

# A Study Of Indian Software And Networking Companies Using Extended Dupont Model

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### ABSTRACT

*Information Technology Companies are essential for development of any country's economy. Analysts can obtain useful information by analyzing company's recent financial statements and comparing the results with other companies in the same sector. In this paper we considered selected software and Networking companies in India to test whether extended DuPont model can be used to measure the performance of software and Networking companies in Indian context. We have calculated return on equity by extended DuPont model. Result shows that DuPont model can be used to measure the performance of software and networking companies and there is a positive relationship between profit margin, asset turnover and ROE. This paper suggests that further study can be conducted by using extended DuPont model in other industries to see if it can explain the total variation in ROE as it has in the Indian Information Technology companies.*

*Keywords: DuPont Analysis, ROE, Margin Ratios, Turn over Ratios, Leverage Ratios*

### 1. INTRODUCTION

The Information Technology (IT) sector has been playing a vital role in strengthening the Indian economy. In order to compare and set benchmark, a financial statement analysis should be made of all companies. A financial statement is a collection of data organized according to logical and consistent accounting procedures. Generally the users of financial statements calculate return on equity to measure efficiency of the Management

in utilizing the funds and creating profit an increasing return on equity can suggest that the company is able to grow profits without adding new equity into the business, which dilutes the ownership share of existing shareholders. The higher a company's return on equity, the better management is at employing investors' capital to generate profits. The three-step DuPont Model helps us to check what is driving a company's return on equity. The Three step DuPont model became a standard in all financial management textbooks and a powerful tool to illustrate the interconnectedness of a firm's income statement and its balance sheet to develop straight-forward strategies for improving the firm's ROE. However, Hawawini and Viallet (1999) offered yet another modification to the Du Pont model. This modification resulted in five different ratios that combine to form ROE. Moyer et al, (2007), Ross et al, (2008) describe how a company boosts its ROE by improving its profitability; using its assets more efficiently and taking on additional leverage. Further, we did not find studies that have used DuPont model for IT companies in Indian context. However, companies that boost ROE by adding leverage will eventually reach a point where the cost of debt will diminish profit margins and decrease asset turnover. This observation is not captured by the three steps DuPont. Hence the five step DuPont model explains profitability as accruing from operating activities, efficiency, debts to assets (leverage), cost of funding (interest burden) and tax effect. We study the performance of Indian Software and Networking companies by using extended DuPont Model. The paper is structured as follows: it presents a brief review of

the literature dealing with the accounting and financial performance of the IT sector, followed by a description of the objectives, data and methodology. Subsequently, it discusses the results, and finally, offers the conclusion. The use of financial ratios by financial analysts, lenders, academic researchers, and small business owners has been widely acknowledged in the literature. Osteryoung (1992), Devine & Seaton (1995), Burson (1998) analyze that the concepts of Return on Assets and Return on Equity are important for understanding the profitability of a business enterprise. Specifically, a “return on” ratio illustrates the relationship between profits and the investment needed to generate those profits. Sahu (2002) revealed the effective management of liquidity in the paper companies. Manoharan (2002) identified that quality of earning depends on management and leverage management. Holloway (2008) concluded that the financial objectives of a for-profit business primarily concern the needs of the external suppliers of debt and equity capital. Tiwari and Parray (2012) explained in detail the analysis of financial statements of Ranbaxy Ltd. They provided insights into two widely used financial tools, ratio analysis and common size statements analysis. The objective of the paper is to help the reader to understand how these tools should be used to analyze the financial position of a firm.

## 2. OBJECTIVES AND METHODOLOGY

**2.1** We have set following objectives based on the evidence Nissim and Penman (2001), Fairfield and Yohn (2001), Ross et al., (1996).

- To test whether Indian Software and Networking companies are able to generate positive return on equity for its shareholders.
- To test the relationship between return on equity with profit margin and asset turnover.

**2.2 Hypotheses:** Based on the available evidence on Nanavathi (2013) and Tiwari and Parray (2012) the following null hypotheses are formulated

- $H_0$ : Indian Software and Networking Companies are not able to generate positive return on equity for its shareholders.
- $H_0$ : Return on equity is not explained by the factors like net profit margin and asset turnover.

Negations of above hypothesis are alternate hypothesis. We propose to test the above hypotheses in the Indian context by taking the data and sample described below.

### 2.3 DATA SAMPLE & METHODOLOGY

This study proposes to ascertain the performance of Information Technology companies in India by using DuPont model. Lermack (2003) analyzed benefits of financial ratios analysis. Santany *et al.* (2003) observed that degree of current asset in positive associated with the operating profitability of the firm. Lasher (2005) found that requires financial data of the companies. This data would be collected using the different corporate databases Powell and Stark (2005) shows that significant improvements in operating performance. This study was based on the forty six Information Technology companies in India. For the study purpose we have taken Ten years financial statement from 2007 to 2016. In this study we have applied Extended DuPont Analysis for the Calculation of ROE.

