



Financial Analysis

Maite Seco Benedicto

Profesora Titular de Contabilidad y Finanzas

Revisión: Enero 2006

INDEX

1. INTRODUCTION

2. ANALYSIS OF THE FINANCIAL BALANCE

3. RATIOS

3.1. Financial Ratios

3.2. Economic Ratios

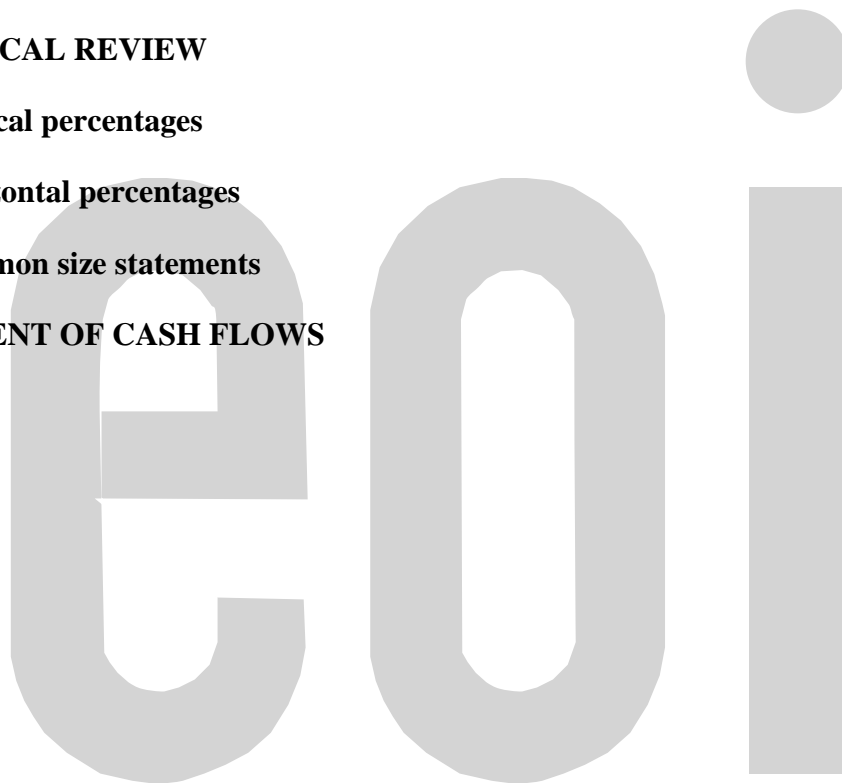
4. ANALYTICAL REVIEW

4.1. Vertical percentages

4.2. Horizontal percentages

4.3. Common size statements

5. STATEMENT OF CASH FLOWS



1. INTRODUCTION

There are basically 4 techniques that can be used when a company's financial situation is reviewed. The main techniques are

1. Análisis of the financial balance
 2. Ratios
 3. Horizontal and vertical percentages
 4. Analysis of the statement of cash flows
-

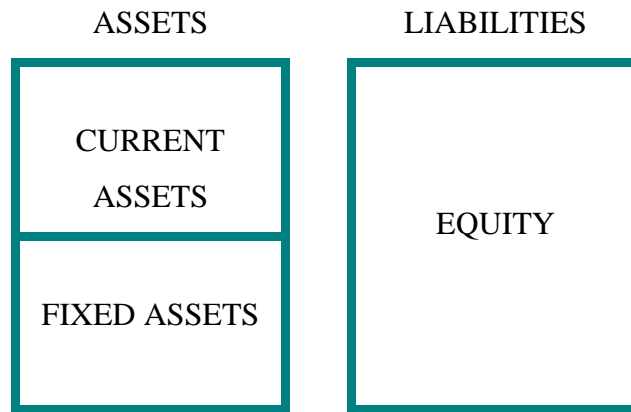
2. ANALYSIS OF THE FINANCIAL BALANCE

In order to analyze a company, the first technique we can apply is the analysis of the financial balance.

The balance is classified to separate the items as disclosed below. On the assets side we separate fixed and current assets and on the liabilities/equity side we separate the short and long term debts and equity.

