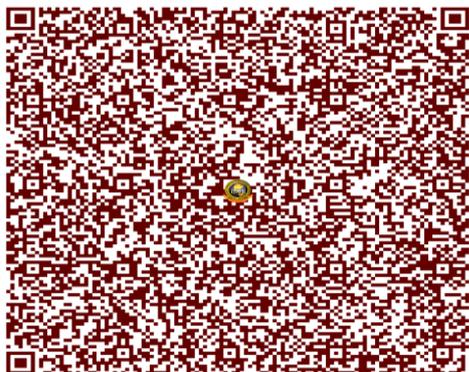# Fundamental analysis of IT industry in India

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Abstract

Information Technology Companies can be categorized in India into Large IT companies and Medium IT companies. These companies developed with greater size with Market capitalization and Return on Investment. The Information technology industry in India has gained a brand identity as a knowledge economy due to its IT and ITES sector. The IT–ITES industry has two major components: IT Services and business process outsourcing (BPO). The growth in the service sector in India has been led by the IT–ITES sector, contributing substantially to increase in GDP, employment, and exports. The sector has increased its contribution to India's GDP from 1.2% in FY1998 to 7.5% in FY2012. According to NASSCOM, the IT–BPO sector in India aggregated revenues of US$100 billion in FY2012, where export and domestic revenue stood at US$69.1 billion and US$31.7 billion respectively, growing by over 9%.An investor who would like to be rational and scientific in his investment activity has to evaluate a lot of information about past performance of the companies, industries and the economy as a whole before taking the investment decision and hence, the present study attempts to analyze the profitability position of the sample companies. The present study adopts an analytical and descriptive research design. The data of the sample IT industries (for a period of five years from 2008 to 2012) has been collected from the annual reports published by the IT industries. The Financial tool that is used for the purpose of analysis are Earning Per Share(EPS), Operating Profit Margin(OPM), Net Profit Margin(NPM), Debt Equity Ratio(DER), Return On Assets(ROA), Return On Net worth(RNW), Current Ratio(CR), Fixed Assets Turnover Ratio(FTR).The statistical tool that is used for testing hypothesis is Two-Way Analysis Of Variance (ANOVA).

Keywords: IT Industry, Financial Analysis, Financial Efficiency, Profitability Position, Intrinsic Value

1 Introduction

Information Technology (IT) is defined as the design, development, implementation and management of computer-based information systems, particularly software applications and computer hardware. Today, it has grown to cover most aspects of computing and technology. The largest firms globally include IBM, HP, Dell and Microsoft. Information Technology is one of the most important industries in the Indian economy. The IT industry of India has registered huge growth in recent years. In the last

ten years the Information Technology industry in India has grown at an average annual rate of 30%.

1.1 Factors leading to growth in the IT/ITEs sector are:

- Low operating costs and tax advantage.
- Favorable government policies.
- Technically qualified personnel easily available in the country.
- Rapid adoption of IT technologies in major sectors as Telecom, Manufacturing and BFSI.
- Strong growth in export demand from new verticals and non-traditional sectors as public sector, media and utilities.
- Use of new and emerging technologies such as cloud computing.
- SEZ as growth drivers; as more of SEZs are now being set up in Tier II cities and about 43 new tier II/III cities are emerging as IT delivery locations.

Table 1: Big Four IT Services Company

Firm	Revenues	Employees	Fiscal Year	Headquarters
TCS	$10.17 billion	254076	2012	Mumbai
Wipro	$7.30 billion	140569	2012	Bangalore
Infosys	$7.00 billion	153761	2012	Bangalore
HCL	$4.30 billion	85335	2012	Noida

Table 2: Major IT Hubs

RANK	CITY	DESCRIPTION
1	Bangalore	Popularly known as the Silicon Valley of India and leading software exporter from India. Bangalore is considered to be a global technology hub of India.
2	Hyderabad	Hyderabad is the SECOND largest Information technology hub of India. Notable companies include Microsoft India, Google, Facebook, Inc., EA Mobile etc. It is the third largest IT destination of India and the BPO hub of India.
3	Chennai	Chennai has the largest operations center of TCS.
4	Mumbai	The Financial capital of India, but recently many IT companies have established offices.
5	Delhi	The National Capital Region comprising Delhi, Gurgaon and Noida are clusters of software development.
6	Pune	Major Indian and International Firms present in Pune. Pune is also C-DAC Head-Quarter.
7	Kolkata	One of the largest cities in India, Kolkata contributes significantly to IT exports.
8	Kochi	The commercial and financial capital of Kerala is now houses all major IT companies including TCS, Wipro, CTS and contributes in a minor IT export of India.

