Financial Performance of Information Technology Industry in India using Du-Pont Analysis

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Abstract: **This study attempts to measure the performance of the top 10 Indian companies in the Information Technology industry. The main objective of this study is to determine the financial performance of IT companies through internal and external measures. The internal performance is measured by applying the DuPont model of analysis. The measures of Return on equity (ROE), Return on asset (ROA) and the profit margin of the companies have been considered for the analysis. The stock prices have been considered as the external measure of performance. The study had been undertaken for a ten-year period from 2007 to 2017. A detailed financial analysis of all ten companies using the DuPont system shows that L&T Infotech has higher ROE, ROI, Net profit margin, Financial leverage.**

Keywords: **DuPont Analysis, Return on equity, Return on Assets, Financial Performance, Information technology.**

I. INTRODUCTION

Information technology in India is the key part of the country's economy and is one of the fastest-growing industries in the world. The global IT & IT enabled services market (excluding hardware) reached a whopping US$ 1.2 trillion in 2016-17; the global sourcing market for software increased 1.7 times and reached US$ 173-178 billion in the same period. India remained the world's top software and services outsourcing destination in 2016-17 with a share of 55 percent. This sector has increased its contribution from 1.2% of GDP in 1998 to 7.5% in 2017. internet industry in India is likely to double to reach US$ 250 billion by 2020. The number of internet users in India is growing exponentially and is expected to reach 730 million by 2020 according to a report by National Association of Software and Services Companies (NASSCOM). The sector has been one of the largest attractors of FDI to the country. The computer software and hardware sector in India cumulatively acquired Foreign Direct Investment of US$22.83 billion between April 2000 and December 2017, according to the data released by the Department of Industrial Policy and Promotion (DIPP). Indian IT exports are expected to grow at 7-8% in 2017-18, in addition to adding 130,000-150,000 new jobs during the same period. Top Indian Information Technology firms are diversifying their services and showcasing leading ideas in block-chain, artificial intelligence and machine learning using innovation, research and development, to create various offerings for their clients.

For any business, there are numerous indicators to describe how well the business is performing. Among these indicators, DuPont is one of the most effective models of assessment. DuPont analysis is a measurement of financial performance of companies on one hand, and on the other hand, it guides in decision making. The DuPont method was developed in 1918 by an engineer at DuPont who was assigned with analysing the finances of a company that DuPont was acquiring. The model was made prominent by F. Donaldson Brown when he was assigned to clean up the finances of General Motors. Since then it has become one of the most important models for financial analysis. Today two variants of DuPont model are used a three-step model and an extended five-step model.

This objective of this study is to measure the financial performance of the top 10 publicly listed Information Technology companies in India. To financial performance of the companies was analysed based on a break-down of the DuPont model

into three components, namely, Net Profit Margin, Total Asset Turnover, and the Equity Multiplier. The Return on equity (ROE) measures a firm's profitability by considering the profit generated with the money that shareholders have invested. The ROE is useful for comparing the profitability of a firm with other firms in the same industry. It illustrates which company is effective in turning the cash invested in the business into greater gains and growth for both the company and investors. The return on equity determines the operational efficiency of the company in making use of the invested funds.

This study is to find the financial performance of Information Technology companies and Information Technology industry, impact of DuPont indicators on ROE and impact of DuPont indicators on stock price. The study shows that Information Technology industry financial performance is not well in the year 2017 overall TCS is performing well. DuPont indicators like Net profit margin, Asset turnover, Financial leverage has significant impact on ROE and it has no impact on Return on stock.

II.   REVIEW OF LITERATURE

The financial objectives of a for-profit business primarily concern the needs of the external suppliers of debt and equity capital. The economic returns to shareholders comprise dividends and capital gains on the market value of their shares. As earning determine what can be paid out as dividend in the long run, shareholders are primarily concerned with financial measures like earnings, ROS, ROA, ROE, ROI. (R. Thorpe, J. Holloway, 2008). For an investment to be acceptable to a firm's financial management it must provide a positive answer to the question "Will the acquisition of this asset increase the value of the owner's equity?" (F. Arditti, 1967).