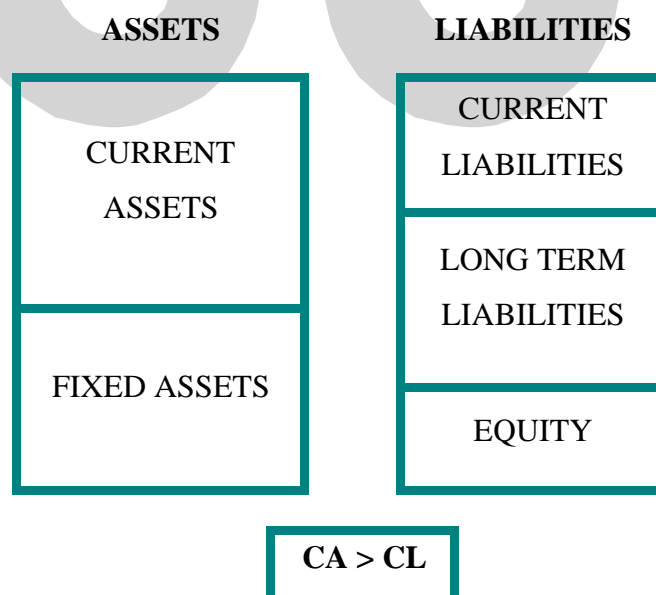
In that regard, the following possibilities appear

Maximum stability situation



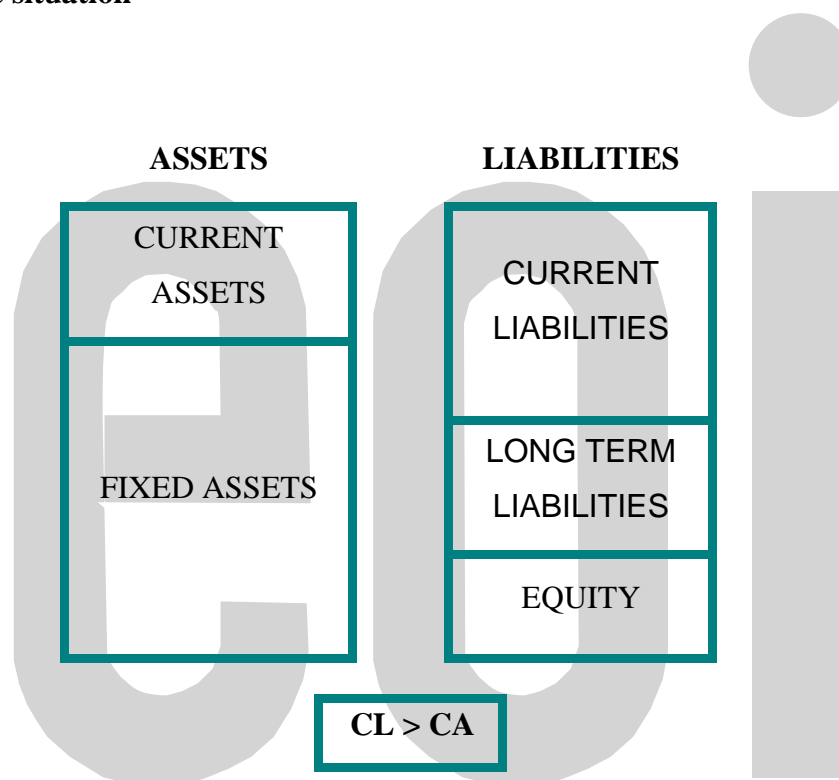
In this situation, the company has no debts. All the assets are financed through equity. The situation is therefore of a maximum stability since there are no debts to meet. Anyways, is not a common situation and its only feasible for a company starting operations or a very small family owned one.

