected by a temporary event. Trend analysis extends horizontal analysis across several periods. The analyst selects a base year and assigns its amount an index of 100. Later amounts are expressed relative to the base. (Robinson et al., 2020)

If base-year revenue is \$800,000 and revenue three years later is \$1,000,000, the trend index is 125. This indicates that revenue is 25 percent above the base-year level. Separate trend indices for sales, expenses, receivables, inventory, debt, and cash can reveal whether related items are moving consistently.

For example, inventory growing much faster than sales may suggest overstocking, weak demand, supply-chain decisions, or preparation for expected growth. Accounts receivable increasing faster than revenue may indicate slower collection or looser credit terms. These are signals for investigation, not automatic proof of a problem. (Penman, 2013; Subramanyam, 2014)

Advantages of Horizontal Analysis

Horizontal analysis helps identify growth, contraction, volatility, and unusual movements. It supports budgeting, forecasting, management review, lending decisions, and investment analysis. Because the same accounts are compared across time, the method can reveal gradual changes that are difficult to notice in a single statement. (Fridson & Alvarez, 2022)

It is particularly useful when the analyst connects related items. Revenue growth should be compared with cost of sales, operating expenses, receivables, cash from operations, and capital expenditure. Profit growth without operating cash-flow growth may require closer examination. (Penman, 2013)

Limitations of Horizontal Analysis

Comparability can be weakened by acquisitions, disposals, changes in accounting policy, reclassification, currency movements, inflation, changes in year-end date, and exceptional events. A percentage increase may also look dramatic when the base amount is small. (Robinson et al., 2020)

Analysts should verify whether prior periods have been restated and whether continuing operations are separated from discontinued activities. They should also consider whether growth is organic or acquisition-driven. (Fridson & Alvarez, 2022)

Vertical Analysis

Vertical analysis expresses each line item as a percentage of a selected base amount in the same financial statement. On the income statement, net sales or revenue is usually the base. On the balance sheet, total assets is commonly used. Total liabilities and equity may also serve as the base for the financing side of the balance sheet. (Robinson et al., 2020; Subramanyam, 2014)

The formula is:

$$\text{Individual item} \div \text{Base amount} \times 100$$

If cost of sales is \$552,000 and revenue is \$920,000, cost of sales represents 60 percent of revenue. If inventory is \$180,000 and total assets are \$900,000, inventory represents 20 percent of total assets.

Vertical Analysis of the Income Statement

An income statement expressed as percentages of revenue shows how each sales dollar is allocated. Cost of sales reveals the proportion consumed by production or purchasing. Gross profit indicates the amount remaining before operating costs. Selling, administrative, interest, and tax expenses show further claims on revenue. (Fridson & Alvarez, 2022)

Suppose Company A reports the following results:

Income statement item	Year 1	Year 1 percentage	Year 2	Year 2 percentage
Revenue	\$800,000	100%	\$920,000	100%
Cost of sales	\$464,000	58%	\$552,000	60%
Gross profit	\$336,000	42%	\$368,000	40%
Operating expenses	\$240,000	30%	\$294,400	32%
Operating profit	\$96,000	12%	\$73,600	8%

Revenue increased by 15 percent, but the operating margin fell from 12 percent to 8 percent. Both cost of sales and operating expenses consumed a larger share of revenue. Horizontal analysis alone might emphasize growth, while vertical analysis reveals deteriorating profitability.

Vertical Analysis of the Balance Sheet

A common-size balance sheet shows the composition of assets and financing. Cash, receivables, inventory, property, intangible assets, debt, and equity are expressed as percentages of total assets. (Robinson et al., 2020)

A rising inventory percentage may indicate expansion, inefficient stock management, or changing product mix. A declining cash percentage may be acceptable if funds were invested productively, but concerning if liquidity is weakening. A higher debt percentage may increase financial risk, although the impact depends on interest rates, cash flow, maturity, and the stability of earnings. (Penman, 2013)

Balance-sheet percentages should be considered with industry characteristics. A manufacturer may require substantial property and inventory. A software company may report fewer physical assets but significant intangible assets or research expenditure. (Subramanyam, 2014)

Common Size Financial Statements

A common-size statement is a financial statement in which each amount is expressed as a percentage of a common base. In practice, common-size analysis is often the formal presentation of vertical analysis. Its value lies in standardization. (Fridson & Alvarez, 2022)

Standardized percentages allow comparison between a small company and a much larger competitor. If two retailers report gross margins of 25 percent and 40 percent, the difference can be examined without being distracted by absolute revenue size. The analyst can investigate pricing, product mix, supplier terms, inventory losses, and business model. (Robinson et al., 2020)

Common-size statements also make multi-year structural changes visible. A company may shift from equity financing toward debt, from physical assets toward intangibles, or from production costs toward marketing and technology. (Subramanyam, 2014)

Common Size Cash Flow Analysis

The cash-flow statement can also be standardized, although practice varies. Items may be expressed as percentages of revenue, total cash inflows, or another clearly stated base. The analyst must explain the method because unlike the income statement and balance sheet, there is no single universally accepted base for every cash-flow comparison. (Robinson et al., 2020)

Operating cash flow as a percentage of revenue can help assess cash conversion. Capital expenditure as a percentage of revenue may indicate the investment intensity of the business. Financing inflows can show reliance on borrowing or new equity.