The DuPont model was created in the early 1900s to assess the profitability of a business (Sheela an Karthikeyan, 2012).

Modified twice after its initial conception, the modification of the DuPont model shifted the focus from ROA to ROE, incorporating debt or "leverage" as a third area of attention. This modification made the DuPont model a powerful tool for strategic decision making within an organization to increase ROE (Collier, McGowan and Muhammad, 2006)

The latest modification of the DuPont model incorporates a combination of five ratios to determine ROE. With the focus of annual statements from a managerial perspective being to assess a firm's financial performance, the significance of operating decisions (profitability and efficiency) and financing decisions (leverage) upon ROE continues to be important, and recent evidence has shown that this modified DuPont approach can be used to identify the causes of financial problems within manufacturing companies (Liesz and Maranville, 2008).

Brigham and Houston, (2001) The modified model was a powerful tool to illustrate the interconnectedness of a firm's income statement and its balance sheet, and to develop straight-forward strategies for improving the firm's ROE.

Hawawini and Viallet (1999) offered yet another modification to the DuPont model. This modification resulted in five different ratios that combine to form ROE. In their modification they acknowledge that the financial statements firms prepare for their annual reports (which are of most importance to creditors and tax collectors) are not always useful to managers making operating and financial decisions.

Numerous studies have used the DuPont model to analyse the financial performance of companies. According to Rogova (2014), DuPont analysis effectively revealed factors of efficiency which had, in turn, impacted on the investment appeal of Russian oil-extracting companies. It was found that a strong advantage of ROE was the possibility of its disaggregation into different profitability ratios, with ROE indicating profitability and efficiency from the shareholders' point of view.

The author Mihaela Herciu, Claudia Ogrean & Lucian Belascu (2011) aims to demonstrate that in most cases the most profitable companies are not the most attractive for investors – through Du Pont Analysis method. To do this, we take into account the top 20 most profitable companies in the world in 2009 (according to Fortune). By using Du Pont analysis, we came to the results that the ranking is not preserved when indicators (ratios) such as ROA (return on assets) or ROI (return on Investment), ROE (return on equity) or ROS (return on sales) are taken into consideration.

The authors Dr Ahmed Arif Almazari (2012) attempts basically to measure the financial performance of the Jordanian Arab commercial bank for the period 2000-2009 by using the DuPont system of financial analysis which is based on analysis of return on equity model and return on investment model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. It was found that the financial performance of Arab Bank is relatively steady and reflects minimal volatility.

The author Moss Charles B. (2009, p. 9) examines the applicability of the DuPont model to study the performance of Agriculture, states that the Total Assets Turnover is less important than the Profit Margin in terms of influence on ROE. The results obtained through the model confirm the company policies working in agriculture.

The authors Christina Sheela and K. Karthikeyan (2012, p. 91), in the work Financial Performance of Pharmaceutical Industry in India using DuPont Analysis, examine profitability by the DuPont model on three of the largest pharmaceutical companies in India. Following the study, the authors concluded that the analysis enables ranking companies according to the indicators presented in the model, but may also stress the influence of factors determining the performance of the individual companies. However, the authors stress that absolute measurements are not always relevant, and to compare several companies, it is necessary to have a common basis in the calculation of the rates of return.

III. RESEARCH METHODOLOGY

The study used secondary data from financial statements of top ten publicly listed IT companies. The study has been undertaken for a ten-year period from 2007 - 2017. The major sources of data were the financial statements of the companies, NSE & BSE. The performance of the firms was studied using DuPont model and Return on the stock.

1. Return on stock:

Return on stock is calculated by difference between the today's market price and yesterday's market price to yesterday's market price.

$$Return = \frac{Today's\ market\ price - Yesterday's\ market\ price}{Yesterday's\ market\ price}$$

2. DuPont Model:

DuPont model divides the ROE into three parts: Net profit margin, Total asset turnover, and Equity multiplier.