Normal situation



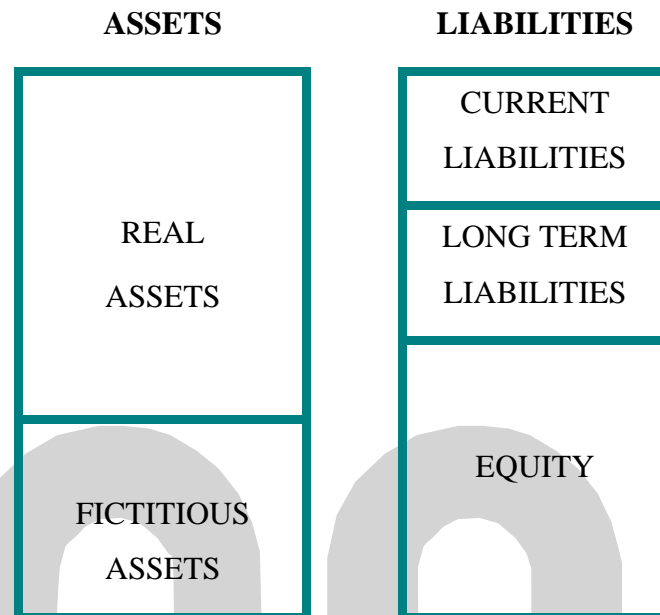
In this situation, the current assets are greater than the current liabilities. Since the current liabilities are the short term debts which can be paid with the current assets, if CA are greater than CL we can, most possibly, pay our short term debts with our current assets, as they become due. The excess of current assets over current liabilities is called working capital.

 **Unstable situation**



In this situation, the company has more current liabilities than current assets and therefore there are doubts about whether it will be possible to pay all those short term debts with the short term assets. But the situation can be solved in different ways: renegotiating the short term debt with the Bank, asking for new long term loans, increasing the capital of the company, selling fixed assets, etc

 **Bankruptcy**



Real assets are those elements in the property of the company that have a market value, that can be sold in case of liquidation of the company. Fictitious assets are those without a market value, like amortizable expenses.

Bankruptcy appears when real assets are not enough to pay all the debts, even if all assets were sold.

3. RATIOS

A ratio is a mathematical calculation in which we compare two data, dividing one by another one.

Ratios can be used in different ways: we can calculate ratios and compare the results against other companies or we can monitor the performance of the company over the time.

In a company two major aspects can be tested: the economic and the financial situation.

The financial situation refers to the ability of the business to meet its debts as they become due. It refers to the management of the flows of cash within the company.

The economic situation refers to the ability of the business to produce a return and an income for the owners (ie the shareholders). So, we test whether the business itself is good or bad.

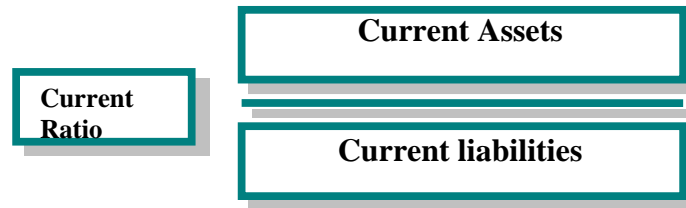
3.1. Financial Ratios

In the financial side, there are several concepts we can analyze.

LIQUIDITY RATIOS

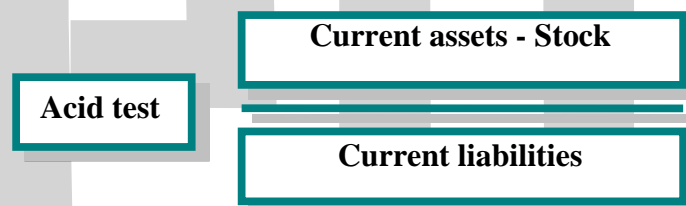
The first idea is that of liquidity or the ability of the Company to meet the short term debts.

The most commonly used ratios to measure the company's ability to pay current liabilities are the current ratio and the acid-test ratio. These ratios are computed as follows:



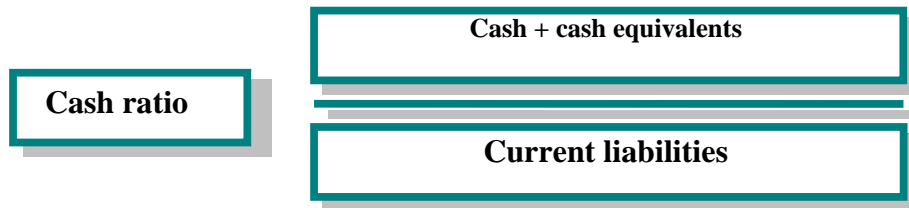
The current ratio measures the general ability of the company to pay the short term debts with the present current assets. The ratio should be above 1 to ensure the general ability to meet debts on the short term.

