Horizontal Analysis Vs Vertical Analysis: How To Use Them To Drive Business Success

There’s a wealth of data lurking inside your company’s financial statements—and if you know how to analyze it effectively, you can transform financial information into actionable insights.

Two of the most common, and effective, ways to do so are *horizontal analysis* and *vertical analysis*.

Taking a closer look at horizontal analysis and vertical analysis can help you understand the capabilities and limitations of each, as well as the best ways to use both to drive growth and competitive strength, identify areas in need of improvement, and reveal potential cost savings.

Horizontal Analysis vs. Vertical Analysis: A Powerful Pair of Data Tools

Today's economy is undergoing constant and significant change thanks to digital disruption, complex globe-spanning phenomena like climate change and the COVID-19 pandemic, and the ever-expanding impact (and importance) of Big Data.

To compete effectively and strategically, it's important for businesses of all sizes to make use of the tools at their disposal. Both horizontal and vertical analysis each have a role to play in a company's financial management, business process management, and overall strategic and competitive planning.

Horizontal Analysis

Also known as *trend analysis*, this method is used to analyze financial trends that occur across multiple accounting periods over time—usually by the quarter or year. It's often used when analyzing the income statement, balance sheet, and cash flow statement.

Generally speaking, the greatest utility of horizontal analysis lies in mining insights gleaned from comparing changes to specific line items over time, identifying and targeting both opportunities and potential disasters and reacting accordingly.

You can use horizontal analysis to examine (for example) your company's profit margins over time, and create strategic spend projections to match projected revenue growth or hedge against seasonality or increased cost of materials.

You can examine the data from horizontal analysis in a number of ways, depending on your goals.

Three of the most common include:

1. **Direct Comparison**, which is a straightforward comparison of two periods to one another in the original format (e.g., dollar amounts). So if revenue for Q1 of 2019 was $4,700,000 and Q2 revenue was $3,200,000, the difference of $1,500,000 is where you would start looking for answers (e.g., does the business have a strong seasonal component, have costs risen or sales fallen due to disruptions, etc.)

2. **Variance**, which is useful in establishing positive or negative changes between periods based on comparison to the average of the squared difference from the mean for the total time measured. Let's say you're analyzing revenue for a three-year period.

- *2017 revenue was $4,500,000.*
- *2018 revenue was $5,300,000.*
- *2019 revenue was $6,000,000.*

The mean of these three values is $5,266,700. After squaring the differences and adding them up, then dividing by the total number of items, we find that the variance is $5,633,400.

Taking the square root of that, we get the standard deviation, which is $750,600.

The average growth over the period measured is $750,600 each year.

This method is particularly useful for both internal analysis to identify areas of growth *and* external analysis by investors or lenders who want to see demonstrable growth before committing their resources to your business.

3. **Percentage**, which provides the option for greater granularity within horizontal analysis. Using this approach, the first value measured is considered the "base period" value, and all other values are compared against it, line by line. Revisiting our previous example, we see:

2017 Revenue (Base Value): $4,500,000.

2018 Revenue: $5,300,000.

2019 Revenue: $6,000,000.

By calculating the difference and converting to percentages, we can quickly create a thumbnail snapshot of revenue growth or contraction.

$5,300,000 – $4,500,000 = $800,000

$800,000 ÷ $4,500,000 x 100 = 17.8% revenue growth from 2017 to 2018

Using the same approach, we can do the same for 2019:

$6,000,000 – $4,500,000 = $1,500,000

$1,500,000 ÷ $4,500,000 x 100 = 33.33% revenue growth from 2017 to 2019.

Horizontal analysis can be very useful in answering common questions whose answers are critical to strategic planning and effective use of working capital, including:

- Is net income growing or shrinking?
- Has the cost of goods sold (COGS) risen or fallen?
- How much has revenue grown compared to last quarter? Last year?
- Which areas of our business have changed the most in the past quarter/year/etc.?
- Is our company managing liquidity well enough to cover our outstanding debts?

The more periods you have to compare, the more robust your data set will be, and the more useful the insights gathered.

Note: *In order to be accurate and effective, horizontal analysis must be*

performed on complete and accurate data from reliable sources.