1.2 structure of the Indian IT industry

The industry structure in the IT sector has four major categories. These are -

1. IT services
2. IT enabled services
3. Software products
4. Hardware

➢ IT Services

IT services constitute a major part of the IT industry of India. IT services include client, server and web based services. Opportunities in the IT services sector exist in the areas of consulting services, management services, internet services and application maintenance. The major users of IT services are -

- Government
- Banking
- Financial services
- Retail and distribution
- Manufacturing

➢ IT enabled services

The services which make extensive use of information and telecommunication technologies are categorized as IT enabled services. The IT enabled services is the most important contributor to the growth of the IT industry of India. Some of the important services covered by the ITES sector in India are -

- Customer-interaction services including call-centers
- Back-office services
- Revenue accounting
- Data entry and data conversion
- HR services
- Transcription and translation services
- Content development and animation
- Remote education
- Data search
- GIS
- Market research
- Network consultancy

➢ Software products

Software products are among the most highly exported products from India. The software industry in India originated in the 1970s and grew at a significant pace in the last ten years. Between 1996-1997 and 2002-2003, the Indian software industry grew more than five times from 2630crores to 13200crores. During the same period software and service exports from India grew by almost twelve times.

➢ Hardware

The hardware sector of the IT industry focuses on the manufacturing and assembling of computer hardware. The consumption of computer hardware is high in the domestic market. Due to the rise in the number of IT companies, sales of desktops, laptops, servers, routers, etc. have been on the rise in

recent years. Many domestic and multi-national; companies have invested in the computer hardware market in India.

1.3 Size of the Indian IT industry

The projections about the size of India's IT industry present a very optimistic picture. The industry is expected to grow to double its current size by the year 2012. India's IT industry is expected to grow at an annual average rate of 18% in the next five years. The industry is also expected to cross the 100 billion US Dollar mark by 2011. One of the major areas of growth for the IT industry of India is by tapping the potential in the domestic market. The IT industry of India is largely dependent on the export market. Penetrating more into the domestic market would create further opportunities of growth for the IT industry.

Some of the important aspects of the NASSCOM- McKinsey report related to the size of India's IT industry are -

- There is potential of 2.2 million people being employed in the IT industry of India by the end of 2008.
- Contribution of software and services to the total GDP of India will be more than 7.5%.
- FDI (Foreign Direct Investment) of 4.5 billion US Dollars expected in the IT industry by the end of 2008.
- 35% of total exports from India will be from IT exports.
- 225 billion US Dollars' worth of market capitalization from IT shares.
- Software's and services are exported to about 95 companies from India. North America accounts for 61% of the software exports from India.

2 Review of Literature

Literature review is a study involving a collection of literatures in the selected area of research in which the researcher has limited experience, and critical examination and comparison of them to have a better understanding. It also helps the researchers to update the past data, data sources and results and identify the gaps, if any in the researches. Thus, the reviews in the present study consist of the ones discussed below and they reveal that there are very scant studies in India emphasizing on the fundamental analysis of the industry sector.Jim Berg (1999) conducted a study – "Fundamental Analysis Using Internet". This study examined that fundamental analysis looks at the fundamental issues that drive the value of the particular company. These issues include its financial position, its industry sector, and the current economic environment. The objective was to identify companies that may be considered undervalued in the market with a view to investing when the time is right. In this study, Jim Berg outlined more about what fundamental analysis is and how it could be used.

In this study, John Colnan (1994), senior Research Analyst from SHAN Stockbroking's Research Department provides some briefs pointers on what information to look for and how to make sense of what is available.Mark P. Bauman (1996) conducted a study named, "A Review of Fundamental Analysis Research in Accounting". This paper has outlined the development of fundamental valuation model and reviewed related empirical work.