But this ratio is considered too general and then the acid test is also used, by eliminating the stock which is the least liquid portion of the current assets.



The acid-test ratio is given that name because it measures the company's ability to pay its current liabilities if they were to come due immediately (that is, if the company were put to the "acid test").

Other ratios that help to measure the liquidity of the company are:



The cash ratio measures the ability of the company to pay short term debts versus the amount of cash already available in the treasury.

Another ratio commonly used is the average collection period ratio, which measure the number of days that, on average, it takes for the company to collect the money owed by its customers when selling on a credit basis.



An increase in days' sales in receivables is generally a bad sign about a company. It indicates that the length of time it takes to collect receivables is increasing. The company's credit and collection department should strengthen its collection efforts.

When analyzing the average collection period, most companies would compare to the average payment period, thus checking how long it takes on average to pay the company's creditors or suppliers.

$$\text{A.P.P.} = \frac{\text{Accounts payable}}{\text{Purchases}} * 365$$

The best situation, in terms of liquidity, is when the company collects fast and pays over a longer period of time, though this idea must be explained further.

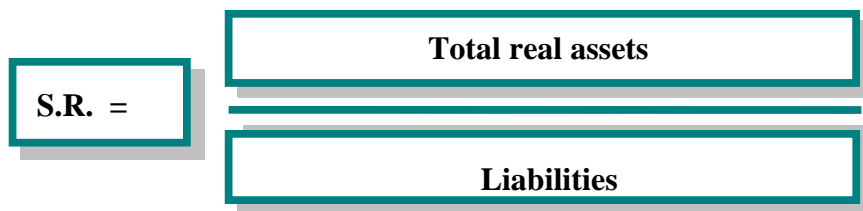
Its also important to know how often the inventory turns over in a company. The more it turns, the more times we buy goods which we use to produce and sell. We can value this through the inventory turnover ratio.

$$\text{I.T.R} = \frac{\text{Cost of good sold}}{\text{Average stock}}$$

The inventory turnover ratio measures the number of times a company sells its average level of inventory during a year.

SOLVENCY RATIO

Besides analyzing the ability to pay short term debts, we must check the ability if the company to meet all debts, as they become due. This is the concept of solvency.



The value of this ratio must be above 1 to ensure the ability of the company to meet the debts.

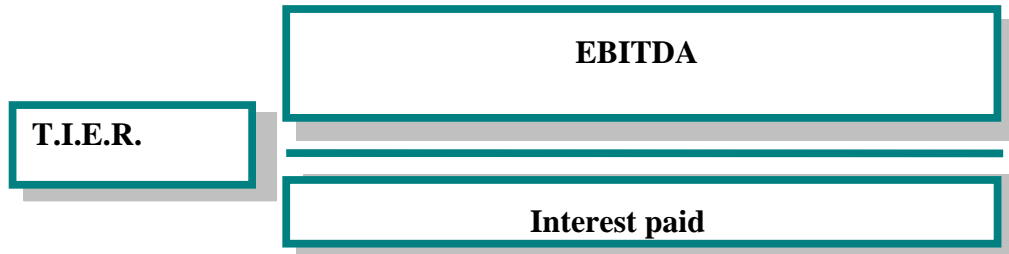
LEVERAGE RATIOS

To measure the level of leverage in a company, we often analyze two different ratios, the debt ratio and the times interest earned ratio.



An increase in a company's debt ratio is important to the company's creditors. This increase means that the company has a growing proportion of liabilities to assets. This growth, in turn, increases the risk that the company will not be able to pay its debts and generally results in the company's having to pay a higher interest rate on new borrowings.

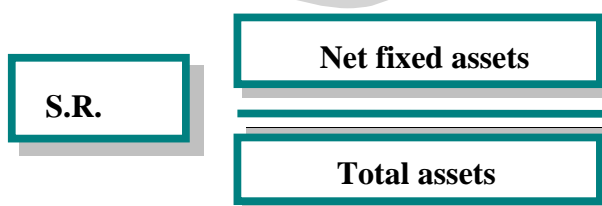
But in a company is not only crucial to monitor the level of debt or financial leverage. It is also important to know if the interest that is being paid for debt is making a big effect in the profit and loss account of the company.