ROE = (Net profit/Sales) * (Sales/Assets) * (Assets/Shareholder's equity)

That makes ROE = (Net Profit Margin) * (Asset Turnover) * (Equity Multiplier).

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. The following section explains the three components in detail.

Net profit margin:

The Net Profit margin of a firm shows how much earning is generated from a rupee of the asset. Net profit margin depends upon the competition faced by the organization. In a competitive market, profit margin would be low, whereas a company with high-profit margin indicates that they have a product or service with a competitive advantage and price premium. Net profit margin varies from firm to firm. The Net Profit Margin is calculated using the formula: (Net profit/Net Sales) *100

Asset turnover ratio:

Asset turnover denotes the amount of sales is generated from a company by deploying each rupee of the asset. It helps to measure effectiveness and efficiency of the management. Most of the high-profit-margin companies tend to have lower asset turnover. On the contrary, low margin organizations tend to have a high turnover ratio as they are highly dependent upon high sales volume to increase profit. By improving the asset management policies, a firm can effectively increase its equity returns.The formula used to calculate the Asset turnover ratio is: (Net Sales/Total Assets)

Equity multiplier:

The last and most important component of DuPont model is the equity multiplier which shows how the firm can take benefit from (leverage) debt to increase its ROE. A higher equity multiplier indicates high financial leverage, which means the firm relies more on borrowed loan or other sources of debt to finance its assets. The organization can increase its ROE by increasing equity multiplier. But if a company already has high financial leverage, taking an additional loan will create a situation of not being able to fulfil obligation towards creditors and which results in a chance of being bankrupt.

The formula used to calculate the equity multiplier is: (Assets/Shareholder's equity)

Assumptions from the model:

1. Sales are considered as total income

2. Total asset is calculated as a sum of non-current assets and current assets

3. Total equity is calculated as a summation of capital, reserves, and surplus.

Table 1: Details of Companies Taken for study

COMPANY	TOTAL ASSESTS Rs (cr)	TOTAL SALES Rs (cr)	MARKET CAPITALIZATION Rs (cr)	SHAREHOLDERS FUNDS Rs (cr)
TCS	89758.00	92693	581338	78022
INFOSYS	79885	59289	253392.77	68017
WIPRO	63156.90	45639.60	142123.33	46705.60
HCL	32371.91	19318.31	131445.46	25973.29
TECH MAHINDRA	23732.80	23165.40	59873.52	16890.20
L&T INFOTECH	2070.20	3112.50	14427.86	1531.50
ORACLE	5102.32	3878.40	32891.04	2675.92
MINDTREE	3479.40	4752.60	13301.80	2757.80
MPHASIS	5375.20	3018.55	16520.44	4695.33
ROLTA	8462.55	1454.91	1130.95	3905.76

Top 10 Information technology companies for the study is taken based on Total assets, Total sales, Market capitalisation, and total Shareholder funds. The details of the companies are given in the Table 1.

IV. RESULTS & DISCUSSION

Table 2.1: Du-Pont analysis of TCS

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-46.73	23.76	1.29	30.60	1.34	40.97
2009	-50.49	21.40	1.18	25.33	1.38	34.93
2010	31.01	24.19	1.04	25.05	1.48	37.17
2011	34.06	25.43	1.14	29.07	1.33	38.66
2012	-1.29	26.42	1.21	32.04	1.38	44.16
2013	25.83	25.42	1.18	29.94	1.32	39.54
2014	26.13	27.25	1.18	32.07	1.31	41.94
2015	16.48	24.67	1.24	30.53	1.39	42.40
2016	-1.34	25.54	1.15	29.46	1.32	38.87
2017	-3.64	24.32	1.08	26.36	1.15	30.32
Mean	3.00	24.84	1.17	29.04	1.34	38.90
S Dev	28.99	1.52	0.07	2.46	0.08	3.82
Co eff Var	965.61	6.13	5.87	8.49	5.97	9.83

The present study analyses the financial performance of Information Technology giants.

