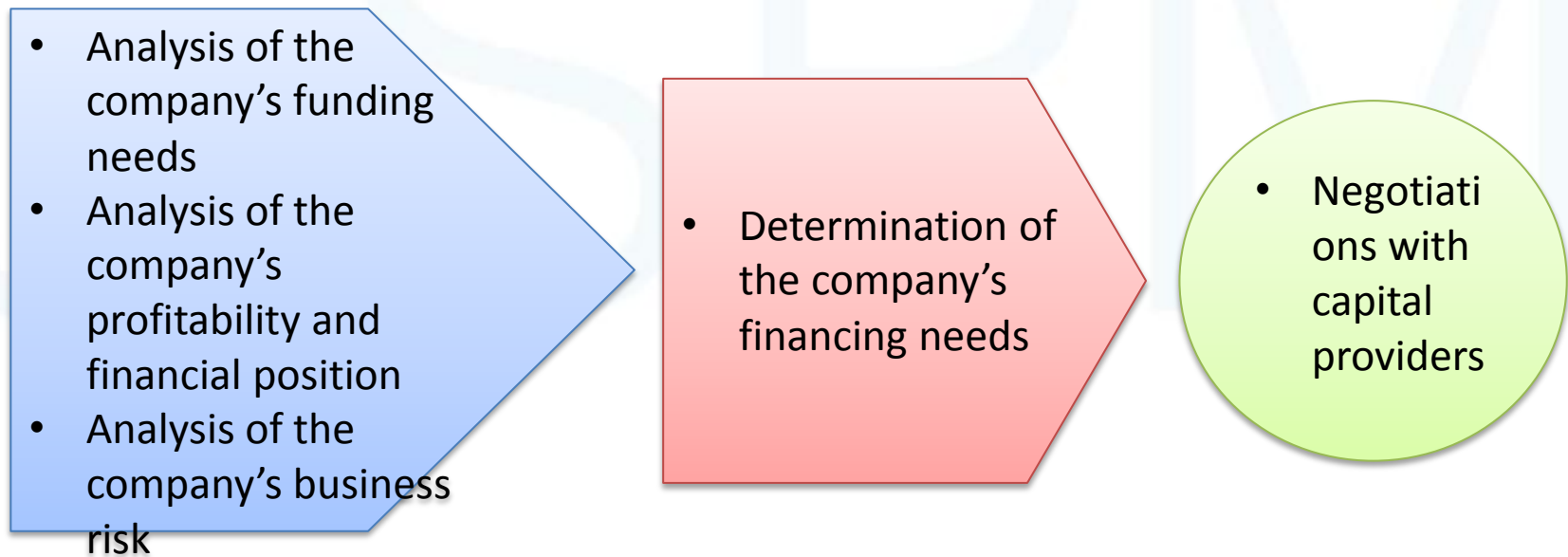


Analysis of the Financial Reports



Reference Framework for Financial Analysis



Van Horne, James

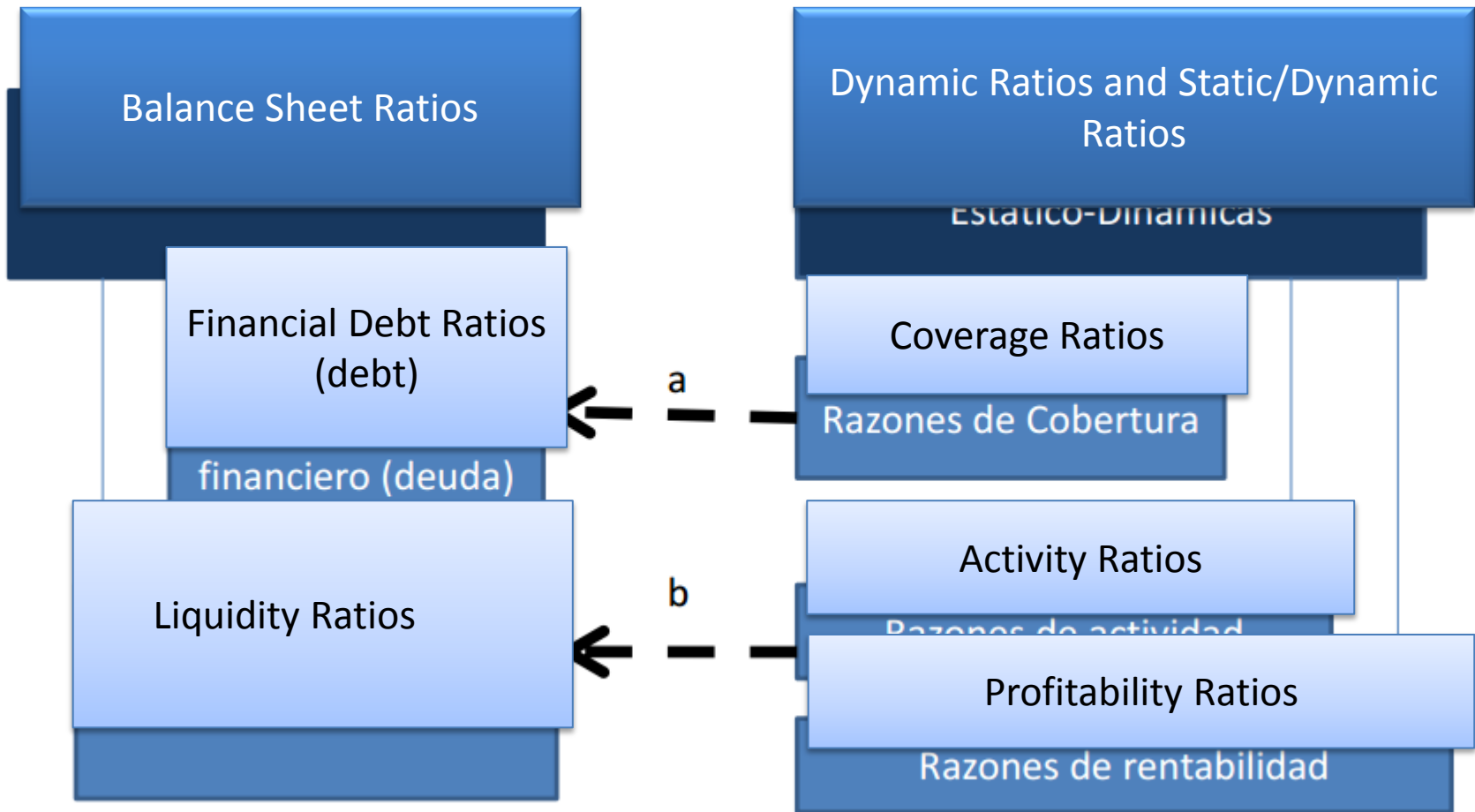
Reference Framework for Financial Analysis

- The conceptual framework is presented for considerations requiring outside funding.
- The financial analyst needs to “verify” several aspects of a company’s financial health to evaluate its financial performance and situation.

Financial Ratios

- Analysis of the financial ratios includes the following comparisons:
 - Comparing the current ratio with earlier ratios and those expected in the future
 - Comparing the company's ratios with those of similar companies or industry averages at the same point in time

Types of Ratios



- a) Coverage ratios also throw light on the significance of the financial leverage (debt) used by the company.
- b) Activity ratios based on inventory and accounts receivable also throw light on the liquidity of these current assets.

Balance Sheet Ratios

Financial Leverage Ratios

$$\text{Liability to Shareholder equity ratio} = \frac{\text{total liability}}{\text{shareholder equity}}$$

This serves to estimate the degree to which the company uses borrowed money.

$$\text{Debt to total assets ratio} = \frac{\text{total debt}}{\text{total assets}}$$

This highlights the relative importance of debt financing for the company by showing the percentage of company assets maintained by debt financing.

$$\text{Long-term capitalization ratio} = \frac{\text{long-term liabilities}}{\text{total capitalization}}$$

This ratio indicates the relative importance of long-term liabilities in the company's capital structure (long-term financing).

