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REVIEW OF LITERATURE

NEED/IMPORTANCE OF THE STUDY

STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESIS (ES)

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

LIMITATIONS

SCOPE FOR FURTHER RESEARCH

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A STUDY ON FINANCIAL HEALTH OF SELECTED SOFTWARE COMPANIES IN INDIA

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ABSTRACT

This study investigates the financial health of the selected software companies in India. Using the Capitaline Plus database developed by the BSE and Prowess developed by the Centre for Monitoring Indian Economy from 2004-2005 to 2013-2014 for the software companies and employ the data to estimate financial strength. Altman's Z- score analysis has been applied to evaluate the general trend in financial health of the companies over a period. The financial health is analyzed with the help of five accounting ratios such as working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, Book value of equity to the book value of debt and net sales to total asset of the Tata consultancy services, Infosys, Wipro, HCL Technologies. The findings of the study revealed that the companies selected for the study is in the extremely healthy zone.

KEYWORDS
Altman's Z- score, Financial Health, Software, Variables.

INTRODUCTION

Indian software industry has been a remarkable success story. The IT industry accounts for 5% of India's GDP. The export of software has also gone up, which has been instrumental in the huge success of the Indian software companies as well as the industry. In fact, software export from India accounts for more than 65% of the total software revenue. The domestic software market largely depends upon sale of software packages and products, which constitute major part of revenues. Products account for almost 40% of the domestic market. On the other hand, more than 80% of revenue from software exports comes from software services like custom software development and consultancy services etc. There are a number of reasons why the software companies in India have been so successful. Besides the Indian software companies, a number of multinational giants have also plunged into the Indian IT market. India is the hub of cheap and skilled software professionals, which are available in abundance. It helps the software companies to develop cost-effective business solutions for their clients. As a result, Indian software companies can place their products and services in the global market in the most competitive rate[1]. The objective of the study is to understand financial strength of the Indian software industry. The software industry in India has been growing at phenomenal rates over the last fifteen years. This paper provides simple frameworks to understand the financial health of this industry. It focuses on long term solvency ratios of the software industry. As per the NASCOM Report 2015, the four top companies such as Tata Consultancy Ltd, Infosys, Wipro and HCL Technologies have been selected and Altman's Z- score has been applied to predict the financial health of the software companies in India.

FIGURE 1
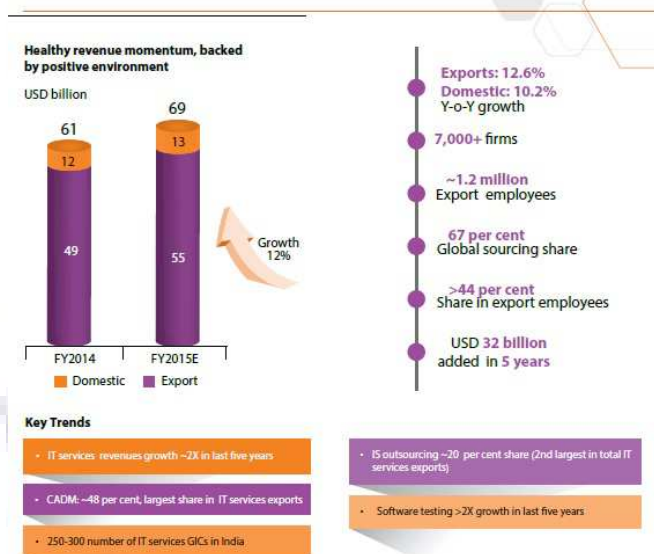
Source: NASCOM Report

REVIEW OF LITERATURE

The Altman's (1968)[2] ,model uses various ratios to consider the factors noted above and Z- score model to analyze the failure of the firms.
Chen and Shimerda, Dugan and Zevgren (1985)[3] , have selected seven financial factors that can help to predict financial distress: return on investment, financial leverage, capital turnover, short -term liquidity, cash position, inventory turnover and receivables turnover.
Gupta (2000)[4] , attempted a refinement of Beaver's method with the objective of predicting the business failure.
Mulla (2002) [5] ,made a study in Textile mill with the help of Z-score model for evaluating the financial health with five weighted financial ratios.
Selvam M, S.vanitha and M.Babu (2004)[6] , studied financial health of Indian Cement industry with help of Z score analysis.
Bagchi (2004)[7] ,examined the practical implication of accounting ratios in risk evaluation and concluded that accounting ratios are still dominant factors in the matter of credit risk evaluation.
Krishna Chaitanya (2005)[8] ,used Z-score model to measure the financial health of IDBI and concluded that IDBI is likely to become insolvent in the years to come.
Chowdhury and Barua (2009)[9] , investigated the financial attributes of Z- category companies' shares using Z-score analysis and found that ninety percent of those companies are suffering with financial problem.

VARIABLES DEFINITION

All the variables are measured in book values and not in market values because of data limitation. The financial health is analyzed with the help of five variables such as working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, book value of equity to the book value of debt and net sales to total assets.