First, an accounting-based expression for a firm's equity value has been developed into a rich theoretical framework. They verified its descriptive validity regarding the mapping of accounting numbers into stock prices. This paper identified three major issues associated with practical implementation of the model; the prediction of future profitability, the length of appropriate forecast horizon, and the determination of the appropriate discount rate.Jon Lynch conducted a study, "Share

Market Analysis-Fundamental Vs Technical Analysis", which reveals that in recent times, there has been a bigger push towards stock market research, which is being conducted by private individuals. This has been possible through the vast amount of information on the Australian stock market, now available online to any subscriber. This article explains the difference between the fundamental and technical analysis; the most common methods adopted to conduct research on the performance of stock markets.

Vanstone B. Finnie G. and Tan C. (2004) conducted a study entitled- "Enhancing Security Selection in the Australian Stock Market Using Fundamental Analysis and Neural Networks". This paper examines financial trading from the aspect of security selection. In practice, it is unrealistic for a financial trader to participate in the fill market of tradable securities competing for investment capital. Essentially, there are two main methodologies used namely, fundamental analysis and technical analysis. This paper examines the practice of fundamental analysis and demonstrates how neural networks can be practically employed to enhance the fundamentalist selection process. Dr. Maria Nevis Soris and V.Sornaganesh (2012) conducted a study entitled-"Fundamental Analysis of NBFC in India" This study conducted to examine the economic sustainability of the five major NBFC in Indian NBFC sector and its financial performance.

3 Need and objectives of the study

An investor who would like to be rational and scientific in his investment activity has to evaluate a lot of information about past performance of the companies, industries and the economy as a whole before taking the investment decision and hence, the present study attempts to analyze the profitability position of the sample companies.

Some of the objectives of conducting the study are as follows:

- To test the financial efficiency of the IT Industries.
- To acquire practical exposure of financial analysis of an enterprise.
- To get familiarity of scheming efficiency of different firms.
- To analyses the profitability position of the IT Industries.
- To gain knowledge of evaluating intrinsic value of a firm.
- To take decisions cautiously after studying risks involved in the same.
- To offer suggestions on the basis of findings of the study.

4 Hypotheses

The study tests whether the selected variables of sample companies vary significantly during the study period. This specific hypothesis is tested at appropriate time while analyzing and interpreting the results. The following Hypothesis has been taken to put on test:

H_1: The Earning Per Share (EPS) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_2: The Operating Profit Margin (OPM) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_3: The Net Profit Margin (NPM) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_4: The Debt Equity Ratio (DER) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_5: The Return on Assets (ROA) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_6: The Return on Net worth (RONW) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_7: The Current Ratio (CR) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

H_8: The Fixed Assets Turnover Ratio (FATR) position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

5 Research Methodology

The present study adopts an analytical and descriptive research design. The data of the sample IT industries (for a period of five years from 2008 to 2012) has been collected from the annual reports published by the IT industries. A finite sample size of four industries has been selected for the purpose of the study. They are Tata Consultancy Services (TCS), WIPRO, HCL and Mahindra Satyam.The variables used in the analysis of the data are Earning Per Share(EPS), Operating Profit Margin(OPM), Net Profit Margin(NPM), Debt Equity Ratio(DER), Return On Assets(ROA), Return On Net worth(RNW), Current Ratio(CR), Fixed Assets Turnover Ratio(FTR).While interpreting the results, the statistical tool of two-way Analysis of Variance (ANOVA) has been used. In view of the objectives of the study listed above, exploratory research design has been adopted. Exploratory research is one, which largely interprets the already available information, and it lays particular emphasis on analysis and interpretation of the existing and available information, and it makes use of secondary data.

5.1 Time Period of the Study

The study is conducted based on the audited financial statements of IT Industries for a period of 5 years (Mar 2008 to Mar 2012).

5.2 Limitations of the Study

> ➢ Only limited tools were used.
> ➢ Due to constraint of time, the researcher is not able to cover all the Indian IT industries.

5.3 Tools Used For Analysis

- **FINANCIAL TOOLS :** The Financial tool that is used for the purpose of analysis are Earning Per Share(EPS), Operating Profit Margin(OPM), Net Profit Margin(NPM), Debt Equity Ratio(DER), Return On Assets(ROA), Return On Net worth(RNW), Current Ratio(CR), Fixed Assets Turnover Ratio(FTR).
- **STATISTICAL TOOLS:** The statistical tool that is used for testing hypothesis is Two-Way Analysis Of Variance (ANOVA).

5.4 Sources of Data

This study is based on secondary data, discussions with personnel concerned. The secondary data consists of the annual reports of four IT Industries ranging for the last five years. Various other reports like Journals and Websites were also referred to for the present study.