Note: Capitalization is the sum of long-term liabilities plus capital

Balance Sheet Ratios

Liquidity Ratios

These are used to judge the company's ability to cover its short-term obligations.

Current asset ratio =

current assets

current liabilities

This shows a company's ability to cover its current liabilities with its current assets.

Acid test ratio =

(current assets-inventory)

current liabilities

This shows a company's ability to cover its current liabilities with its more liquid assets

Profit & Loss Statement / Balance Sheet Ratios

- **Coverage Ratios**

These relate a company's financial charges to its ability to service or cover them.

Interest coverage ratio =

profits before interest and
taxes

interest expenses

This serves as a measure of the company's ability to cover its interest payments and thus avoid bankruptcy.

Profit & Loss Statement / Balance Sheet Ratios

- **Activity Ratios**

These measure how effectively the company uses its assets

Accounts receivable activity =

Annual credit sales

Sales receivable

This provides information on the quality of the company's accounts receivable and how successful it is in collecting.

Accounts receivable turnover=

(account receivable x days in the year)

Annual credit sales

This indicates the average number of days that accounts receivable remain outstanding.

Length of accounts payable =

(account payable x days in the year)

Credit purchases per year

This ratio gives the average age of a company's accounts payable.

- **Activity Ratios**

Inventory activity =

$$\frac{\text{Cost of merchandise sold}}{\text{Inventory}}$$

This tells us how quickly the inventory turns over by converting into accounts receivable through sales during the year.

Operating cycle =

$$\text{inventory turnover in days} + \text{accounts receivable turnover in days}$$

This is the amount of time that transpires from when the cash purchase commitment is made to when the accounts receivable resulting from the sale of goods or services are collected.

Profit & Loss Statement / Balance Sheet Ratios

- **Profitability Ratios**

These relate earnings to sales and investment.

Return on sales =

gross profit

net sales

This indicates the company's profit with respect to sales after deducting the cost of producing the sold merchandise.

Return on investment =

net profit after taxes

total assets

This measures the overall effectiveness for generating earnings with available assets – the ability of the invested capital to generate earnings.

Return on capital in common stock =

net profit after taxes

shareholders capital

This measures the shareholders' investment in book value.

Sample Case

Balance Sheet for Aldine Manufacturing (in thousands)

ASSETS	YEAR 20x2	YEAR 20x1
Cash and cash equivalents	\$178.00	\$175.00
Accounts receivable	\$678.00	\$740.00
Inventory at merchandise cost or less	\$1,329.00	\$1,235.00
Expenses payable in advance	\$21.00	\$17.00
Early accrued interest payments	\$35.00	\$29.00
Total current assets	\$2,241.00	\$2,196.00
Fixed assets at cost	\$1,596.00	\$1,538.00
Minus accrued depreciation	-\$857.00	-\$791.00
Total net assets	\$739.00	\$747.00
Long-term investment	\$65.00	-
Other long-term assets	\$205.00	\$205.00
Total assets	\$3,250.00	\$3,148.00
LIABILITIES AND SHAREHOLDERS EQUITY	YEAR 20x2	YEAR 20x1
Bank loans and promissory notes payable	\$448.00	\$356.00
Accounts payable	\$148.00	\$136.00
Accrued interest	\$36.00	\$127.00
Other accrued liabilities	\$191.00	\$164.00
Current liabilities	\$823.00	\$783.00
Long-term debt	\$631.00	\$627.00
Total liabilities	\$1,454.00	\$1,410.00
Shareholders' equity:		
Common stock	\$421.00	\$421.00
Additional paid-in capital	\$361.00	\$361.00
Retained earnings	\$1,014.00	\$956.00
Total shareholders' equity	\$1,796.00	\$1,738.00
Total liabilities and shareholders' equity	\$3,250.00	\$3,148.00

Profit & Loss Statement for Aldine Manufacturing (in thousands)