Cash-flow analysis is especially important because profit includes accruals and estimates. A business can report profit while experiencing cash pressure from receivables, inventory, debt service, or capital spending. (Penman, 2013)

Comparing the Three Methods

Method	Main question	Typical calculation	Primary use
Horizontal analysis	How has an item changed over time?	Current amount compared with prior period	Growth and trend analysis
Vertical analysis	What proportion of the statement does an item represent?	Item divided by base amount	Structure and margin analysis
Common-size analysis	How can statements be standardized for comparison?	All items shown as percentages of a common base	Cross-company and multi-year comparison

The methods are complementary. Horizontal analysis may reveal that operating expenses increased by 22 percent. Vertical analysis may show that expenses rose from 30 to 32 percent of revenue. Industry comparison may then show whether 32 percent is unusually high. (Fridson & Alvarez, 2022; Robinson et al., 2020)

Using Ratios With Common Size Analysis

Percentages should be combined with liquidity, profitability, efficiency, and solvency ratios. Current and quick ratios evaluate short-term capacity. Gross, operating, and net margins evaluate profitability. Inventory turnover and receivables collection examine resource use. Debt ratios and interest coverage assess financial risk. (Subramanyam, 2014)

No ratio has one correct value for all organizations. Industry, strategy, economic conditions, accounting choices, and business maturity influence interpretation. Ratios are strongest when compared with prior periods, budgets, competitors, and industry benchmarks. (Robinson et al., 2020)

Importance of Notes and Accounting Policies

A change in percentages may result from accounting rather than economics. Revenue recognition, inventory valuation, depreciation, impairment, lease accounting, capitalization, provisions, and fair-value measurement can affect reported amounts. (Financial Accounting Standards Board, 2021; International Accounting Standards Board, 2018)

The notes may reveal that a margin decline resulted from restructuring, litigation, foreign-exchange effects, or a new acquisition. Analysts should separate recurring operations from unusual items where possible, while avoiding arbitrary adjustments designed to create a preferred result. (Fridson & Alvarez, 2022)

Inflation and Currency Effects

Historical-cost statements may become difficult to compare during periods of high inflation. Revenue and expenses from different periods reflect different purchasing power. Asset values may also remain based on older costs. Analysts may supplement reported data with inflation-adjusted information where appropriate. (Robinson et al., 2020)

Multinational companies face translation effects. A foreign subsidiary can perform well in local currency while reporting lower translated revenue because exchange rates changed. Constant-currency disclosures may help, but the methodology should be reviewed. (Subramanyam, 2014)

Earnings Quality and Cash Conversion

Financial analysis should examine whether reported earnings are supported by cash and sustainable operations. Warning signals may include receivables or inventory growing much faster than sales, recurring “one-time” adjustments, declining operating cash flow, aggressive capitalization, or rising debt despite reported profit. (Penman, 2013; Fridson & Alvarez, 2022)

These signals are not proof of manipulation. Growth businesses may invest in working capital, and seasonal patterns can create temporary differences. The analyst should investigate the explanation and consistency across periods. (Subramanyam, 2014)

Practical Analysis Process

A structured process can improve reliability:

1. Obtain comparable audited or reliable financial statements and notes.
2. Confirm periods, currency, consolidation, and accounting policies.

3. Calculate absolute and percentage horizontal changes.
4. Prepare common-size income statements and balance sheets.
5. Identify material and unusual movements.
6. Compare related accounts and cash flows.
7. Calculate selected ratios.
8. Compare results with strategy, budget, industry, and economic conditions.
9. Investigate notes and management explanations.
10. Document conclusions, assumptions, and limitations.

Limitations and Risk of Misinterpretation

Financial analysis is based largely on historical information. It may not capture employee capability, customer loyalty, product quality, technological disruption, or future regulation. Comparisons across companies may be distorted by different accounting policies and business models. (Fridson & Alvarez, 2022; Robinson et al., 2020)

Percentages can also hide scale. A company with a 10 percent margin on \$10 million revenue has a different capacity from a company with the same margin on \$10 billion. Common-size analysis standardizes structure but does not eliminate the importance of absolute amounts. (Subramanyam, 2014)

Analysts should avoid causal claims based only on numerical association. A rising marketing percentage may reduce profit in the current period while supporting future growth. Interpretation requires evidence about management decisions and market conditions. (Penman, 2013)

Conclusion

Horizontal, vertical, and common-size analysis transform financial statements into more useful comparative information. Horizontal analysis identifies changes over time. Vertical analysis reveals the internal structure of a statement. Common-size presentation supports comparison across periods and organizations of different sizes. (Fridson & Alvarez, 2022; Robinson et al., 2020)

The methods are most valuable when used together and supported by ratio analysis, cash-flow review, footnotes, industry knowledge, and economic context. A percentage is not a final judgment. It identifies a relationship that must be explained. Careful financial analysis therefore combines accurate calculation with disciplined interpretation. (Penman, 2013; Subramanyam, 2014)

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