A consistent, centralized, and optimized data management environment goes a long way toward ensuring the insights and opportunities you gather from horizontal analysis are legitimate and useful.

Implementing an eProcurement solution like PLANERGY can help you centralize and organize all your financial information, eliminate common roadblocks to data transparency (including rogue spend and invoice fraud), and ensure all your stakeholders are connected and collaborating using complete, accurate, and secure data in real time.

> *Also like horizontal analysis, vertical analysis can be useful in external as well as internal analysis. Two companies with vastly different financial profiles (e.g., a $10 million company and a $10 billion dollar international corporation) can still be meaningfully compared by reducing their financials to percentages.*

Vertical Analysis

Like horizontal analysis, vertical analysis is used to mine useful insights from your financial statements. It can be applied to the same documents, but is exclusively percentile-based and travels (as the name implies) vertically within each period across periods, rather than horizontally across periods.

So, for example, when analyzing an income statement, the first line item, sales, will be established as the base value (100%), and all other account balances below it will be expressed as a percentage of that number.

Let’s review a very simple example of vertical analysis:

XYZ Incorporated Vertical Analysis			
	2017	**2018**	**2019**

Sales	$25,000,000	$27,500,000	$35,000,000
COGS	$12,500,000	$14,000,000	$19,000,000
GROSS PROFIT	**$12,500,000**	**$13,500,000**	**$16,000,000**
Salaries	$4,500,000	$4,800,000	$6,000,000
Marketing	$1,100,000	$1,100,000	$1,900,000
Rent	$2,000,000	$2,000,000	$2,000,000
Utilities	$300,000	$300,000	$300,000
Misc. Expenses	$500,000	$750,000	$680,000
TOTAL EXPENSES	**$8,400,000**	**$8,950,000**	**$10,880,000**
NET INCOME	**$4,100,000**	**$4,550,000**	**$5,120,000**

If we convert these values to percentages, our new chart looks like this:

XYZ Incorporated Vertical Analysis			
	2017	**2018**	**2019**
Sales	100%	100%	100%
COGS	50%	51%	54%
GROSS PROFIT	**50%**	**49%**	**46%**
Salaries	18%	17.5%	17.2%
Marketing	4.4%	4%	5.5%
Rent	8%	7.3%	5.8%
Utilities	1.2%	1%	.9%

Misc. Expenses	2%	2.7%	1.9%
TOTAL EXPENSES	**33.6%**	**32.6%**	**31.3%**
NET INCOME	**16.4%**	**16.4%**	**14.7%**

Based on this financial statement analysis, it's clear that while the company's gross profits are growing, and total gross sales are increasing over previous years, they're being hampered by concurrent increases elsewhere, including cost of goods sold.

The result? A shrinking profit margin that might spell trouble ahead.

Clearly, further investigation is required. This could take the form of a deep dive into internal processes to identify pain points and bottlenecks that are hampering efficiency (and increasing costs!), or supply chain management to look for opportunities to source essential raw materials at better pricing or terms.

In fact, this single vertical analysis could be the starting point for a much larger analysis of internal workflows (e.g., the procure-to-pay (P2P) process) to implement system-wide changes that will increase profits and value while slashing both hard and soft costs.

Another similarity to horizontal analysis is vertical analysis' utility during external as well as internal analysis.

Two companies with vastly different financial profiles (e.g., a $10 million company and a $10 billion dollar international corporation) can still be meaningfully compared by investors and lenders by using the base year system and rendering their financial performance as percentage changes against a base figure.

One major difference between horizontal and vertical analysis is the depth of their

utility with regard to answering "why" as well as "how." Vertical analysis excels at providing useful snapshots of trends within financial statements, but does not provide easy answers for why those trends are occurring.

Further analysis via horizontal analysis will likely be required to unlock those insights, and make use of them in a strategic way.

Up, Down, and All Around, Financial Analysis Helps Your Company Succeed

To make the best use of your financial data, you need a robust toolkit with plenty of options for slicing and dicing information in meaningful ways.

By taking the time to understand how horizontal analysis and vertical analysis work, you can use them to harvest valuable insights from your data and improve your business process optimization, achieve or improve strategic spending, and chart a profitable course for the financial future.

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