5.5 Sample Size

A sample of four IT Industries in India viz., TCS, WIPRO, HCL and Mahindra Satyam were considered for the purpose of analysis.

6 Analyses and Interpretation

6.1 Financial Analysis

Financial analysis (also referred to as financial statement analysis or accounting analysis or Analysis of finance) refers to an assessment of the viability, stability and profitability of a business, sub-business or project. Use and transformation of financial data into a form that can be used to monitor and evaluate the firm's financial position, to plan future financing, and to designate the size of the firm and its rate of growth. Financial analysis includes the use of financial statement analysis and funds flow analysis.

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.

- 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 equipment 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;
- Other decisions that allow management to make an informed selection on various alternatives in the conduct of its business.

6.2 Ratios Used For Analysis

The ratios being calculated for the purpose of analysis of financial performance are:

➢ Earnings per Share (EPS)
➢ Operating Profit Margin (OPM)
➢ Net Profit Margin (NPM)
➢ Debt Equity Ratio (DER)
➢ Return on Assets (ROA)
➢ Return on Net worth (ROA)
➢ Current Ratio (CR)
➢ Fixed Assets Turnover Ratio (FTR)

7 Results and Discussions

7.1 Earning Per Share (EPS)

Earnings per Share are the measure of a company's ability to generate after tax profits per share held by the investors. In practice, the performance of a corporation is better judged in terms of its earnings per share. The flow of capital to the companies, under the present imperfect capital market conditions, would be made on the evaluation of EPS. Investors lacking inside and detailed information would look upon the EPS as the best base to take their investment decisions. A higher EPS means better capital productivity. This ratio is computed with the help of the following formula as expressed in rupee terms:

Earnings after Taxes and Preferred dividend
Total number of Equity Shares Outstanding

The Earning per share position of the sample companies is summarized in Table 1 and discussed below

Table7.1: EPS(in rupees) position of sample companies					
Year	TCS	INFOSYS	WIPRO	HCL	MS
2008	46.07	78.15	20.96	17.81	25.59
2009	47.92	101.58	20.30	15.21	-117.75
2010	28.62	101.13	33.36	11.98	-0.61
2011	38.62	112.22	17.74	7.95	-1.08
2012	55.97	147.5	19.05	2.15	10.22
Average	43.44	108.116	22.282	11.02	-16.726

As shown in Table 1, the EPS of INFOSYS is substantially higher than that of TCS, WIPRO, HCL and Mahindra Satyam every year as per the data taken from the year 2008 to year 2012. On Average, INFOSYS has generated EPS of Rs.108.116 highest among all followed by TCS(43.44), WIPRO (22.282), HCL (11.02) and then MS (-16.726), the lowest among the five sample companies. The analysis reveals that INFOSYS is the most efficient company in the terms of generating Earning per Share.

The EPS position of sample companies is compared and tested using the following hypothesis.

7.1(a) Hypothesis Testing

H_0: EPS of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly

H_a: EPS of TCS, INFOSYS, WIPRO, HCL and MS differ significantly

Table 2 : One-way ANOVA for EPS					
Source of variation	SS	Df	MS	F-ratio	5% F-limit
Between Groups	44100.581	4	11025.14525	13.3448	F(20,4) = 2.87
Within Groups	16523.5395	20	826.176975		
Total	60624.1205	24			

7.1(b) Interpretation

Since the calculated value of F is 13.3448 which is greater than the table value of 2.87 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the EPS position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

7.2 Operating Profit Margin (OPM)

Operating Profit Margin indicates how effective a company is at controlling the costs and expenses associated with their normal business operations. A rise in the operating profit margin indicates a decline in efficiency. This ratio is used to test the efficiency of the business. This ratio is found out using the following formulae and expressed in percentage terms.

$$\frac{\text{Operating Profit} * 100}{\text{Net Sales}}$$

The Operating Profit Margin position of the sample companies is depicted in Table 3 and discussed below.

Table 3: OPM (in %) position of sample companies					
Year	TCS	INFOSYS	WIPRO	HCL	MS
2008	27.11	-	21.24	3.72	21.67
2009	26.87	-	22.12	3.61	-4.62
2010	28.93	-	24	3.21	2.95
2011	29.96	-	21.90	2.51	8.84
2012	29.30	-	19.63	0.84	16.01
Average	28.434	-	21.778	2.778	8.97

As shown in table 3, among all the sample companies, TCS has sustained the highest Operating profit margin followed by WIPRO which has registered a reasonably higher margin. On an aggregate basis, TCS is highly successful in controlling the expenses by registering the Five years OPM of 28.434%.