The parameters of the Du-Pont model for TCS presented in Table 2.1. From the table it is evident that, Net profit Margin is consistent i.e. Net profit margin has not deviated much from its mean. Asset turnover is also consistent except for the years 2010 and 2017. It has an average financial leverage of 1.34 indicating a judicious use of debt & equity. ROE of TCS is greater than 35%for almost 8 years except 2009 and 2017. The mean ROE for TCS is 38.90%.

Table 2.2: Du-Pont analysis of INFOSYS

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-20.05	20.22	0.88	17.86	1.75	31.19
2009	-75.72	14.14	0.84	11.94	1.99	23.76
2010	65.22	20.59	0.78	16.15	1.71	27.69
2011	-47.22	17.95	0.79	14.20	1.60	22.72
2012	-9.11	14.24	0.85	12.14	1.58	19.24
2013	-0.67	16.35	0.85	13.86	1.68	23.32
2014	19.52	18.30	0.88	16.15	1.56	25.16
2015	13.62	18.74	0.82	15.34	1.54	23.66
2016	-11.45	17.07	0.80	13.69	1.45	19.80
2017	-9.41	16.79	0.77	12.92	1.35	17.47
Mean	-7.53	17.44	0.83	14.42	1.62	23.40
S Dev	35.95	2.08	0.04	1.82	0.17	3.85
Co eff Var	-477.58	11.92	4.64	12.62	10.30	16.45

The parameters of the Du-Pont model for Infosys presented in Table 2.2. Net profit Margin is consistent with less deviation. Asset turnover is also consistent. Return on Asset is good and has not fluctuated much, but decrease in financial leverage from2013 onwards impacted the REO of the firm. It shows that Infosys has not taken the advantage of debt to improve its ROE.

Table 2.3: Du-Pont analysis of WIPRO

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-7.60	17.32	0.78	13.48	1.80	24.30
2009	-148.16	20.92	0.72	15.12	1.89	28.59
2010	71.53	20.34	0.61	12.44	1.72	21.41
2011	25.01	17.21	0.77	13.22	1.55	20.45
2012	1.10	21.18	0.85	17.93	1.65	29.54
2013	39.21	28.73	0.81	23.21	1.56	36.20
2014	42.83	34.88	0.79	27.43	1.39	38.01
2015	-41.85	34.58	0.74	25.47	1.28	32.70
2016	-20.43	32.87	0.54	17.80	1.24	22.01
2017	6.93	33.90	0.63	21.23	1.25	26.46
Mean	**-3.14**	**26.19**	**0.72**	**18.73**	**1.53**	**27.97**
S Dev	**57.66**	**7.09**	**0.09**	**5.10**	**0.22**	**5.87**
Co eff Var	**-1834.43**	**27.07**	**12.87**	**27.20**	**14.66**	**20.99**

The parameters of the Du-Pont model for Wipro presented in Table 2.3. The data shows that its Net Profit Margin and Asset turnover are somewhat consistent and close to the mean. It has taken advantage of debts but the high debt equity ratio has not reflected in ROE, this is due to the low Asset turnover ratio.

Table 2.4: Du-Pont analysis of HCL

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-33.55	27.37	0.95	25.96	1.28	33.14
2009	-8.76	28.02	0.98	27.51	1.19	32.67
2010	49.39	26.25	0.85	22.26	1.18	26.33
2011	19.29	24.28	0.92	22.33	1.18	26.30
2012	-13.08	25.60	0.92	23.65	1.20	28.46
2013	0.80	23.39	1.08	25.28	0.84	21.19
2014	11.99	21.73	1.11	24.22	0.80	19.34
2015	-47.98	24.02	1.05	25.31	0.78	19.68
2016	-82.09	27.70	1.00	27.62	0.79	21.69
2017	-19.18	22.16	0.92	20.32	0.85	17.30
Mean	**-12.32**	**25.05**	**0.98**	**24.44**	**1.01**	**24.61**
S Dev	**34.96**	**2.16**	**0.08**	**2.24**	**0.20**	**5.33**
Co eff Var	**-283.82**	**8.63**	**8.13**	**9.16**	**19.89**	**21.66**

The parameters of the Du-Pont model for HCL presented in Table 2.4. shows that the Net Profit Margin is bit inconsistent but it is in increasing trend. It has satisfactory Return on Asset. This can be attributed to the decrease in Financial leverage, resulting in reduction of interest burden thereby increasing profitability. However, asset turnover shows decreasing trend. HCL's mean Asset turnover is 0.72 and indicates that is less efficient in deploying its assets.