	YEAR 20x2	YEAR 20x1
Net sales	\$3,992.00	\$3,721.00
Cost of merchandise sold	\$2,680.00	\$2,500.00
Gross profit	\$1,312.00	\$1,221.00
Sales, general and administrative expenses	\$912.00	\$841.00
Interest expenses	\$85.00	\$70.00
Profit before taxes	\$315.00	\$310.00
Taxes	\$114.00	\$112.00
Profit after taxes	\$201.00	\$198.00
Cash dividends	\$143.00	\$130.00
Increase in retained earnings	\$58.00	\$68.00

Sample Case Ratios

	20x0	20x1	20x2	INDUSTRY AVERAGE 20x2
Liquidity				
Current ratio	2.95	2.80	2.72	2.10
Acid test ratio	1.30	1.23	1.11	1.10
Leverage				
Debt to equity ratio	0.76	0.81	0.81	0.80
Total debt to total assets ratio	0.43	0.45	0.45	0.44
Coverage				
Interest coverage ratio	5.95	5.43	4.71	4.00
Activity				
Average recovery period*	55 days	73 days	62 days	45 days
Total assets turnover*	136 days	180 days	181 days	111 days
Profitability				
Gross profit margin	30.6%	32.8%	32.9%	23.8%
Net profit margin	4.90%	5.32%	5.04%	4.70%
Return on investment*	6.13%	6.29%	6.19%	7.80%
Return on common stock*	10.78%	11.36%	11.19%	14.04%

*Figures from the balance sheet at year-end were used in calculating balance sheet/profit & loss statement ratios.

Vertical Analysis

- Permits an analysis of the share or weight each financial statement account has within the whole.

For example:

- Some of the types of analyses you can make are how much of the assets are in cash or how much the financial expenses represent with respect to sales. In the vertical analysis you should remember that you are working within a single year and this determines the composition of the financial statement accounts.

Vertical Analysis

- The vertical analysis is extremely important when establishing if a company has an equitable distribution of its assets in line with its operating and financial needs.
- For example:
- If a company has total assets of 5,000 and its loan portfolio is 800, this means that 16% of its assets are represented in the loan portfolio – which may mean that the company could have liquidity problems. Or it could also mean some misguided or deficient loan portfolio policies.

Balance Sheet for Aldine Manufacturing (in thousands)

ASSETS	YEAR 20x2	VERTICAL ANALYSIS
Cash and cash equivalents	\$178.00	5%
Accounts receivable	\$678.00	21%
Inventory at merchandise cost or less	\$1,329.00	41%
Expenses payable in advance	\$21.00	1%
Early accrued interest payments	\$35.00	1%
Total current assets	\$2,241.00	69%
Fixed assets at cost	\$1,596.00	49%
Minus accrued depreciation	-\$857.00	-26%
Total net assets	\$739.00	23%
Long-term investment	\$65.00	2%
Other long-term assets	\$205.00	6%
Total assets	\$3,250.00	100%
LIABILITIES AND SHAREHOLDERS EQUITY	YEAR 20x2	
Bank loans and promissory notes payable	\$448.00	14%
Accounts payable	\$148.00	5%
Accrued interest	\$36.00	1%
Other accrued liabilities	\$191.00	6%
Current liabilities	\$823.00	25%
Long-term debt	\$631.00	19%
Total liabilities	\$1,454.00	45%
Shareholders' equity:		
Common stock	\$421.00	13%
Additional paid-in capital	\$361.00	11%
Retained earnings	\$1,014.00	31%
Total shareholders' equity	\$1,796.00	55%
Total liabilities and shareholders' equity	\$3,250.00	100%

Sample Vertical Analysis

Profit & Loss Statement for Aldine Manufacturing (in thousands)

	YEAR 20x2	VERTICAL ANALYSIS
Net sales	\$3,992.00	100%
Cost of merchandise sold	\$2,680.00	67%
Gross profit	\$1,312.00	33%
Sales, general and administrative expenses	\$912.00	23%
Interest expenses	\$85.00	2%
Profit before taxes	\$315.00	8%
Taxes	\$114.00	3%
Profit after taxes	\$201.00	5%
Cash dividends	\$143.00	4%
Increase in retained earnings	\$58.00	1%