Thus it is found that TCS is the most efficient company in controlling costs and expenses when compared to other sample companies.

The OPM position of sample companies are compared and tested using the following hypothesis.

7.2(a) Hypothesis Testing

H_0: OPM of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly

H_a: OPM of TCS, INFOSYS,WIPRO,HCL and MS differ significantly

Table 4 : One-way ANOVA for OPM					
Source of variation	SS	Df	MS	F-ratio	5% F-limit
Between Groups	3015.71762	4	753.929405	24.86	$F(15,4) = 3.06$
Within Groups	454.88708	15	30.32580533		
Total	3470.6047	19			

7.2 (b) Interpretation

Since the calculated value of F is 24.86 which is greater than the table value of 3.06 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the OPM position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

7.3 Net Profit Margin (NPM)

Net Profit Margin indicates how much a company is able to earn after accounting for all the direct and indirect expenses to every rupee of revenue. The ratio is designed to focus attention on the net profit margin arising from business operations before interest and tax is deducted. The convention is to express profit after tax and interest as a percentage of sales. This ratio is calculated by using the following formula and is expressed in percentage terms.

$$\frac{\text{Net Profit} * 100}{\text{Net Sales}}$$

The Net Profit Margin position of the sample companies is depicted in Table 5 and is discussed below.

7.3 (a) Hypothesis Testing

H_0: NPM of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly

H_a: NPM of TCS, INFOSYS,WIPRO, HCL and MS differ significantly

Table 6 : One-way ANOVA for NPM					
Source of variation	SS	Df	MS	F-ratio	5% F-limit
Between Groups	5209.4998	4	1302.37495	3.01	$F(20,4) = 2.87$
Within Groups	8652.7052	20	432.63526		
Total	13862.205	24			

7.3(b) Interpretation

Since the calculated value of F is 3.01 which is greater than the table value of 2.87 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the NPM position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

7.4 Debt Equity Ratio (DER)

Debt Equity Ratio compares the creditors' funds with owners' funds. It indicates how much money is being placed by the creditors as that of equity holders. It represents the proportion of borrowed funds in the total capital of the company. It represents the proportion of borrowed funds in the total capital of the company. A debt equity ratio of 2:1 is the norm accepted by financial institutions for financing of projects. If the proportion of debt to equity is low, a company is said to be low geared. Higher debt equity ratio may be permitted for highly intensive industries like petrochemicals, fertilizers, power, etc. This ratio is calculated by using the following formula and expressed in terms of times.

$$\frac{\text{Total Debt}}{\text{Net worth}}$$

The Debt to Equity position of the sample companies is depicted in Table 7 and is discussed below.

Table 7 : DER (in %) position of sample companies					
Year	TCS	INFOSYS	WIPRO	HCL	MS
2008	0.01	-	0.33	0.35	0.03
2009	0.01	-	0.4	0.2	-
2010	0.01	-	0.31	0.27	0.02
2011	0.01	-	0.22	0.3	0.02
2012	0.01	-	0.22	0.31	0.01
Average	0.01	-	0.296	0.286	0.016

The five years data reveals that WIPRO has achieved the highest Debt Equity Ratio and is followed by HCL. TCS alone has registered the lowest ratio. Even the five years Debt Equity Ratio of WIPRO is significantly higher (0.296times) than that of HCL (0.286Times), MAHINDRA SATHYAM (0.016 times) and TCS (0.01 times).

Thus it is inferred that TCS has the least proportion of debt fund in its total capital and hence it is the most efficient company among all other sample companies. TCS has the highest portion of its self-owned funds in the capital structure followed by WIPRO, HCL and MAHINDRA SATHYAM.

The DER position of sample companies are compared and tested using the following hypothesis.