Table 2.5: Du-Pont analysis of TECH MAHINDRA

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	49.75	11.82	1.84	21.70	2.09	45.41
2009	-351.64	13.41	1.61	21.59	1.81	39.17
2010	58.80	13.57	1.50	20.31	2.29	46.49
2011	1.21	13.41	1.44	19.35	1.51	29.31
2012	-26.13	11.82	1.73	20.48	1.93	39.49
2013	4.17	15.49	1.65	25.57	1.78	45.41
2014	-7.47	19.45	1.85	36.04	1.71	61.51
2015	26.06	16.30	1.63	26.61	1.51	40.17
2016	-41.37	16.84	1.72	28.97	1.74	50.34
2017	22.74	15.16	1.48	22.50	1.40	31.49
Mean	**-26.39**	**14.73**	**1.65**	**24.31**	**1.78**	**42.88**
S Dev	**112.38**	**2.40**	**0.14**	**5.15**	**0.27**	**9.28**
Co eff Var	**-425.86**	**16.28**	**8.67**	**21.19**	**15.42**	**21.64**

The parameters of the Du-Pont model for Tech Mahindra presented in Table 2.5. shows that increase in asset turn over year on. In 2009 Tech Mahindra shows very high ROE of 52.45% with good ROA and Asset turn over, the very next year it was acquired by Tech Mahindra. In the year of acquisition its Financial leverage has crossed 2, after which it has reduced its Financial leverage which resulted in reduction of ROE. The Asset turnover during those years was increasing but it is not reflected in ROE.

(Note: Increase of ROE in 2009 is a result of acquisition of Satyam after its scandal)

Table 2.6: Du-Pont analysis of L&T INFOTECH

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-90.15	9.27	1.67	15.44	1.80	27.86
2009	-166.03	22.97	1.56	35.85	1.46	52.45
2010	68.93	16.32	0.78	12.73	2.04	25.91
2011	-26.17	13.68	0.84	11.46	1.80	20.59
2012	6.19	8.67	0.84	7.26	1.84	13.38
2013	31.97	11.05	1.41	15.60	0.58	8.99
2014	40.99	16.41	1.91	31.27	0.58	18.22
2015	-185.11	11.70	1.71	20.04	0.66	13.26
2016	-32.58	14.58	1.63	23.76	0.66	15.59
2017	-3.44	12.67	1.42	18.04	0.71	12.84
Mean	**-35.54**	**13.73**	**1.38**	**19.15**	**1.21**	**20.91**
S Dev	**81.60**	**3.97**	**0.39**	**8.47**	**0.59**	**11.94**
Co eff Var	**-229.59**	**28.94**	**28.29**	**44.24**	**48.73**	**57.12**

The parameter of the Du-Pont model for L&T Infotech presented in Table 2.6. shows that its excess utilisation of financial leverage resulted in higher ROE and lower Net profit margin due to interest burden. L&T Infotech shows higher variability in ROE i.e. 61.51% in 2014 and 29.31% in 2011, Inadequate assets for operation also be reason for this trend.