The debt ratio measures the effect of debt on financial position (the balance sheet). The times-interest-earned ratio — the ratio of income from operations to interest expense — measures the effect of debt on the company’s ability to pay interest expense (the income statement or profit and loss account).

STRUCTURE RATIO

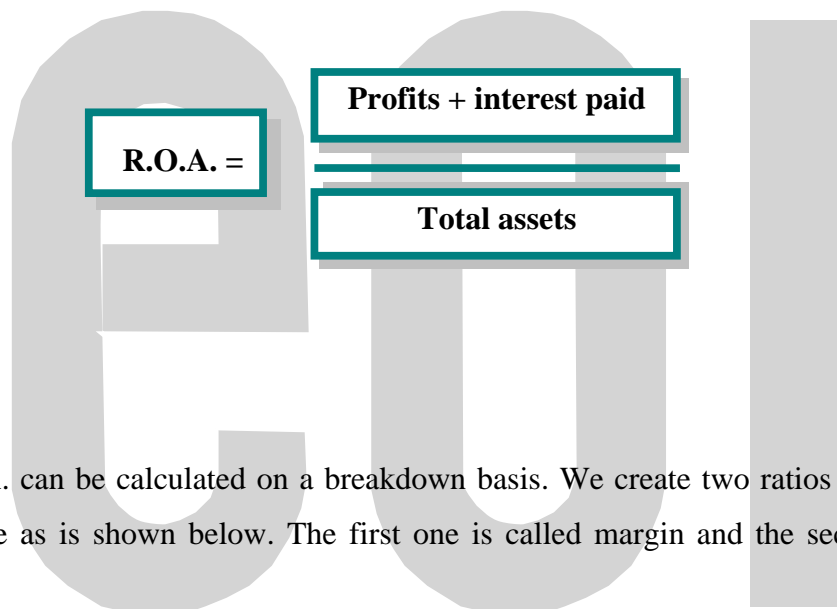
Another important matter to value in a company refers to the structure. A consulting company usually has a lighter structure (less fixed assets) than an airline, for instance. We check what is the value of fixed assets versus the total assets to assess whether it matches the kind of industry and situation of the company.



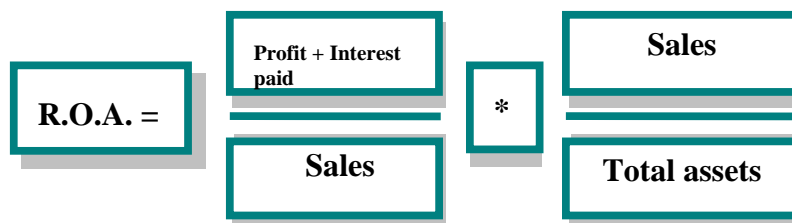
3.2. ECONOMIC RATIOS

Four ratios measure the ability to earn profits.

With the ROA (return on assets) we value the ability of the company to make a profit by using its assets. The interests paid for the financial resources are added back to the return cause they are part of the financial sphere of the company and not part of the economic issue.