7.4 (a) Hypothesis Testing

H_0: DER of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly
H_a: DER of TCS, INFOSYS,WIPRO, HCL and MS differ significantly

Table 8 : One-way ANOVA for DER					
Source of variation	**SS**	**Df**	**MS**	**F-ratio**	**5% F-limit**
Between Groups	**0.47924**	**4**	**0.11981**	**45.555**	**F(14,4)**
Within Groups	**0.03676**	**14**	**0.00263**		**= 3.11**
Total	**0.516**	**18**			

7.4(b) Interpretation

Since the calculated value of F is 45.555 which is greater than the table value of 3.11 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the FATR position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

7.5 Return On Assets (ROA)

Return on assets measures the overall efficiency of capital invested in business. The profitability of the firm is measured by establishing relation of net profit with the total assets of the organization. It indicates what the yield is for every rupee invested in assets. This is computed using the following formula and is expressed in percentage terms.

$$\text{\underline{Earnings after Taxes and Preferred Dividends} * 100}$$
$$\text{Total Assets}$$

The Return on Assets position of the sample companies is depicted in Table 9 and is discussed below.

Table 9 : ROA (in %) position of sample companies					
Year	**TCS**	**INFOSYS**	**WIPRO**	**HCL**	**MS**
2008	**111.43**	**235.84**	**79.05**	**58.79**	**107.94**
2009	**136.38**	**310.9**	**85.42**	**66.14**	**13.06**
2010	**76.72**	**384.02**	**120.49**	**87.26**	**15.99**
2011	**99.53**	**426.73**	**86.86**	**87.36**	**14.66**
2012	**126.49**	**518.21**	**99.04**	**86.02**	**25.38**
Average	**110.11**	**375.14**	**94.172**	**77.114**	**35.406**

As per the data taken from year 2008 to year 2012, INFOSYS has achieved the highest yield of 375.14%. The data reveals that Mahindra Satyam registered the lowest ROA of 35.406%. On the five years average, INFOSYS has sustained the higher ROA followed by TCS which has registered a reasonably higher yield. Thus, TCS is the most efficient company in generating yield over assets and hence their overall efficiency is better than other four sample companies.

The ROA position of sample companies are compared and tested by using the following Hypothesis

7.5 (a) Hypothesis Testing

$H_{0:}$ ROA of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly
H_a: ROA of TCS, INFOSYS,WIPRO, HCL and MS differ significantly

Table 10 : One-way ANOVA for ROA					
Source of variation	**SS**	**Df**	**MS**	**F-ratio**	**5% F-limit**
Between Groups	**365830.0243**	**4**	**91457.50608**	**31.858**	**F(20,4) = 2.87**
Within Groups	**57414.59492**	**20**	**2870.729746**		
Total	**423244.6192**	**24**			

7.5(b)Interpretation

Since the calculated value of F is 31.858 which is greater than the table value of 2.87 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the ROA position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

7.6 Return On Networth (RONW)

Return on net worth expresses the net profit in terms of the equity shareholders' funds. This ratio is an important yardstick of the performance of equity shareholders since it indicates the return on the funds employed by them. The factor which motivates shareholders to invest in a company is the expectation of an adequate rate of return on their funds and periodically, they will want to assess the rate of return earned in order to decide whether to continue with their investment. This ratio is useful in measuring the rate of return as a percentage of the book value of shareholders equity. It is computed with the help of the following formula and expressed in percentage:

$$\frac{\text{Net Profit after interest and tax} *100}{\text{Net worth}}$$

Where, Net worth = Equity capital + Reserves and surplus

The Return on Net worth position of the sample companies is depicted in Table 11and is discussed below.

Table 11 : RONW (in %) position of sample companies					
Year	**TCS**	**INFOSYS**	**WIPRO**	**HCL**	**MS**
2008	41.34	-	26.51	30.38	23.32
2009	35.13	-	23.76	22.99	929.18
2010	37.30	-	27.68	13.73	-6.62
2011	38.80	-	20.41	9.10	-8.34
2012	44.24	-	19.23	2.49	43.71
Average	39.362	-	23.518	15.738	196.25

Among all the four companies, Mahindra Satyam has made the highest RONW of 929.18% in 2009, but the data reveals that it also shows the lowest RONW of -8.34% in 2011. On the five years average Mahindra Satyam (196.25%) has sustained the higher RONW followed by TCS (39.362%), WIPRO (23.518%) and HCL (15.738%) which has registered a reasonably higher yield.

Thus, MS is the most efficient company in generating additional earnings by using invested earnings other than three sample companies.