Extended DuPont Analysis Model

$$ROE = (Tax Burden) \times (Interest Burden) \times (Operating Margin) \times (Asset Turnover) \times (Equity Multiplier)$$

(1)

Calculation has been done using Microsoft office Excel to calculate Return on equity using Extended DuPont model. The collected data has been further processed both manually and also with the help of computer software. Statistical analysis has been made using statistical package for social science (SPSS). We bring out the analysis to test the objectives and hypothesis. We have obtained return on equity by applying Extended DuPont model of the selected companies as shown in Table 1

### 3. RESULTS AND ANALYSIS

The study analyses the Extended DuPont model to know whether Indian Software and Networking Companies have created value for shareholders or not. Therefore, we have analysed ten years data of selected companies for the study period. Main findings of the study are discussed in the following paragraphs.

**Table 1** shows that return on equity (ROE) of the Software and Networking companies. ROE of Infosys is ranges from 0.24 to 0.36; AGC Networks ranges from -1.55 to 0.22; Zensar Tech ranges from 0.22 to 0.29; Empower India ranges from -0.15 to 0.08; Wipro ranges from 0.19 to 0.3; Sterling Intl ranges from 0.01 to 0.14; VamaInds ranges from 0.02 to 0.05; Innovation soft ranges from -2.61 to 0.23; Onward Technology ranges from -0.59 to 0.31; Mphasis ranges from 0.06 to 0.41; ASM Technologies ranges from 0.17 to 0.41; Info-Drive software ranges from 0.0 to 0.11; Aurum Soft ranges from -3.44 to 0.22; Sparc systems ranges from -0.19 to 0.02; Goldstone Tech ranges from -0.07 to 0.23; Starcom Info ranges from -3.31 to 0.43; Cat Tech ranges from -0.04 to 0.35; Cyient ranges from 0.09 to 0.24; Sonata Software ranges from 0.05 to 0.33; Accelya Kale ranges from 0.1 to 1.09; HCL Technologies ranges from 0.2 to 0.38; Geometric ranges from 0.06 to 0.23; IZMO ranges from -0.01 to 0.09; Commex Tech ranges from -0.28 to 0.08; Dynacons Sys ranges from 0.01 to 0.07; Ramco systems ranges from -0.22 to 0.14; KPIT Tech ranges from 0.12 to 0.37; Oracle Fin.serv ranges from 0.14 to 0.35; TCS ranges from 0.35 to 0.47; NIIT Tech ranges from 0.14 to 0.37; 3i infotech ranges from -2.51 to 4.21; Sasken Comm.Tec ranges from 0.06 to 0.42; FCS Software ranges from -0.09 to 0.24; R S Software ranges from 0.04 to 0.44; Tech Mahindra ranges from 0.07 to 0.52; Mindtree ranges from 0.06 to 0.32; Quintegra Soln ranges from -0.32 to 2.17; Allied Digital ranges from -11.3 to 104.23; Take solutions ranges from 0.04 to 0.17; GSS Info ranges from -0.82 ranges from 0.25; SQS India BFSI ranges from 0.03 to 0.38; Infinite Comp ranges from 0.11 to 0.29; Persistent Sys ranges from 0.15 to 0.25; Bharatiya Global Infomedia ranges from 0.0 to 0.15; Gemini Comm ranges from -8.03 to 0.36; Smart Link Network ranges from -0.01 to 0.86. We found that

increase in the return on sales and return on asset will have positive impact on return on equity. Further we have found that there is no consistent growth in profit. Hence, we reject null hypothesis and accept alternate hypothesis that Indian IT Companies are able to generate positive return on equity for its shareholders.

Table 2 shows the regression analysis of IT software and networking companies from 2007-2016. We have conducted Regression analysis for the selected Software and Networking Companies. We have taken ROE as dependent variable and independent variable as equity multiplier, asset turnover and net profit Margin. Regression model predicts the dependent variable significantly well. "Sig." value indicates the statistical significance of the regression model. If *p value* less than 0.05 indicates that the regression model is significantly good fit for the data and predicts the outcome dependent variable ROE. From the regression analysis we obtained *p value* i.e. 0.0 as shown in table 2 which is less than 0.05. Based on the above results we reject null hypothesis and accept alternate hypothesis that Indian IT companies are explained by the factors like net profit margin and asset turnover.