STATEMENT OF THE PROBLEM

The present research made an attempt to measure the financial health of the Indian Software companies with the help of long term solvency ratios. Its contribution is more in the economic growth and GDP and exports of our country. More over various studies had been carried out to analyze the financial health of industries such as sugar, automobiles, cement, pharmaceutical, steel etc. So the present research concentrated with the financial strength of selected software companies.

OBJECTIVES

To analyze the financial health of the selected software companies in India using Altman's Z- score Model.

SCOPE OF THE STUDY

The study focuses on measuring and predicting the financial health of the selected software companies in India.

RESEARCH METHODOLOGY

The financial data required for the study are drawn from the secondary source. The capitaline database and prowess database have been used as principal sources. The other relevant data are collected from journals, magazines and websites.

SAMPLING DESIGN

Companies listed in BSE and for which the data was available for all the ten years had been selected for the study.

PERIOD OF THE STUDY

The study period is for ten financial years from 2004-2005 to 2013-2014.

LIMITATIONS OF THE STUDY

This study is confined to four software companies in India .As the study focuses on the financial health of selected software companies in India. The result cannot be generalized for the other companies in other industries and the result is only for ten years from 2004-2005 to 2013-2014.

ASSESSMENT OF FINANCIAL HEALTH OF SELECTED INDIAN SOFTWARE COMPANIES USING ALTMAN'S Z-SCORE ANALYSIS

An attempt has been made to have an insight into financial stability and operational health of selected Indian software companies. Altman's Z-score Analysis has been applied to evaluate the general trend in financial health of an enterprise over a period .Some of the accounting ratios used frequently to predict the financial performance of an enterprise may only provide warnings .When it is too late to take a corrective action. Further single ratio does not convey much of the sense. There are no internationally accepted standards for financial ratios against which the results can be compared. The objectives of the study is to predict the financial health and capability of selected software companies in India to improve its operational efficiency and effectiveness .The data collected are first analyzed with the help of five accounting ratios. These ratios were combined into a single measure Z- score analysis with the help of Multiple Discriminate Analysis. The formula used to evaluate the Z- score analysis as established by Altman is

$$Z=1.2X_1+1.4X_2+3.3X_3+0.6X_4+1.0X_5 \quad \text{......................} \quad (1)$$

Where Z is the overall index

X_1-Ratio of Working Capital to Total Assets (WC to TA)

X_2-Ratio of Retained Earnings to Total Assets (RE to TA)

X_3-Ratios of Earnings before Interest and Tax to Total Assets (EBIT/TA)

X_4-Ratio of Book Value of Equity to Book Value of Debt (BVE/BVD)

X_5-Ratio of Net Sales to Total Assets (NS/TA)

The following accounting ratios are used as variable to combine them into a single measure (index) which is efficient in predicting bankruptcy.

X_1-The Ratio of working capital to total assets. It is the measure of net liquid asset of the firm to total capitalization

X_2- The ratio of Retained earnings to total assets. It indicates cumulative profitability overtime and leverages.

X_3- The ratios of earnings before interest and tax to total assets. It is the measure of productivity of assets employed in an enterprise ultimate existence of an enterprise is based on the earning power.

X_4-The ratio of book value of equity to book value of debt. It is reciprocal of the familiar debt-equity ratio. This measure shows how much assets of an enterprise can decline in value before the liabilities exceed the assets and the concern becomes insolvent.

X_5- The ratio of net sales to total assets. It measures the capital turnover ratios which is the standard financial measure for illustrating the sales generating capacity of the assets

MEASUREMENT OF FINANCIAL HEALTH

According to Altman the following three situations are considered for studying financial health of selected software companies in India,

I .The Z- score below 1.8 unit is considered to be bankruptcy zone.Faliure is certain and extremely likely and would occur probably in two years.

II. If a units Z- score is 1.8 or above but less than 3.0, its financial viability is considered to be healthy. The failure in this situation is uncertain to predict.

III. The Z-scores 3.0 and above indicates extremely healthy zone. Its financial health is very viable and not to fall.

TABLE 1: Z-SCORE VALUES

CATEGORY	ZSCORE	ZONE	SITUATION
I	Below 1.8	Bankruptcy	Certain to fall
II	1.8 to 2.99	Healthy Zone	Uncertain to Predict
III	3.0 and above	Extremely Healthy zone	Not to Fall

Source: Inferred from the above

ANALYSIS AND INTERPRETATION

TABLE 2: Z-SCORES ANALYSIS OF TATA CONSULTANCY SERVICES

YEAR	X_1	X_2	X_3	X_4	X_5	Z
2004-2005	0.39	1.33	2.01	1.65	2.33	7.71
2005-2006	0.48	1.37	1.78	0.94	1.91	6.48
2006-2007	0.39	1.37	1.68	0.95	1.84	6.23
2007-2008	0.41	1.37	1.48	3.61	1.65	8.52
2008-2009	0.38	1.37	1.25	1.96	1.66	6.62
2009-2010	0.27	1.35	1.38	2.52	1.52	7.04
2010-2011	0.24	1.36	1.41	2.85	1.47	7.33
2011-2012	0.24	1.36	1.71	1.42	1.51	6.24
2012-2013	0.48	1.36	1.56	1.13	1.45	5.98
2013-2014	0.57	1.36	1.72	2.28	1.43	7.36

Source: Computed

It is evident from analysis that the Z-score for Tata Consultancy Services witnessed more than three during the entire study period .The above table reveals that the company is in the extremely healthy zone. Although Z-scores shows fluctuating trend during the study period, it is always in the extremely healthy zone.