The RONW position of sample companies are compared and tested using the following hypothesis:

7.6 (a) Hypothesis Testing

H_0: RONW of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly
H_a: RONW of TCS, INFOSYS,WIPRO, HCL and MS differ significantly

Table 12 : One-way ANOVA for RONW					
Source of variation	**SS**	**Df**	**MS**	**F-ratio**	**5% F-limit**
Between Groups	128768.6355	4	32192.15888	0.716	F(15,4) = 3.06
Within Groups	673968.075	15	44931.205		
Total	802736.7105	19			

7.6 (b)Interpretation

Since the calculated value of F is 0.716 which is greater than the table value of 3.06 (CV>TV at 5% significance level), the null hypothesis is accepted and the alternative hypothesis is rejected. Hence, it is concluded that the RONW position of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly.

7.7 Current Ratio (CR)

This ratio measures the solvency of the company in the short-term. Current Assets are those assets which can be converted into cash within a year. Current Liabilities and provisions are those liabilities that are payable within a year. A current ratio 2:1 indicates a highly solvent position. A current ratio 1.33:1 is considered by banks as the minimum acceptable level for providing working capital finance. The constituents of the current assets are as important as the current assets themselves for evaluation of a company's solvency position. A very high current ratio will have adverse impact on the profitability of the organization. A high current ratio may be due to the piling up of inventory, inefficiency in collection of debtors, high balances in cash and bank accounts without proper investment.This ratio is calculated by the following formula

Current Assets

Current Liabilities

The Current ratio position of the sample companies is depicted in Table 13 and is discussed below.

Table 13 : CR (in proportion) position of sample companies					
Year	**TCS**	**INFOSYS**	**WIPRO**	**HCL**	**MS**
2008	1.98	3.3	2.54	1.36	4.05
2009	1.83	4.71	1.1	1.38	0.84
2010	1.49	4.28	1.33	1.35	1.64
2011	2.41	5.11	1.45	1.49	1.52
2012	2.45	4.68	1.92	1.42	2.16
Average	2.032	4.416	1.668	1.4	2.042

As per the data taken from year 2008 to year 2012, the current ratio of TCS is 1.98:1 in 2008; it indicates TCS is highly solvent position. WIPRO has achieved 1.33:1 in 2010, it is considered by banks as the minimum acceptable level for providing working capital finance. INFOSYS has achieved the highest current ratio of 4.71:1 in 2009; it indicates the inefficiency in collection of debtors, high balances in cash and bank accounts without proper investment. Thus it is concluded that INFOSYS has achieved the greater short term solvency and over capitalization when compared to other sample companies.The CR position of sample companies are compared and tested by using the following hypothesis:

7.7 (a) HYPOTHESIS TESTING

H_0: CR of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly

H_a: CR of TCS, INFOSYS, WIPRO, HCL and MS differ significantly

Table 14 : One-way ANOVA for CR					
Source of variation	**SS**	**Df**	**MS**	**F-ratio**	**5% F-limit**
Between Groups	29.12304	4	7.28076	14.85	F(20,4) = 2.87
Within Groups	9.80276	20	0.490138		
Total	38.9258	24			

7.7 (b) Interpretation

Since the calculated value of F is 14.85 which is greater than the table value of 2.87 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the CR position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

7.8 Fixed Assets Turnover Ratio (FTR)

This measures the company's ability to generate sales revenue in relation to the size of the asset investment. A low asset turnover may be remedied by increasing sales or by disposing of certain assets or both. An increase in the fixed asset figure may result from the replacement of an asset at an increased price or the purchase of an additional asset intended to increase production capacity. It is the proportion of sales to the fixed assets, represented by,

This ratio is calculated by the following formula and expressed in rupee terms.

$$\frac{\text{Cost of goods sold (or) Net Sales}}{\text{Fixed Assets}}$$

The Fixed Assets turnover position of the sample companies is depicted in Table 15 and is discussed below.

Table 15 : FATR (in %) position of sample companies					
Year	TCS	INFOSYS	WIPRO	HCL	MS
2008	5.74	-	7.81	58.06	5.23
2009	5.15	-	3.85	52.89	4.11
2010	4.74	-	3.47	45.83	3.05
2011	4.91	-	3.45	35.62	1.83
2012	5.39	-	3.81	31.00	3.01
Average	5.186	-	4.478	44.68	3.446

As per the data reveals that HCL has the highest Fixed Assets Turnover Ratio of 58.06 times in 2008, it indicates the replacement of an asset at an increased price or the purchase of an additional asset intended to increase production capacity. Mahindra Satyam has achieved the lowest Fixed Assets Turnover Ratio of 1.83 times in the year 2011.