Interpretation

- As can be seen, the vertical analysis of a financial statement allows its composition to be clearly identified.
- Once the structure and composition of the financial statement is determined, it must be interpreted.
- For this, every company is a particular case that has to be evaluated individually, since there are no rules that can be generalized; however, there are guidelines that help us see if a specific situation could be negative or positive.
- It could be said, for example, that available liquidity (cash and banks) should not be very representative, since it is not profitable to have a large amount of money in cash or in the bank where it is not generating any profit.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Interpretation

- Companies should try not to have more cash than what is strictly necessary, except for financial entities, which because of their corporate purpose should necessarily keep major amounts of funds in cash.
- There is no great problem with investments representing a significant share of the assets, as long as they are profitable.
- One of the accounts to which special attention should be paid is accounts receivable. As long as this account represents credit sales, this implies that the company is not receiving the money for its sales. There should be a balance between what the company receives and what it spends; otherwise there will be a problem of liquidity which will have to be financed with internal or external debt, which naturally represents a financial cost that could be avoided if an appropriate portfolio policy is followed.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Interpretation

- Another important account for a commercial or industrial company is that of inventory, which whenever possible – as with assets – should represent only what is necessary. Service companies by nature have practically no inventories.
- Fixed assets represent the goods the company needs in order to be able to operate (machinery, land, buildings, equipment, etc.). In commercial and industrial companies they tend to be representative, but not so in service companies.
- It is important for current liabilities to represent a small amount, and they should necessarily represent much less than current assets; otherwise, the company's working capital is compromised.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Interpretation

- When analyzing liabilities, some authors add it to the equity; that is, they take the total of liabilities and equity and calculate the share of each liability and/or equity account against this.
- It should be clearly understood, with this interpretation, that liabilities are the company's third-party obligations that can be legally enforced, while the equity is a liability to the company's shareholders or owners and does not have the degree of enforceability that a liability has. It is therefore important to separate them in order to determine the company's true payment capacity and true obligations.
- <http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Interpretation

- Just as the balance sheet can be analyzed, so can the profit and loss statement. The same exact procedure is followed for this, and the reference value will be the sales, since it should be determined how much a specific item (cost of sales, operating expenses, non-operating expenses, taxes, net profit, etc.) represents with respect to total sales.
- The above concepts are not a straightjacket, since analysis depends on each company's circumstances, situation and objectives. What is positive for one company may not be so for another, although in principle it may appear that way.
- For example, anyone might say that a company that has financed 80% of its assets with liabilities is a financial failure, but it may be that those assets generate sufficient profitability to cover the costs of the liabilities and to meet the expectations of the company's shareholders.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Horizontal Analysis

- What this seeks to determine is the absolute or relative change each entry in the financial statements has undergone from one period to another.
- It determines what an account's growth or decrease was for a specific period. This is the analysis that lets us determine if the company's performance in a period was good, average or poor.
- To determine the absolute change (in numbers) of each entry or account in a financial statement in period 2 with respect to period 1, the difference is determined (subtracted) of value 2 – value 1. The formula would be $P2 - P1$.
- For example: in year 1 an asset was 100 and in year 2 the asset was 150, so we have $150 - 100 = 50$. That is, the asset increased or changed positively by 50 in the period in question.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Horizontal Analysis

- To determine the relative change (in percentage) of one period with respect to another, the rule of three must be applied. For this, period 2 is divided by period 1, period 1 is subtracted, and this result is multiplied by 100 to turn it into a percentage. This formula is as follows: $((P2/P1)-1) * 100$.
- Taking the same example as above, we would have $((150/100)-1) * 100 = 50\%$. This means that the asset grew 50% from the previous period.
- It can be concluded from the above that the financial statements should be available for two different periods in order to do a horizontal analysis. That is, they should be comparable. Any time a horizontal analysis is sought one period must be compared to another to see the behavior of the financial statements in the analysis period.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Sample Horizontal Analysis

