

CRISIS EFFECTS ON VIRTUAL IT COMPANIES

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Abstract

Financial crisis has influenced all the economies around the world. Looking back, humanity was faced with same situations. To understand the actual situation it is important to study the history of previous crisis situations.

A similar situation happened during the IT crash. Some, even, believe the crash of the dot-com bubble contributed to the actual situation. The biggest capital investment during the bubble years was probably in human capital. The rush for financial success led to a whole generation of young adults immersing themselves in technology.

Nevertheless IT has an important influence on nowadays economy this is the reason of the present study. Here will be presented one of the world largest companies in IT and analyzed using few financial methods (comparative statements, ratio analysis, cash flow analysis).

I. INTRODUCTION

Information technology (IT), as defined by the [Information Technology Association of America](#) (ITAA), is "the study, design, development, implementation, support or management of computer-based [information systems](#), particularly software applications and computer hardware." (Henderson, Jeffrey William, 1989)

IT deals with the use of electronic [computers](#) and [computer software](#) to [convert](#), [store](#), [protect](#), [process](#), [transmit](#), and [securely retrieve information](#) (8). Today, the term **information technology** has ballooned to encompass many aspects of computing and technology, and the term has become very recognizable. The information technology umbrella can be quite large, covering many fields.

Information technology has overstuffed to cover many features of computing and technology, and this word is more familiar than ever before. Information technology subject can be quite large, encompassing many fields. IT professionals perform different types of responsibilities that range from installing applications to designing complex computer networks.

The present paper presents the financial analysis of the top IT companies. In the analysis below there are compared the performance, profitability, solvency, etc, of 7 companies. Each of them had their stretch and their weaknesses, but using the financial analysis instruments we could make a better delimitation between them. After an introduction, in the **2nd part** of the paper there are presented the theoretical aspects of the financial analysis

Several methods or devices are used to study the relationship between different statements. In this case 3 methods were used: comparative statements, ratio analysis, and cash flow analysis (2)

The ratios have different use for different people. Therefore ratios can be classified into different categories. Various ratios can be divided into following categories depending upon their use: Traditional classification, Classification according to the nature of ratios, According to importance of ratios, According to users of the ratios, Functional classification.

From all the classification that may be used the last one was chosen. From all the financial dimensions, four of them are used to analyze the companies below (16).

Using the financial instruments in the **3 rd part** of the paper all 7 companies are compared and analyses using ratios, comparative statements, cash flow analysis.

The research was focused on the comparison between these companies trying to use at least one instrument for each method. The results were presented below each method.

The **4th part** presents the conclusion and recommendations

II. THEORETICAL ASPECTS

2.1. Financial Analysis

Financial analysis refers to an assessment of the viability, stability and profitability of a [business](#), sub-business or [project](#) (12). It is performed by professionals who prepare reports using ratios that make use of information taken from [financial statements](#) and other reports. These reports are usually presented to top management as one of their bases in making business decisions. Based on these reports, management may:

- Continue or discontinue its main operation or part of its business;
- Make or purchase certain materials in the manufacture of its product;
- Acquire or rent/lease certain machineries and equipments in the production of its goods;
- Issue [stocks](#) or negotiate for a bank [loan](#) to increase its [working capital](#);
- Make decisions regarding investing or lending capital;

Methods or devices of financial analysis

The analysis and interpretation of financial statements is used to determine the financial position and results of operations as well. A number of methods or devices are used to study the relationship between different statements. The following methods of analysis are generally used:

1. COMPARATIVE STATEMENTS
2. RATIO ANALYSIS
3. CASH FLOW ANALYSIS

2.1.1 Comparative financial statements analysis

The comparative financial statements are statements of the financial position at different periods of time. The elements of financial position are shown in a comparative form so as to give an idea of financial position at two or more periods. Any statement prepared in a comparative form will be covered in comparative statements. From practical point of view:

- Horizontal analysis/Trend analysis
- Vertical analysis/Common size analysis/ Component Percentages

1. Horizontal analysis/Trend analysis

Trend percentage or Line-by-line item analysis:

Items are expressed as a percentage of a base year. This is a time series analysis

The information for a number of years is taken up and one year, generally taken for the base year. In figures for the base year are taken as 100 and trend ratios for other years are calculated on the basis of the base year. The analyst is able to see the trend of the figures, whether upward or downward.