Table 2.7: Du-Pont analysis of ORACLE

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-118.38	22.19	0.56	12.51	1.17	14.60
2009	0.15	31.44	0.52	16.49	1.20	19.82
2010	59.03	29.45	0.47	13.79	1.15	15.82
2011	-15.77	41.00	0.41	16.62	1.13	18.79
2012	24.18	41.79	0.37	15.31	1.14	17.43
2013	-2.34	35.03	0.35	12.36	1.14	14.11
2014	17.07	36.34	0.32	11.75	1.16	13.58
2015	5.30	31.66	0.58	18.23	1.94	35.37
2016	7.63	26.63	0.69	18.40	1.69	31.07
2017	7.50	33.21	0.76	25.24	1.91	48.13
Mean	**-1.56**	**32.87**	**0.50**	**16.07**	**1.36**	**22.87**
S Dev	**43.30**	**6.06**	**0.15**	**4.02**	**0.34**	**11.54**
Co eff Var	**-2770.15**	**18.44**	**29.26**	**25.02**	**24.99**	**50.45**

The parameters of the Du-Pont model for Oracle presented in Table 2.7. Net profit Margin of oracle shows high variability with lowest of 22.19% in 2008 and highest of 41.79% in 2012. Oracle's mean asset turnover is 0.50 shows its inefficiency in utilising its assets. The return on asset is also low. Oracle's ROE in 2017 is highest among all other IT companies, this is due to an increase in its Financial leverage and Asset turnover.

Table 2.8: Du-Pont analysis of MINDTREE

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-142.21	14.19	0.97	13.71	1.42	19.51
2009	-58.78	2.96	1.08	3.20	1.77	5.65
2010	64.56	16.87	1.31	22.08	1.46	32.21
2011	-48.45	8.15	1.49	12.12	1.31	15.85
2012	18.02	11.41	1.43	16.37	1.39	22.83
2013	46.50	14.34	1.40	20.04	1.29	25.79
2014	30.78	14.88	1.44	21.48	1.28	27.49
2015	-1.34	15.06	1.34	20.19	1.32	26.57
2016	-99.56	13.88	1.33	18.46	1.36	25.03
2017	-44.22	10.29	1.37	14.05	1.26	17.73
Mean	**-23.47**	**12.20**	**1.32**	**16.17**	**1.39**	**21.87**
S Dev	**63.24**	**4.14**	**0.17**	**5.72**	**0.15**	**7.52**
Co eff Var	**-269.44**	**33.96**	**12.60**	**35.39**	**10.74**	**34.39**

The parameters of the Du-Pont model for Mindtree presented in Table 2.8. shows that its Asset turnover is satisfactory but Net Profit Margin low compared to Asset turnover this is due to operational inefficiency, Mindtree is good in deploying its assets to generate revenue. It has good ROE because of its optimum usage of debts.

Table 2.9: Du-Pont analysis of MPHASIS

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-35.96	18.22	0.78	14.14	1.60	22.62
2009	0.74	24.57	1.05	25.88	1.60	41.33
2010	67.24	26.44	1.00	26.47	1.29	34.27
2011	-49.42	22.97	0.74	17.07	1.34	22.94
2012	-2.51	17.86	0.67	11.99	1.40	16.82
2013	-3.45	16.24	0.67	10.89	1.33	14.51
2014	3.07	16.78	0.28	4.75	1.22	5.78
2015	-4.83	18.27	0.58	10.68	1.28	13.65
2016	21.63	15.66	0.55	8.56	1.16	10.12
2017	15.19	20.70	0.56	11.62	1.13	13.31
Mean	1.17	19.77	0.69	14.21	1.34	19.50
S Dev	29.99	3.73	0.22	7.08	0.16	11.07
Co eff Var	2563.12	18.87	32.58	49.85	12.05	56.75

The parameters of the Du-Pont model for Mphasis are presented in Table 2.9. The company has performed well in the past but has failed to keep up the growth. Mphasis ROE has slide from 41.33% in 2009 to just 5.78% in 2014 but the past 3 years of data shows that it has been recovering from recession. Mphasis has the advantage of Financial leverage but it doesn't yield any result due to the decrease in asset turnover.