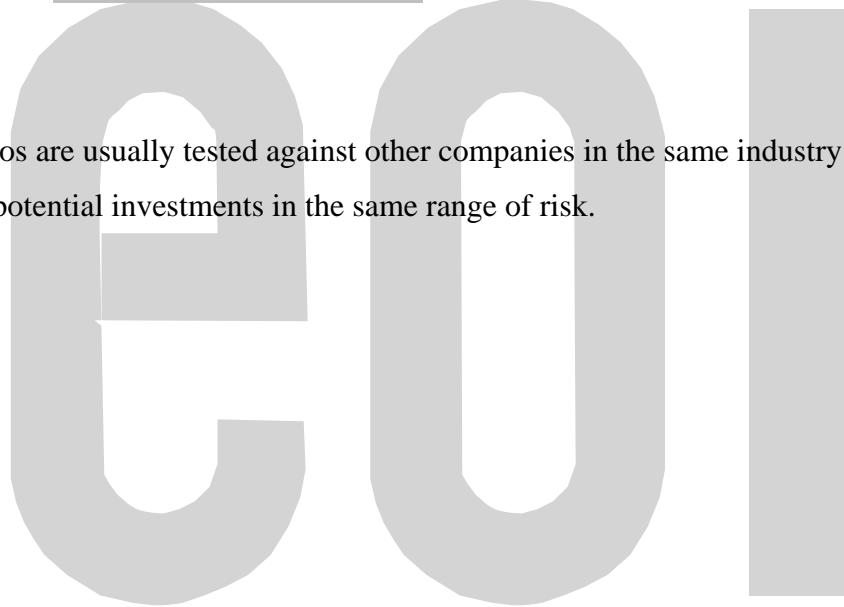
The R.O.A. can be calculated on a breakdown basis. We create two ratios from the R.O.A. one as is shown below. The first one is called margin and the second one turnover.



R.O.A. shows the ability of the company to make money from the use of the assets, therefore, the efficiency to use assets. But another ratio is often used, the ROE, return on equity, which is calculated as follows and shows the return experienced by the shareholders, the owners of the company

$$\text{R.O.E.} = \frac{\text{Profit}}{\text{Equity}}$$

Economic ratios are usually tested against other companies in the same industry or against other potential investments in the same range of risk.



4. ANALYTICAL REVIEW

Besides applying the technique of calculating ratios, we can also make some other calculations on the financial statements to help gain a view over the situation of the company.

4.1. Vertical percentages analysis

Vertical analysis of a financial statement shows the relationship of each item in one of the financial statements of the company to a specific base — total assets on the balance sheet and total revenues on the income statement. Its purpose is to show what percent of the base is represented by each item listed on a financial statement.

An example could be as follows

	2005		2004		2003	
	Amount	Percent	Amount	Percent	Amount	Percent
Cash	\$ 6,000	3.3%	\$ 6,000	3.9%	\$ 5,000	3.7%
Receivables, net	46,000	25.3%	32,000	20.8%	19,000	14.0%
Inventory	32,000	17.6%	26,000	16.9%	24,000	17.6%
Prepaid expenses	2,000	1.1%	2,000	1.3%	1,000	0.7%
Property, plant, and equipment, net	<u>96,000</u>	<u>52.7%</u>	<u>88,000</u>	<u>57.1%</u>	<u>87,000</u>	<u>64.0%</u>
Total assets	\$182,000	100.0%	\$154,000	100.0%	\$136,000	100.0%

Source : Harrison Horngren, Financial Accounting, 4th edition, Prentice Hall

Based on the vertical analysis we could say that receivables, as a percent of total assets, have grown dramatically. This may have caused a cash shortage. To generate more cash, the company can

- pursue the collection of receivables more vigorously.
- refuse to sell on account to less creditworthy customers.
- offer an early-payment discount to customers.

Thanks to the vertical analysis we managed to notice the change in the situation of the company.

Another example of vertical analysis

The RV Center, Inc.
Vertical Analysis of Balance Sheet
December 31, 20X3

	AMOUNT	PERCENT
ASSETS		
Total current assets.....	\$ 62,000	19.1%
Property, plant, and equipment, net.....	227,000	70.1
Other assets.....	<u>35,000</u>	<u>10.8</u>
Total assets.....	<u>\$324,000</u>	<u>100.0%</u>
LIABILITIES		
Total current liabilities.....	\$ 48,000	14.8%
Long-term debt.....	<u>128,000</u>	<u>39.5</u>
Total liabilities.....	176,000	54.3
STOCKHOLDERS' EQUITY		
Total stockholders' equity.....	<u>148,000</u>	<u>45.7</u>
Total liabilities and stockholders' equity.....	<u>\$324,000</u>	<u>100.0%</u>

Source : Harrison Horngren, Financial Accounting, 4th edition, Prentice Hall

4.2. Horizontal percentages analysis

Horizontal analysis is the study of percentage changes in comparative financial statements. Decision makers may track the percentage changes in accounts over time to analyze trends. Trend percentages are a form of horizontal analysis.