2. Vertical analysis/Common size analysis/ Component Percentages

All items are expressed as a percentage of a common base item within a financial statement

Important analysis for comparative purposes:

- Over time
- For different sized enterprises

2.1.2 Ratio analysis

Ratio analysis is a technique of analysis and interpretation of financial statements (Bătrâncea I. 2007). It is the process of establishing and interpreting various ratios for helping in making certain decisions. However ratio is not end itself. It is only a means of better understanding of financial strengths and weaknesses of a firm. A ratio is a simple arithmetical expression of the relationship of one number to another. It may be defined as the indicated quotient of the two mathematical expressions (3).

Financial Ratio Analysis

Financial ratio analysis involves calculating and analysing ratios that use data from one, two or more financial statements.

Ratio analysis also expresses relationships between different financial statements.

According to the Functional classification these are four most important financial dimensions, which a firm would like to analyze:

- **Profitability ratios**
- **Liquidity ratios (Short-Term Solvency ratios)**
- **Solvency ratio (Long term solvency)**
- **Activity ratios (Efficiency Ratio)**

1) Profitability Ratios

Elements of the profitability analysis:

- Analysing on sales and trading margin focus on gross profit
- Analysing on the control of expenses focus on net profit
- Assessing the return on assets and return on equity

$$\text{Return on Assets} = \frac{\text{Net Profit}}{\text{Average Total Assets}} * 100$$

$$\text{Return on Equity} = \frac{\text{Net Profit}}{\text{Average Total Equity}} * 100$$

$$\text{Return on Sales or Profit Margin} = \frac{\text{Net Profit}}{\text{Net Sales}} * 100$$

2) Liquidity or Short-Term Solvency ratios

Working capital management is important as it signals the firm's ability to meet short term debt obligations.

$$\text{Working Capital} = \text{Current assets} - \text{Current Liabilities}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory} - \text{Prepayments}}{\text{Current Liabilities} - \text{Bank Overdraft}}$$

3) Solvency ratios

Solvency ratios are measures to assess a company's ability to meet its long-term obligations and thereby remain solvent and avoid bankruptcy. Two general, overall solvency ratios include:

Solvency Ratio

$$\text{Solvency Ratio} = \text{Total Assets} / \text{Total Liabilities}$$

or

$$\text{Solvency Ratio} = \text{Net Worth (Total Capital or Equity)} / \text{Total Liabilities}$$

Equity ratio

$$\text{Equity ratio} = \frac{\text{Equity}}{\text{Total Assets}} * 100$$

4) Activity ratios (efficiency ratio):

Funds of creditors and owners are invested in various assets to generate sales and profits. The better the management of assets, the larger is the amount of sales. Activity ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. These ratios are also called turnover ratios because they indicate the speed with which assets are being converted or turned over into sales and assets.

Total assets turnover ratio:

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

2.1.3. Cash flow analysis

Cash flow statement is a statement, which describes the inflow (sources) and outflow (uses) of the cash and cash equivalents in an enterprise during the specified period of time. Such a statement enumerates net effects of the various business transactions on cash and its equivalents and takes into account receipts and disbursements of cash. A cash flow statement summarizes the causes of changes in cash position of a business enterprise between the dates of the two balance sheets.