Hence it is concluded that HCL is over trading on its assets and it is the most efficient company among all the other three sample companies.

The FTR position of sample companies are compared and tested using the following hypothesis:

7.8(a) Hypothesis Testing

H_0: FATR of TCS, INFOSYS, WIPRO, HCL and MS does not differ significantly
H_a: FATR of TCS, INFOSYS,WIPRO, HCL and MS differ significantly

Table 16 : One-way ANOVA for FATR					
Source of variation	SS	Df	MS	F-ratio	5% F-limit
Between Groups	6935.93788	4	1868.53435	52.077	F(15,4) = 3.06
Within Groups	538.19952	15	35.879968		
Total	7474.1374	19			

7.8(b) Interpretation

Since the calculated value of F is 52.077 which is greater than the table value of 3.06 (CV>TV at 5% significance level), the null hypothesis is rejected and the alternative hypothesis is accepted. Hence, it is concluded that the FATR position of TCS, INFOSYS, WIPRO, HCL and MS differ significantly.

8 Findings

- The Earning per Share of INFOSYS is substantially higher than that of TCS, WIPRO, HCL and Mahindra Satyam for the data taken from the year 2008 to 2012, INFOSYS has generated EPS of Rs.108.116, making INFOSYS one of the most efficient company's in terms of generating earnings.

- TCS has sustained the highest operating profit margin of 28.434%. Thus it is found that TCS is the most efficient company in controlling costs and expenses as compare to other sample companies.

- INFOSYS has sustained the highest Net profit margin of 26.244%. INFOSYS is the most efficient company in controlling indirect expenses in comparison to TCS, WIPRO, HCL and Mahindra Satyam.

- TCS has the highest portion of its self-owned funds in the capital structure followed by Mahindra Satyam, HCL and WIPRO. TCS has the least proportion of debt fund in its average capital of 0.01 times and hence it is the most efficient company among all other sample companies.

- INFOSYS has achieved the highest ROA of 375.14% and it is the most efficient company in generating yield over assets and hence their overall efficiency is better than that of TCS, WIPRO, HCL and Mahindra Satyam.

- Mahindra Satyam is the most efficient company in generating additional earnings other than three sample companies.

- INFOSYS has the greater short term solvency and over capitalization of assets and hence their overall efficiency is better than that of TCS, WIPRO, HCL and Mahindra satyam.

- HCL is highly overtrading on its assets and their overall efficiency is better than that of other sample companies.

9 Suggestions

- The investors with long term perspective of investment should invest their riches in the company that is registering high profit margins constantly. TCS resolves this rationale of the investors.

- Investors with short term outlook for investment should prefer INFOSYS as their investment intention because there is more responsiveness between the earning capacity and the share price.

- The investors who are risk averse may invest their capital in TCS as it has the highest portion of its self-owned funds in its capital structure.

- Mahindra Satyam has registered the lowest earning capacity, and least yield over its assets therefore immediate investment in the same should be evaded.

- The study also revealed that INFOSYS is efficient in generating yield over assets which indicates that its overall efficiency is good. The investors with an objective of earning moderate returns might invest in INFOSYS.

- Due to technological changes, TCS has generated high yield over assets. Because TCS use modern technologies to earn more profit in the way of assets.
- Since all the four companies has higher cash pile in their Balance sheet. This is actable time to go for acquisition through merger for inorganic growth.

10 Conclusion

There are still challenges going forward in current Economic Environment. European countries barring the UK and Ireland have been shy to the concept of sending IT jobs overseas largely because of cultural and linguistic differences. Also, there are stringent labor laws in these countries that secure employee rights and make off shoring difficult. Indian companies are betting a strategic acquisition to keep the growth engine revving. The debt crisis has also caused a significant fall in commercial and residential property prices making infrastructure investments cheaper for sensitive foreign companies. Indian companies love 'fire sales' and the crisis is a good opportunity to bag good assets (companies and other infrastructure) at discounted rates.In the current economic environment, TCS as a welcome game changer that offers significantly lower pricing, better service levels, more sophisticated offerings, a customer-centric mindset and a global footprint.

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