Newsletter E-Mail, Inc.
Horizontal Analysis of Comparative Income Statement
Years Ended December 31, 2005 and 2004

	2005	2004	INCREASE (DECREASE)	
			AMOUNT	PERCENT
Total revenues.....	<u>\$430,000</u>	<u>\$373,000</u>	<u>\$57,000</u>	15.3%
Expenses:				
Cost of goods sold.	\$202,000	\$188,000	\$14,000	7.4
Selling and genl. expenses.....	98,000	93,000	5,000	5.4
Interest expense....	7,000	4,000	3,000	75.0
Income tax expense.	<u>42,000</u>	<u>37,000</u>	<u>5,000</u>	13.5
Total expenses.....	<u>349,000</u>	<u>322,000</u>	<u>27,000</u>	8.4
Net income.....	<u>\$ 81,000</u>	<u>\$ 51,000</u>	<u>\$30,000</u>	58.8

Source : Harrison Horngren, Financial Accounting, 4th edition, Prentice Hall

Net income increased by a much higher percentage than total revenues during 2005 because revenues increased at a higher rate (15.3%) than did total expenses (8.4%).

4.3. Common size statements

Common-size statements are used to compare a company's performance from period to period; a company to its industry average; companies of different sizes, or a specific competitor; and to identify the need for corrective action.

800-GO-RYDER, Inc.
Comparative Common-Size Income Statement
Years Ended December 31, 1999 and 1998

	<u>1999</u>	<u>1998</u>
Total revenues.....	<u>100.0%</u>	<u>100.0%</u>
Expenses:		
Cost of goods sold.....	47.0	50.4
Selling and general expenses.....	22.8	24.9
Interest expense.....	1.6	1.1
Income tax expense.....	<u>9.8</u>	<u>9.9</u>
Total expense.....	<u>81.2</u>	<u>86.3</u>
Net income.....	<u>18.8%</u>	<u>13.7%</u>

Source : Harrison Horngren, Financial Accounting, 4th edition, Prentice Hall

An investor would be pleased with 1999 in comparison with 1998. Total revenues and net income are both up significantly from 1998. Cost of goods sold and selling expenses — the two largest expenses — consumed smaller percentages of total revenues in 1999, and net income represents a higher percentage of revenues. Overall, profits are rising.

Blaupunkt Stereo Shops
Common-Size Income Statement Compared to Industry Average
Year Ended December 31, 2005

	BLAUPUNKT	INDUSTRY AVERAGE
Net sales.....	100.0%	100.0%
Cost of goods sold.....	<u>63.6</u>	<u>65.8</u>
Gross profit.....	36.4	34.2
Operating expenses	<u>20.9</u>	<u>19.7</u>
Operating income.....	15.5	14.5
Other expenses.....	<u>1.9</u>	<u>0.4</u>
Net income.....	<u>13.6%</u>	<u>14.1%</u>

Source : Harrison Horngren, Financial Accounting, 4th edition, Prentice Hall

Blaupunkt Stereo Shops
Common-Size Balance Sheet Compared to Industry Average
December 31, 2005

	BLAUPUNKT	INDUST AVG.
Current assets.....	77.8%	70.9%
Fixed assets, net.....	16.4	23.6
Intangible assets, net.....	0.9	0.8
Other assets.....	<u>4.9</u>	<u>4.7</u>
Total assets.....	<u>100.0%</u>	<u>100.0%</u>
Current liabilities.....	46.0%	48.1%
Long-term liabilities.....	13.8	16.6
Stockholders' equity.....	<u>40.2</u>	<u>35.3</u>
Total liabilities and stockholders' equity...	<u>100.0%</u>	<u>100.0%</u>

Source : Harrison Horngren, Financial Accounting, 4th edition, Prentice Hall

5. ANALYSIS OF THE STATEMENT OF CASH FLOWS

The **statement of cash flows**, one of the four required financial statements, shows cash receipts and cash payments during the year. It also explains the changes in cash during the year. The statement covers the same period of time as the income statement. This period is included in the heading of the statement and is usually one year.

The **purposes** of the statement are:

1. to predict future cash flows
2. to evaluate management decisions
3. to determine the company's ability to pay dividends and interest
4. to show the relationship of net income to cash flows.