Cash Flow Indicator Ratios: Introduction

$$1) \quad \frac{\text{Operating Cash Flow}}{\text{Cash Flow/Sales}} \quad \text{ratios Ratio}$$

This ratio, which is expressed as a percentage, compares a company's operating cash flow to its net sales or revenues, which gives investors an idea of the company's ability to turn sales into cash (1).

$$\text{OCF/Sales Ratio} = \frac{\text{Operating Cash Flow}}{\text{Net Sales (Revenue)}}$$

$$2) \quad \frac{\text{Free Cash Flow/Operating Cash Flow}}{\text{Cash Flow}} \quad \text{Ratio}$$

The free cash flow/operating cash flow ratio measures the relationship between free cash flow and operating cash flow. Free cash flow is most often defined as operating cash flow minus capital expenditures, which, in analytical terms, are considered to be an essential outflow of funds to maintain a company's competitiveness and efficiency.

$$\text{FCF/OCF Ratio} = \frac{\text{Free Cash Flow (Operating Cash Flow - Capital Expenditure)}}{\text{Operating Cash Flow}}$$

$$3) \quad \frac{\text{Cash Flow Coverage}}{\text{Ratios}}$$

This ratio measures the ability of the company's operating cash flow to meet its obligations - including its liabilities or ongoing concern costs. The operating cash flow is simply the amount of cash generated by the company from its main operations, which are used to keep the business funded.

$$\text{Short - term Debt Coverage} = \frac{\text{Operating Cash Flow}}{\text{Short - term Debt}}$$

$$4) \quad \frac{\text{Dividend Payout}}{\text{Ratio}}$$

This ratio identifies the percentage of earnings (net income) per common share allocated to paying cash dividends to shareholders. The dividend payout ratio is an indicator of how well earnings support the dividend payment.

$$\text{Dividend Payout Ratio (\%)} = \frac{\text{Dividends per Common Share}}{\text{Earnings per Share}}$$

2.2 Limitations of financial statement analysis

We must be careful with financial statement analysis. Strong financial statement analysis does not necessarily mean that the organisation has a strong financial future. Financial statement analysis might look good but there may be other factors that can cause an organisation to collapse.

III. FINANCIAL ANNALISYS OF THE WORLD FIRST 7 IT COMPANIES

The following analysis had as a start point Forbs' Top 100 IT (24) companies for the year 2008. There will be analyzed some of the first 7 world IT companies and comparisons will be driven with the help of financial analysis instruments (17), (18), (19), (20), (21), (22), (23).

The analysis and interpretation of financial statements is used to determine the financial position and results of operations as well. A number of methods or devices are used to study the relationship between different statements. The following methods of analysis are generally used:

1. COMPARATIVE STATEMENTS
2. RATIO ANALYSIS
3. CASH FLOW ANALYSIS

The first 7 companies listed above are the subject of the following financial report. To analyze the company's financial statement several indicators were used (15), (16).

6.1. Comparative statements

The first instrument is the horizontal and vertical analysis. This technique is also known as comparative analysis.

It is conducted by setting consecutive balance sheet, income statement or statement of cash flow side-by-side and reviewing changes in individual categories on a year-to-year or multiyear basis. The most important item revealed by comparative financial statement analysis is trend.

6.1.1. Horizontal analysis/Trend analysis

A comparison of statements over several years reveals direction, speed and extent of a trend(s). The horizontal financial statements analysis is done by restating amount of each item or group of items as a percentage. Such percentages are calculated by selecting a base year and assign a weight of 100 to the amount of each item in the base year statement. Trend percentage, Line-by-line item analysis: Items are expressed as a percentage of a base year. This is a time series analysis

For example, a line item could look at increase in sales turnover over a period of 5 years to identify what the growth in sales is over this period.

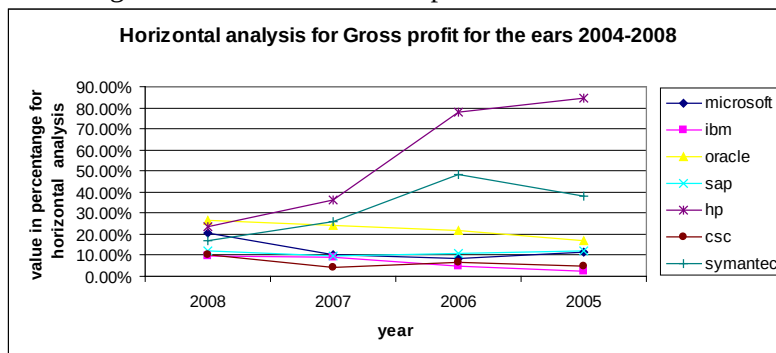


Fig. 10 Horizontal analysis

6.1.2. Vertical analysis/Common size analysis/ Component Percentages

All items are expressed as a percentage of a common base item within a financial statement

Important analysis for comparative purposes:

- Over time
- For different sized enterprises

Vertical/Cross-sectional/Common size statements came from the problems in comparing the financial statements of firms that differ in size.