Balance Sheet for Aldine Manufacturing (in thousands)

ASSETS	YEAR 20x2	YEAR 20x1	HORIZONTAL ANALYSIS
Cash and cash equivalents	\$178.00	\$175.00	\$3.00
Accounts receivable	\$678.00	\$740.00	-\$62.00
Inventory at merchandise cost or less	\$1,329.00	\$1,235.00	\$94.00
Expenses payable in advance	\$21.00	\$17.00	\$4.00
Early accrued interest payments	\$35.00	\$29.00	\$6.00
Total current assets	\$2,241.00	\$2,196.00	\$45.00
Fixed assets at cost	\$1,596.00	\$1,538.00	\$58.00
Minus accrued depreciation	-\$857.00	-\$791.00	-\$66.00
Total net assets	\$739.00	\$747.00	-\$8.00
Long-term investment	\$65.00	-	\$65.00
Other long-term assets	\$205.00	\$205.00	-
Total assets	\$3,250.00	\$3,148.00	\$102.00
LIABILITIES AND SHAREHOLDERS' EQUITY	YEAR 20x2	YEAR 20x1	
Bank loans and promissory notes payable	\$448.00	\$356.00	\$92.00
Accounts payable	\$148.00	\$136.00	\$12.00
Accrued interest	\$36.00	\$127.00	-\$91.00
Other accrued liabilities	\$191.00	\$164.00	\$27.00
Current liabilities	\$823.00	\$783.00	\$40.00
Long-term debt	\$631.00	\$627.00	\$4.00
Total liabilities	\$1,454.00	\$1,410.00	\$44.00
Shareholders' equity:			
Common stock	\$421.00	\$421.00	-
Additional paid-in capital	\$361.00	\$361.00	-
Retained earnings	\$1,014.00	\$956.00	\$58.00
Total shareholders' equity	\$1,796.00	\$1,738.00	\$58.00
Total liabilities and shareholders' equity	\$3,250.00	\$3,148.00	\$102.00

Sample Horizontal Analysis

	YEAR 20x2	YEAR 20x1	HORIZONTAL ANALYSIS
Net sales	\$3,992.00	\$3,721.00	\$271.00
Cost of merchandise sold	\$2,680.00	\$2,500.00	\$180.00
Gross profit	\$1,312.00	\$1,221.00	\$91.00
Sales, general and administrative expenses	\$912.00	\$841.00	\$71.00
Interest expenses	\$85.00	\$70.00	\$15.00
Profit before taxes	\$315.00	\$310.00	\$5.00
Taxes	\$114.00	\$112.00	\$2.00
Profit after taxes	\$201.00	\$198.00	\$3.00
Cash dividends	\$143.00	\$130.00	\$13.00
Increase in retained earnings	\$58.00	\$68.00	-\$10.00

Interpretation

- The above data allows us to clearly identify what the changes have been for each of the items in the balance sheet.
- Once the changes have been determined, we should then determine the causes of those changes and the potential consequences deriving from them.
- Some changes may be beneficial for the company, while others are not so beneficial; and there may possibly be others with a neutral effect.
- The values obtained in the horizontal analysis can be compared with the growth and performance goals set by the company to evaluate the efficiency and efficaciousness of management in managing funds, since a company's economic results are the outcome of management decisions that have been made.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>

Interpretation

- The information obtained here is highly useful for making projections and setting new goals, since once the causes and consequences of the company's financial performance have been identified it should then improve its weaknesses, design strategies to take advantage of its strengths, and take measures to prevent the negative consequences that can be anticipated as a result of the financial statement analysis.
- The horizontal analysis should be supplemented with the vertical analysis and different financial indicators and/or financial ratios in order to reach an accurate conclusion as to the company's financial reality and thus be able to make better decisions to address that reality.

<http://es.scribd.com/doc/2941779/Analisis-Vertical-y-Analisis-Horizontal-Administracion-Contabilidad>



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