The investor analyzes the statement of cash flows to identify signals of danger about a company's financial situation. For example, successful companies generate most of their cash from operations, not from borrowing or selling their fixed assets. The statement of cash flows reveals where cash comes from and how it is spent. An investor analyzes investing activities for indications of how the company is using its money. This information is important because how a company invests cash determines its future sources of cash. Wise purchases of assets assure future income.

Cash flows on the statement are classified as operating, investing, or financing.

1. **Operating activities** create revenues, expenses, gains, and losses.
 - a. Operating activities relate to transactions that make up net income.
 - b. Over the life of the business, cash flow from operating activities is the most important activity for a business.
2. **Investing activities** are increases and decreases in assets other than those involved in operating activities.
 - a. Investing activities relate to long-term asset accounts (investments and fixed assets).

- b. Investments in fixed assets suggest a strong company.
- 3. **Financing activities** involve obtaining funds from investors and creditors.

The Statement of Cash Flow can be prepared by two different methods: the direct and the indirect one. The most commonly used one is the indirect method.

Both formats of the statement of cash flows result in identical amounts being reported in each of the three subtotals on the statement, and the same total change in cash for the period.

Indirect Method

The **indirect method** starts with net income and reconciles to cash flows from operating activities. We will learn below how to convert net income from the accrual basis to the cash basis, an important step in preparing the operating activities section of the statement of cash flows.

The indirect method is based on net income but we must adjust cause net income has been prepared based on accrual criteria. Therefore, the net income is affected by some items that have been added or deducted but not meaning a cash in or outflow.

So, we work as follows

1. Compute Net Income

Net Income is a good base to start calculating the cash flows since most of the expenses should have been paid and most of the incomes must have been collected. So we build from the net income, adjusted for those gains and losses originally reported in the net income calculation but that are not meaning a cash inflow or outflow.

2. Add (subtract) items affecting net income and cash differently

2.1. Losses or gains that have been already booked as part of net income but not meaning cash movement

The reason is because we have included those expenses or gains as part of the net income and are meaning a loss or a gain but are not meaning cash.

Examples

(+) *Amortization/depletion/depreciation of fixed assets* (recorded as expenses but not meaning a cash movement). On the contrary, when we bought those assets we experienced a cash outflow registered on the investing activities part of the cash flow statement.

Loss (+)/Gain (-) on the sale of plant assets. We experience a cash inflow also recorded on the investing activities, but for the whole amount of the sale, not only the gain.

Accrued interest payable (+) or receivable (-). When we covered notes receivable or payable we used to accrue for the portion of the interest payable or receivable that was due at year end. But that is only accrual, there is no physical payment, no cash outflow.

2.2. Variation on Current assets and liabilities

Assets mean an application of funds, we dedicate funds to increase current assets.

Liabilities are financial sources.

Think of the example below (partial and not following all the reporting rules), which we will use to learn the effect of increases/decreases on current assets and liabilities.

	2001	2002	applications	sources
Assets	131.000	132.000		
Cash	12.000	16.000	4.000	
Accounts receivable	20.000	5.000		15.000
Inventory	2.000	6.000	4.000	
Fixed assets	97.000	105.000	8.000	
Liabilities	131.000	132.000		
Capital stock	50.000	50.000	0	0
Retained earnings	6.000	12.000		6.000
Accounts payable	20.000	18.000	2.000	
Short term debts	15.000	20.000		5.000
Long term debts	40.000	32.000	8.000	
		TOTAL	26.000	26.000

When a current asset other than cash is increasing we are investing

(applying) funds to keep a higher level of that asset and therefore we assume we use cash for it. We use cash to buy more inventories, more short term financial

investments.... The opposite when the current asset is decreasing, we dedicate less resources to finance that asset and therefore there is more cash available for other uses.

Increase in current assets other than cash = decrease in cash

Decrease in current asset other than cash = increase in cash

When a current liability increases we are gaining a new financial resource, then we increase cash. When a current liability decreases we are using funds to reduce that debt and therefore we decrease cash.

Increase in current liability = increase in cash

Decrease in current liability = Decrease in cash