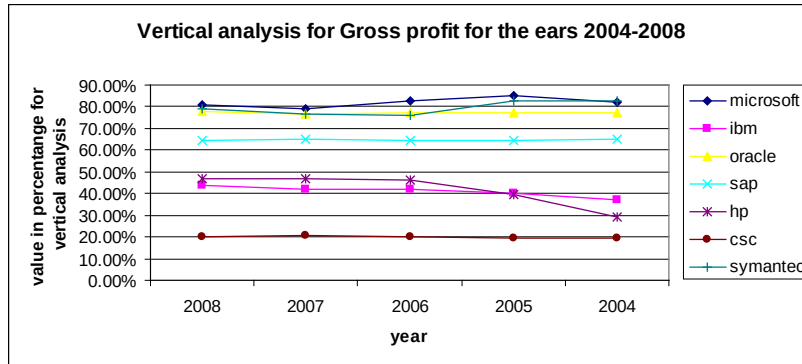


Fig. 11: Vertical analysis

6.2. Ratio analysis

Ratio analysis expresses relationships between different financial statements. According to the **Functional classification** these are four most important financial dimensions, which a firm would like to analyze:

1. Profitability ratios
2. Liquidity ratios (Short-Term Solvency ratios)
3. Solvency ratio (Long term solvency)
4. Activity ratios (Efficiency Ratio)

6.2.1. Profitability Ratios

Return on assets ratio (ROA)

An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment".

$$\text{ROA} = \frac{\text{Operating Incomes}}{\text{Total Current Assets}}$$

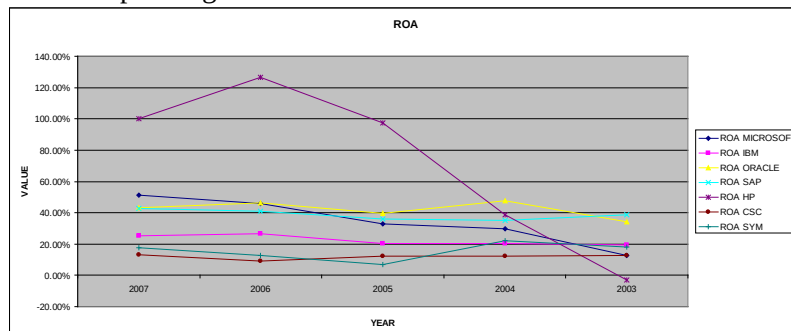


Fig 12: ROA

Comparing all 7 companies, we can see that the highest rate of profitability from assets was achieved in 2006 by HP, but also this was the company with the lowest rate in 2003.

Return on shareholders' equity ratio (ROE)

Also known as "return on net worth" (RONW).

$$\text{Return on Equity} = \frac{\text{Net Profit}}{\text{Average Total Equity}} * 100$$

Net income is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock.) Shareholder's equity does not include preferred shares.

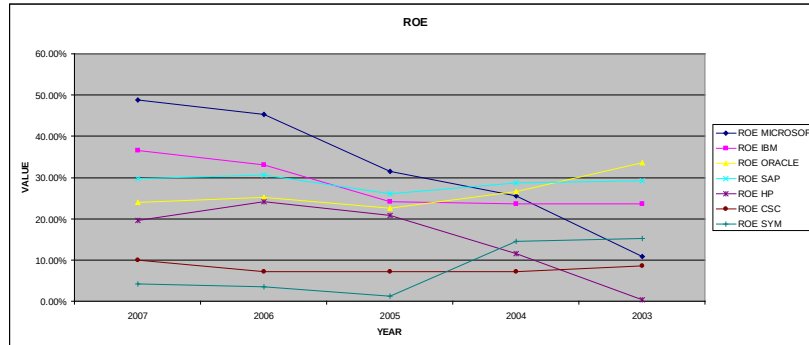


Fig 13: ROE

According to ROE in the past years Microsoft was the company which benefited the most from its shareholder's investments.