Table 2.10: Du-Pont analysis of ROLTA

Year	Return on Stock (%)	NPM (%)	AT (Times)	ROA (%)	EM (Times)	ROE (%)
2008	-24.20	30.90	0.38	11.71	1.72	20.16
2009	-354.13	39.32	0.33	13.05	1.75	22.88
2010	67.84	30.80	0.35	10.66	1.78	18.93
2011	-28.37	34.19	0.36	12.44	1.73	21.50
2012	-48.46	22.29	0.29	6.54	2.03	13.27
2013	-42.38	-56.25	0.23	-13.20	3.75	-49.56
2014	10.03	40.19	0.18	7.19	3.22	23.16
2015	54.85	38.28	0.27	10.34	2.56	26.46
2016	-113.90	6.13	0.24	1.50	2.61	3.92
2017	-30.75	7.25	0.17	1.24	2.18	2.70
Mean	-50.95	19.31	0.28	6.15	2.33	10.34
S Dev	112.52	29.29	0.07	8.01	0.70	22.54
Coeff Var	-220.87	151.69	26.37	130.30	30.11	217.94

The parameter of the Du-Pont model for Rolta are presented in Table 2.10. shows inconsistent Net profit margin and ROE which are highly deviated from its mean. The Asset turnover is very low compared to other IT firms this shows its inefficiency in asset utilisation. Financial leverage has played a major role in hindering Rolta's growth, which is visible in ROE.

V. FINDINGS

Table 3.1: Comparing ROE of 2017 with 2009

COMPANY	ROE	
	2009	**2017**
TCS	34.93	30.32
INFOSYS	32.67	17.30
WIPRO	23.76	23.40
HCL	28.59	26.46
TECH MAHINDRA	52.45	12.84
L&T INFOTECH	39.17	31.49
ORACLE	19.82	48.13
MINDTREE	5.65	17.73
MPHASIS	41.33	13.31
ROLTA	22.88	2.70

As we can observe from the above Table 3.1, performance of Information Technology firms in 2017 except Oracle and Mindtree has been far worse than the past. This is majorly due to the global economic slowdown which has reduced the demand and as a result of United States election.

Table 3.2, Ranking of IT firms based on their mean values

Company	Mean NPM	Mean AT	Mean EM	Mean ROE
L&T INFOTECH	14.73	1.65	1.78	42.88
TCS	24.84	1.17	1.52	38.90
HCL	26.19	0.72	1.53	27.97
INFOSYS	25.05	0.98	1.01	24.61
WIPRO	17.44	0.83	1.62	23.40
ORACLE	32.78	0.5	1.36	22.50
MINDTREE	12.2	1.32	1.39	21.87
TECH MAHINDRA	13.73	1.38	1.21	20.91
MPHASIS	19.77	0.69	1.34	19.50
ROLTA	19.31	0.28	2.33	10.34

As we can observe from the above Table 3.2. Mean ranking of IT firms shows influence of Equity Multiplier and Net Profit Margin on ROE. As we can see that optimum usage debts have shown positive results in both ROE and Net Profit Margin, excess usage caused increase in ROE and reduction in Profitability and vice versa.
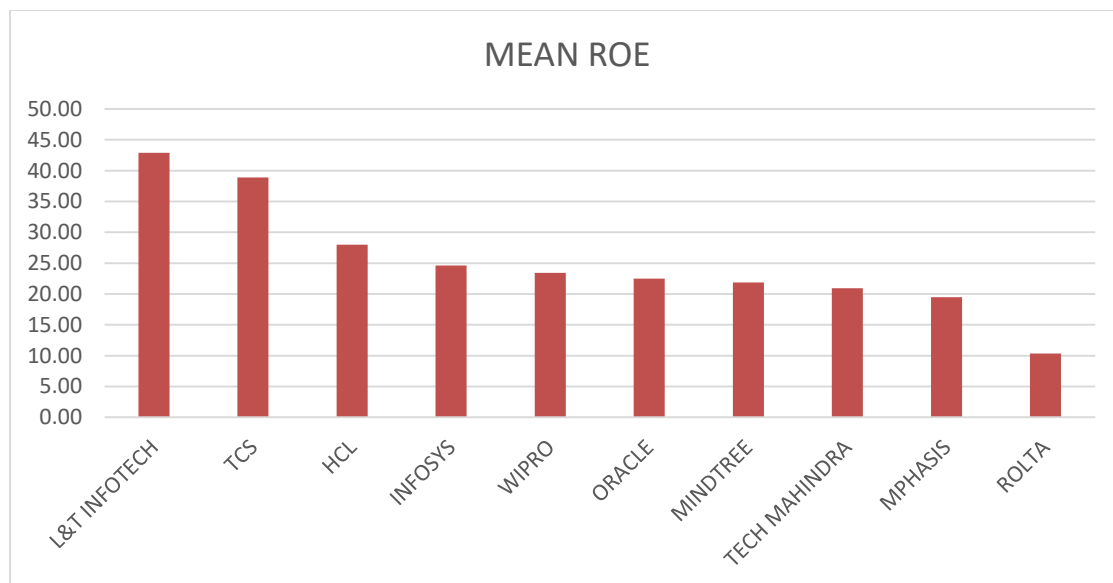