### 4. SUMMARY AND CONCLUSION

This paper has attempted to test Indian Software and Networking companies able to generate positive return on equity for its shareholders by using the extended DuPont model and further to test extended DuPont model can be used to measure the performance of Software and Networking Companies. The overall conclusions of this study are summarized as follows:

- The analysis of return on equity shows that there is that there is no consistent growth in profit, we reject null hypothesis and accept alternate hypothesis that software and networking companies are able to generate positive return on equity for its shareholders.
- We found that increase in the net profit margin and asset turnover will have positive impact on return on equity. We reject null hypothesis and accept alternate hypothesis that software and networking companies are explained by the factors like

profit margin and asset turnover.

The results of the present study are consistent with the studies undertaken by Mihaela (2010). Empirical analysis of this paper is helpful for academicians, researcher and investors for evaluating Information Technology performance. For future research direction, researchers can employ the five step DuPont model in other industries to see if it can explain the total variation in ROE as it has in the Indian Information Technology companies.

### 5. REFERENCES

1. Burson, Robert (1998), Tools you can use for improved ratio analysis, San Diego Business Journal, Vol. 19, Issue 49, pp. 19-23.
2. Devine, Kevin and Seaton, Lloyd (1995). An examination of quarterly financial ratio stability: implications for financial decision making, Journal of Applied Business Research, Winter, Vol.1. Issue 1, pp. 81-98.
3. Fairfield, P. and Yohn. T. (2001). Using asset turnover and profit margin to forecast changes in profitability. Review of Accounting Studies, pp.371–385.
4. Hawawini, G. and Viallet, T. (1999). Finance for Executives, South-Western College Publishing, Vol 1, issue 1, pp 133-140.
5. Lasher W R (2005), Practical Financial Management, 4th Edition, p. 784, South-Western College Pub., USA.
6. Lermack H (2003), Steps to a Basic Company Financial Analysis, Philadelphia University, Philadelphia, USA.
7. Mihaela (2010), A DuPont Analysis of 20 most profitable companies in the world, International conference on Business and economic research, pp. 45-48.
8. Moyer, C., McGuigan, J. and Rao, R. (2007). Fundamentals of Contemporary Financial Management. Thomson South-Western, USA, 2007.
9. Nihar Kiran Nanavathi (2013). Dupont Analysis to Measure Return on Equity of Satyam Computer Services Limited (Now Known As Mahindra Satyam Limited), Indian Journal of Research, Vol.1, Issue 1, pp. 38-40.
10. Nissim, D., & Penman, S. (2001). Ratio analysis and valuation: From research to practice. Review of accounting studies, Vol.1, Issue 1, pp. 109-154.
11. Osteryoung, Jerome and Constand, Richard (1992). Financial ratios in large public and small private firms, Journal of Small Business Management, Vol.1, Issue 1, pp. 35-47.
12. Padmaja Manoharan (2002) .An Analytical study on profitability of cement industry in India, Bharathiar University.
13. Powell R G and Stark A W (2005), Do Takeovers Create ‘Real ‘Gains? Some UK Evidence, Working Paper, University of New South Wales, Sydney, Australia.
14. R. Thorpe, J. Holloway (2008), Performance management –multidisciplinary perspectives, Plagrove MacMillan, NewYork, 2008, Vol.1, Issue 1, pp. 163.
15. Ross, S., Westerfield, R., Jaffe, J. and Jordan, B. (2008). Modern Financial Management, eighth edition. McGraw Hill, New York, pp. 53-58.
16. Santany Kumar Ghosh and ShanthiGopalMaji (2003), “Utilization of Curren Asset and Operating Profitability and An Empirical Study on Cement and Tea Industries in India”, Indian journal of accounting, Vol. 34, Issue 5, pp 52-58.
17. Sahu, RK (Nov 2002) A simplified model for liquidity analysis of paper companies. The management accountant, Vol.1, Issue 1, pp 805 – 808.
18. Tiwari A and Parray F S (2012), Analysis of Short-Term Financial Position – A Case Study of Ranbaxy Ltd., *ArthPrabhand: A Journal of Economics and Management*, Vol. 1, No. 6, pp. 36-50.