Return on Sales (ROS)

Return on Sales or Profit Margin = $\frac{\text{Net Profit}}{\text{Net Sales}} \times 100$

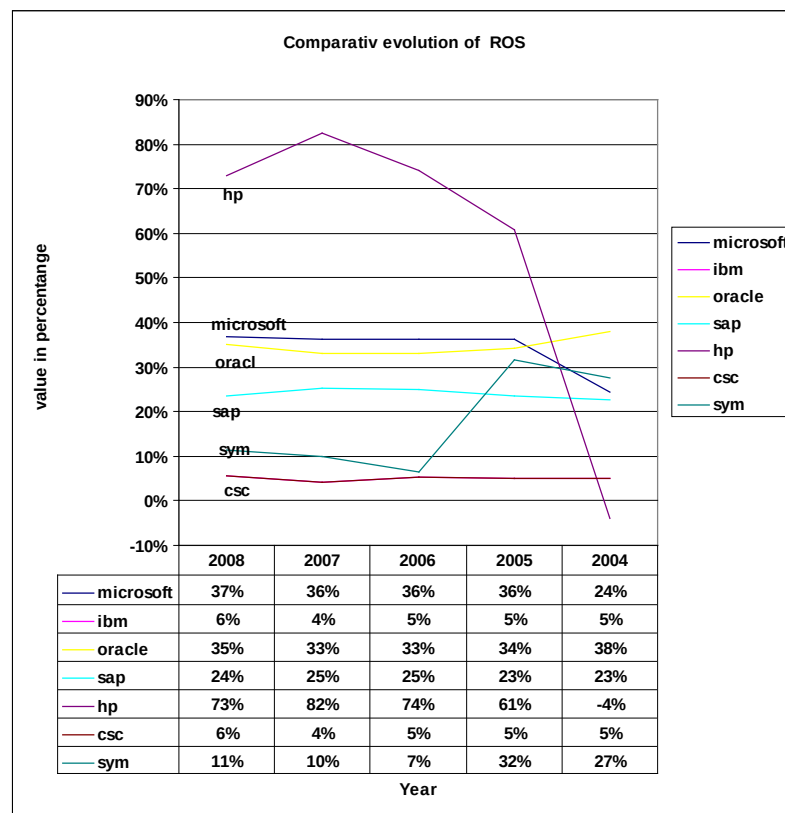


Fig 14: ROS

6.2.2. Liquidity or Short-Term Solvency ratios

Working capital management is important as it signals the firm's ability to meet short term debt obligations.

Current Ratio

A liquidity ratio that measures a company's ability to pay short-term obligations: Also known as "liquidity ratio", "cash asset ratio" and "cash ratio".

$$\text{The Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

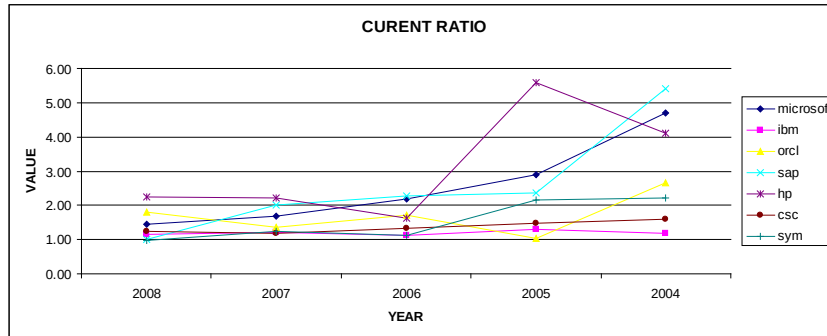


Fig. 15: Current Ratio

In the table above all the companies were compared according to their current ratio. The ratio of a company to pay its short-term obligations was achieved by IBM in 2005.