Figure 1: Mean Return on Equity of top 10 IT companies

As we can see from the above chart, among the top10 companies, TCS and L&T Infotech have acquired the top 2 positions in terms of Return on Equity. This is followed by HCL, Infosys, Wipro, Oracle, Mindtree, Mphasis, and Rolta. This shows TCS and L&T Infotech have performed very well and have been consistent in generating Return on Equity.

Table 3.3: Correlation between ROE, Return on stock, and Du-Pont indicators.

Correlations					
		ROE	Asset turnover	Equity multiplier	Profitability
ROE	Pearson Correlation	1	.534	.790	.814
Asset turnover	Pearson Correlation	.534	1	-.466	.562
Equity multiplier	Pearson Correlation	.790	-.466	1	-.368
Profitability	Pearson Correlation	.814	.562	-.368	1
Return on stock	Pearson Correlation	.071	-.051	.117	-.056

As expected ROE is positively correlated to Asset turnover, Equity multiplier, and Profitability. The other correlations as follows:

Asset Turnover is positively correlated to ROE and Profitability and negatively correlated to Equity multiplier.

Equity multiplier is positively correlated to ROE, Profitability and negatively correlated to Asset turnover.

Profitability is positively correlated to ROE and Asset Turnover and negatively correlated to Equity Multiplier.

Return on stock is negatively correlated with Asset Turnover and Profitability. It is not correlated with ROE and Equity Multiplier.

➢ There is direct relationship between Financial leverage and Return on Equity, we can observe that increase in Financial leverage result in higher ROE.

➢ There is inverse relationship between Net Profit Margin and Financial Leverage, It can be observed that increase in Financial leverage results in decrease of Net Profit Margin, because high financial leverage result high interest expense. That may impair the profitability.

➢ Du-Pont indicators has no impact on Return on Stock or stock price of a company.

➢ All Du-Pont indicators have significant influence on Return on Equity.

VI. CONCLUSION

This study was undertaken to determine the Profitability of the top 10Indian companies operating in IT sector. The Du-Pont model of analysis was used to examine the performance. The three parameters NPM, ATO and Equity Multiplier were calculated and ROE of the firms was arrived at. The analysis indicates that of 10 firms, L&T Infotech had the best ROE 42.88% followed by TCS 38.90%

A company's profitability is a very important indicator for investors to place their capital. Profits earned by the companies show an overview of the company without taking account of other factors like dividends, debt, liabilities, assets, etc. ROE is a comprehensive measure of the performance of a firm.

A Comparison of the parameters of the ROE indicated that it was positively correlated to all 3 parameters. However, the study found a negative correlation between Equity Multiplier, Asset Turnover and profitability. The study also found that when a firm uses very high levels of debt it creates a negative impact on the ROE. the stress created due to the high interest costs result the reduced ROE. The firm should therefore aim to increase its ROA so that it exceeds the cost of debt and thereby create an impact on the ROE

The study also explored the possibility of using ROE as a leading indicator to predict the returns on stock investment. However, no support for this was found in this study. The study can further extend to analyse the impact of taxes and interest on the ROE. A comparison between top 10 companies and 10 underperforming companies may yield useful result.

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