**Table 1: Return on equity of Indian Software and Networking Companies using Extended DuPont Model**

ROE	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Infosys	0.34	0.33	0.33	0.26	0.26	0.28	0.25	0.24	0.25	0.28
AGC Networks	0.22	0.08	0.07	0.13	0.05	0.06	-0.1	-1.55	0	-0.51
Zensar Tech	0.2	0.22	0.24	0.29	0.24	0.23	0.24	0.29	0.24	0.25
Empower India	0.08	0.05	0.00	0.00	0.00	0.00	-0.02	-0.15	0.00	0.00
Wipro	0.3	0.26	0.24	0.28	0.23	0.19	0.23	0.25	0.24	0.2
Sterling Intl	0.14	0.14	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
VamaInds	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.02	0.05	0.02
Innovation Soft	-0.17	0.11	0.03	0.23	0.08	-0.01	-0.68	-0.14	-0.09	-2.61
Onward Technology	0.01	-0.01	-0.59	-0.24	0.19	0.31	0.11	0.14	0.04	0.03
Mphasis	0.16	0.19	0.27	0.41	0.34	0.23	0.17	0.15	0.06	0.14
ASM Technologies	0.21	0.41	0.31	0.23	0.32	0.28	0.27	0.24	0.17	0.24
Info-Drive Software	0.05	0.06	0.11	0.13	0.02	0.01	0.01	0	0.02	0
Aurum Soft	0.22	0.19	0.01	-0.03	0.03	0.01	0	-0.19	0	-3.44
Sparc Systems	0.02	0	0	-0.01	0	0	-0.11	-0.06	-0.19	-0.04
Goldstone Tech	0.23	0.18	0.02	0.01	0.02	0.03	0.03	0.02	-0.07	-0.02
Starcom Info	0	0.02	-0.02	0.03	0.04	0.05	-0.31	0.17	-3.31	0.43
Cat Tech	0.35	0.03	0.07	0	0	-0.01	-0.02	-0.03	-0.03	-0.04
Cyient	0.24	0.09	0.1	0.16	0.13	0.15	0.16	0.18	0.17	0.14
Sonata Software	0.2	0.18	0.24	0.21	0.2	0.05	0.05	0.17	0.33	0.33
Accelya Kale	0.12	0.2	0.11	0.17	0.1	0.3	0.93	1.09	0.8	0.85
HCL Technologies	0.32	0.24	0.29	0.21	0.2	0.3	0.36	0.38	0.33	0.22
Geometric	0.16	0.1	0.23	0.06	0.1	0.2	0.14	0.18	0.2	0.21
IZMO	0.09	0.03	0.01	0.01	0.01	0.01	0	0	0	-0.01
Commex Tech	-0.28	-0.12	-0.26	0.04	0.03	0.05	0.08	0.03	0	-0.02
Dynacons Sys	0.01	0.01	0.01	0.05	0.05	0.07	0.03	0.04	0.04	0.05
Ramco Systems	-0.22	0.14	-0.01	-0.01	0.03	-0.02	-0.13	-0.15	0.01	0.04



KPIT Tech	0.24	0.23	0.37	0.2	0.12	0.12	0.12	0.16	0.15	0.17
Oracle Fin.Serv	0.15	0.15	0.2	0.16	0.19	0.17	0.14	0.14	0.35	0.31
TCS	0.47	0.41	0.35	0.37	0.39	0.44	0.39	0.42	0.42	0.39
NIIT Tech	0.37	0.37	0.29	0.2	0.21	0.18	0.22	0.22	0.14	0.17
3i infotech	0.14	0.16	0.25	-0.11	0.11	-0.32	-0.25	-0.74	4.21	-2.51
SaskenComm.Tec	0.09	0.06	0.06	0.16	0.22	0.09	0.1	0.16	0.36	0.42
FCS Software	0.24	0.01	-0.01	0	-0.01	0	-0.09	0.01	0	0
R S Software	0.25	0.06	0.26	0.31	0.44	0.32	0.3	0.31	0.3	0.04
Tech Mahindra	0.07	0.27	0.52	0.26	0.21	0.13	0.16	0.31	0.2	0.24
Mindtree	0.21	0.2	0.06	0.32	0.16	0.23	0.26	0.27	0.27	0.25
QuintegraSoln	0.07	0.07	-0.32	-0.27	2.17	0.44	0.15	0.03	0.08	0.01
Allied Digital	104.23	11.84	30.83	59.29	4.31	0.4	-11.3	19.12	-0.54	-0.53
TakeSolutions	0.17	0.08	0.05	0.04	0.09	0.12	0.12	0.05	0.04	0.06
GSS Info	0.25	0.1	0.13	0.05	0.02	-0.07	-0.02	0.01	-0.82	0.03
SQS India BFSI	0.38	0.31	0.32	0.12	0.03	0.13	0.21	0.27	0.22	0.36
Infinite Comp	0.11	0.15	0.29	0.17	0.12	0.25	0.24	0.13	0.19	0.16
Persistent Sys	0.23	0.25	0.15	0.18	0.18	0.16	0.18	0.21	0.19	0.17
Bharatiya Global infomedia	0.13	0.14	0	0.1	0.15	0.01	0.01	0.01	0	0.01
Gemini Comm	0.36	0.29	0.01	0.08	0.08	0.02	-0.01	-8.03	1.3	0.11
SmartlinkNetwr	0.12	0.14	0.05	0.11	0.1	0.86	0.01	-0.01	0.03	0.01

**Table 2: Regression analysis of IT software and networking companies from 2007-2016**

Extended DuPont Model	R	R Square	F	Sig.
	.452	.196	23.314	.000