Quick Ratio

An indicator of a company's short-term liquidity. The quick ratio measures a company's ability to meet its short-term obligations with its most liquid assets. The higher the quick ratio, the better the position of the company.

The quick ratio is calculated as:

$$\text{Quick Ratio} = \frac{(\text{Cash} + \text{Receivable})}{\text{Current Liabilities}}$$

Also known as the "acid-test ratio" or the "quick assets ratio".

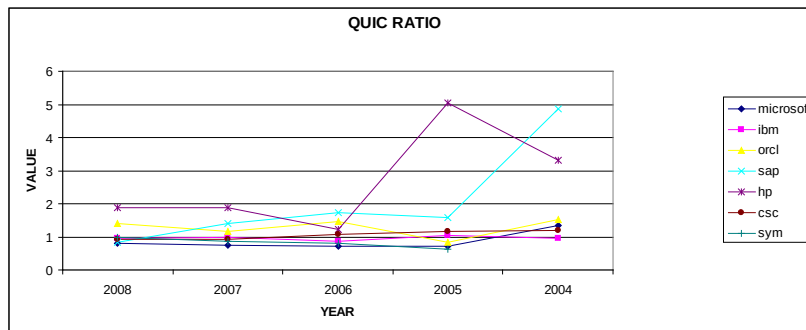


Fig 16: Quick ratio

According to Quick Ratio indicator; in 2005 HP was the company, which could meet its short-term obligations with its most liquid assets, more than the rest of the companies. HP has the highest rates mainly because Cash, Receivable and most of all Current Liabilities

6.2.3 Solvency ratio (Long term solvency)

Solvency ratios are measures to assess a company's ability to meet its long-term obligations and thereby remain solvent and avoid bankruptcy. Two general, overall solvency ratios include:

Solvency Ratio

$$\text{Solvency Ratio} = \frac{\text{Total Assets}}{\text{Total Liabilities}}$$

Or

Solvency Ratio = Net Worth (Total Capital or Equity) / Total Liabilities

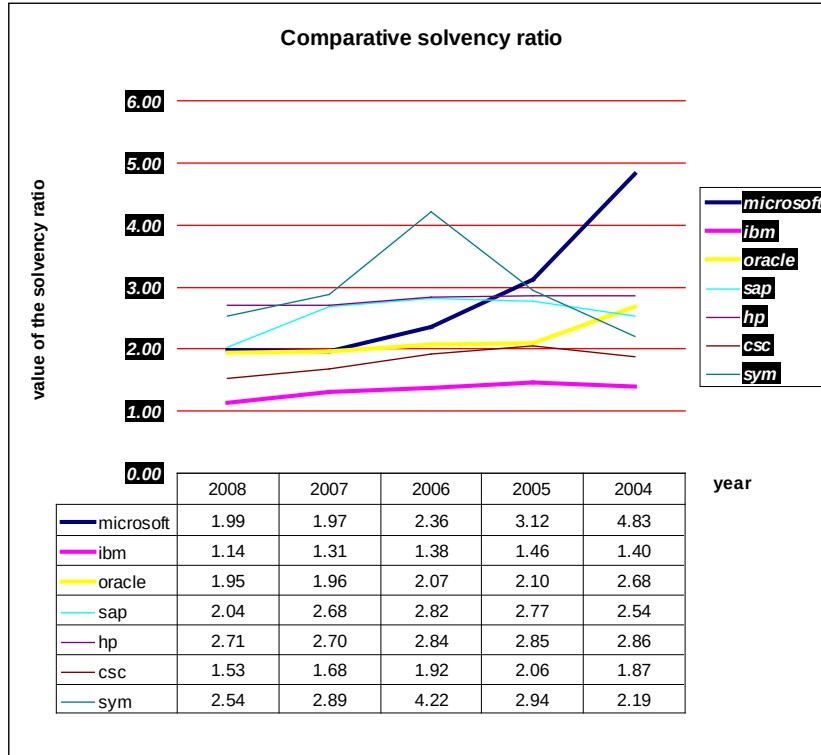


Fig 17: Solvency ratio

According to roe Microsoft was the company which had the highest ratio of assets to meet its long term obligations, but this decreased dramatically since 2005-2006. Another interesting evolution is Symantec's solvency ratio which achieved the highest point in 2006.

6.2.4. Activity ratios (Efficiency Ratio)

Funds of creditors and owners are invested in various assets to generate sales and profits. The better the management of assets, the larger is the amount of sales. Activity ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. These ratios are also called turnover ratios because they indicate the speed with which assets are being converted or turned over into sales and assets.

Total assets turnover ratio:

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

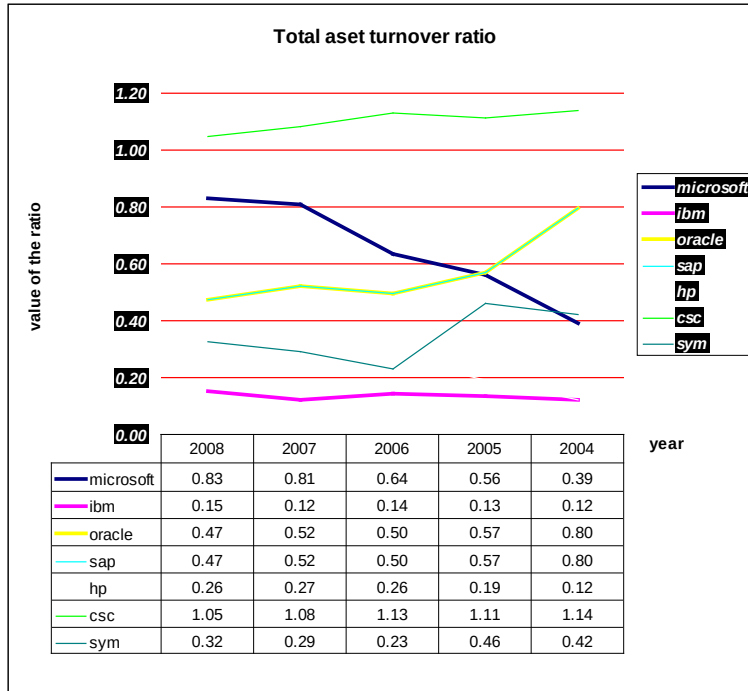


Fig 18: Tot. Asset Turnover Ratio

This ratio shows the firm's ability in generating sales from all financial resources committed to total assets. From all the companies listed above CSC has the highest rate of sales from total assets. At the opposite pole is IBM which has the lowest rate

6.3. Cash flow analysis

CFOD = Cash flow from operating activities / Long-term Debt.

This [coverage ratio](#) compares a company's operating [cash flow](#) to its Long term debt. This ratio provides an indication of a company's ability to cover long term debt with its yearly cash flow from operations. The higher the percentage ratio, the better the company's ability to carry its total debt.

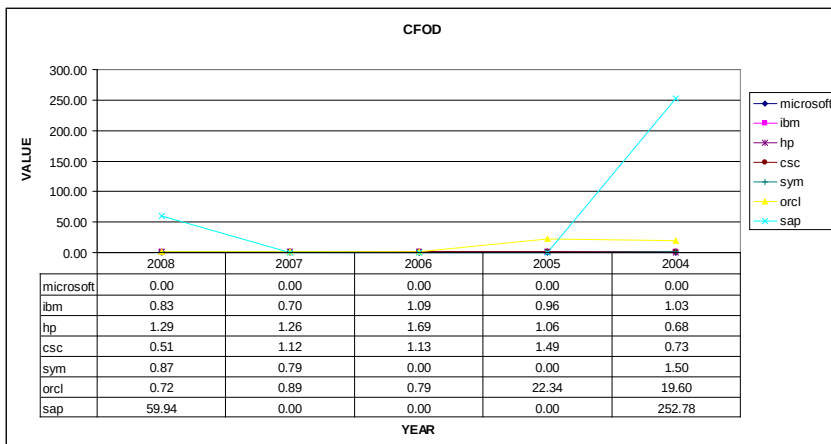


Fig 19: CFOD

The highest [coverage with cash flow](#) of Long term debt had Symantec during the years 2004, but also the lowest during the years 2005-2006. The same low rates are scored by Microsoft which had the lowest rate during all 4 years.

Microsoft obtained these result because Total Long term Debt is equal to 0
Cash flow per share = Cash flow from operations / Common stock

A measure of a firm's financial strength. Many analysts, as well as some of the greatest investors of all time, place more weight on cash flow per share than earnings per share. Cash flow per share is a useful measure for the strength of a firm and the sustainability of its business model.

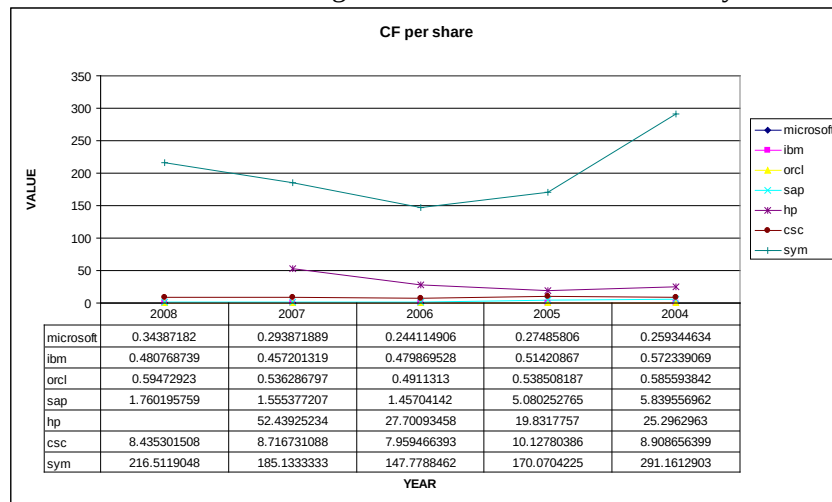


Fig 20: CF per share

In the figure above we can notice that 3 of the companies has almost the same values for measuring strength of a firm and the sustainability of its business model. But here clearly Symantec has a higher ratio. This happened not because they had a very high score at **Cash flow from operations**, but because their **Common Stock** was the lowest.

IV. CONCLUSION

In the analysis above we could compare the performance, profitability, solvency, etc, of some of the first world IT companies. Each of them had their stretch and their weaknesses, but clearly Microsoft and IBM had the highest score. Using the financial analysis instruments we could make a better delimitation between them.

But, we must be careful when we are using financial statement analysis. Strong financial statement analysis does not necessarily mean that the organisation has a strong financial future. Financial statement analysis might look good but there may be other factors that can cause an organisation to collapse.

The Internet, digital awareness, and the financial markets led to a period of rapid innovation. The result was excess capacity in virtually every dimension: compute cycles, bandwidth, and even HTML programmers. All of these things are still valuable—they're just not the source of profit that investors once thought, or hoped, that they would be.

According to Hal R. Varian “We are now in a period of consolidation. These assets have been, and will continue to be marked to market, to better reflect their true asset value—their potential for future earnings. This process is painful, to be sure, but not that different in principle from what happened to the automobile market or the radio market in the 1930s.” The future of the new technologies and the future of the internet are very long according to Hal R. Varian (2003). It is less probable that humanity will give up using new technology; it began to be a very pregnant part of our life.

The challenge now is to understand how to use this entire instrument. During the 90s an important capital was invested in IT, now we must fructify all that investment.

“The actual economy is in the quiet phase of combinatorial innovation: the components have been perfected, the initial inventions have been made, but they have not yet been fully incorporated into organizational work practices”, states Hal R. Varian (2003).

The challenge facing us is to re-engineer the flow of information through the enterprise. And not only within the enterprise-is the entire value chain up for grabs.

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