TABLE 3: Z -SCORES ANALYSIS OF INFOSYS

YEAR	X_1	X_2	X_3	X_4	X_5	Z
2004-2005	0.52	1.35	1.38	0.68	1.34	5.27
2005-2006	0.64	1.35	1.28	0.64	1.33	5.24
2006-2007	0.75	1.35	1.22	0.75	1.21	5.28
2007-2008	0.74	1.35	1.22	0.73	1.18	5.22
2008-2009	0.81	1.37	1.22	0.94	1.15	5.49
2009-2010	0.71	1.37	1.22	0.95	0.97	5.22
2010-2011	0.84	1.37	1.15	1.11	1.04	5.51
2011-2012	0.87	1.37	1.28	0.73	1.06	5.31
2012-2013	0.79	1.37	1.12	0.71	1.02	5.01
2013-2014	0.72	1.37	1.05	0.61	1.06	4.81

Source: Computed

It is obvious from analysis that the Z- score of Infosys witnessed more than three during the entire study period .The above table reveals that the company is in the extremely healthy zone. Although Z- scores shows fluctuating trend during the study period, it is always in the extremely healthy zone and it is not to fall.

TABLE 4: Z- SCORES ANALYSIS OF WIPRO

YEAR	X1	X2	X3	X4	X5	Z
2004-2005	0.21	1.45	1.15	4.72	1.45	8.98
2005-2006	0.22	1.47	1.18	0.76	1.58	5.21
2006-2007	0.31	1.47	1.06	2.34	1.43	6.61
2007-2008	0.55	1.92	0.75	1.81	1.13	6.16
2008-2009	0.41	2.02	0.69	1.49	1.22	5.83
2009-2010	0.49	1.86	0.79	1.91	0.98	6.03
2010-2011	0.42	1.77	0.69	2.69	0.98	6.55
2011-2012	0.44	1.75	0.69	2.43	1.05	6.36
2012-2013	0.47	1.79	0.79	2.38	1.08	6.51
2013-2014	0.52	1.65	0.95	3.84	1.13	8.09

Source: Computed

It is evident from analysis that the Z-score for Wipro is not less than 5.21 during the entire study period .The above table reveals that the company is in the extremely healthy zone. Although Z- scores shows fluctuating trend between 5.21 and 8.98 during the study period, it is always in the extremely safer zone.

TABLE 5: Z-SCORES ANALYSIS OF HCL TECHNOLOGIES

| YEAR	X_1	X_2	X_3	X_4	X_5	Z
2004-2005	-0.04	1.32	0.36	1.77	0.48	3.89
2005-2006	-0.07	1.34	0.82	1.15	1.77	5.01
2006-2007	0.18	1.33	1.12	5.02	1.08	8.73
2007-2008	0.06	1.33	0.89	0.75	1.42	4.45
2008-2009	0.51	1.16	0.99	4.07	1.16	7.89
2009-2010	0.46	1.05	0.63	2.11	0.81	5.06
2010-2011	0.26	1.12	0.63	3.41	0.95	6.37
2011-2012	0.19	1.11	0.99	3.81	1.09	7.19
2012-2013	0.33	1.23	1.32	0.97	1.21	5.06
2013-2014	0.59	1.29	1.42	1.66	0.96	5.92

Source: Computed

The Z- score of HCL Technologies is more than 3.0 during the study period of ten years. It was fluctuating during the entire period but did not go below the extremely healthy zone. It is obvious from the Z- scores that the company is in the extremely healthy zone.

TABLE 6: Z-SCORES OF SELECTED SOFTWARE COMPANIES IN INDIA

YEAR	TCS	INFOSIS	WIPRO	HCL
2004-2005	7.71	5.27	8.98	3.89
2005-2006	6.48	5.24	5.21	5.01
2006-2007	6.23	5.28	6.61	8.73
2007-2008	8.52	5.22	6.16	4.45
2008-2009	6.62	5.49	5.83	7.89
2009-2010	7.04	5.22	6.03	5.06
2010-2011	7.33	5.51	6.55	6.37
2011-2012	6.24	5.31	6.36	7.19
2012-2013	5.98	5.01	6.51	5.06
2013-2014	7.36	4.81	8.09	5.92

Source: Computed

FIGURE 1: Z-SCORE VALUES OF INDIAN SOFTWARE COMPANIES
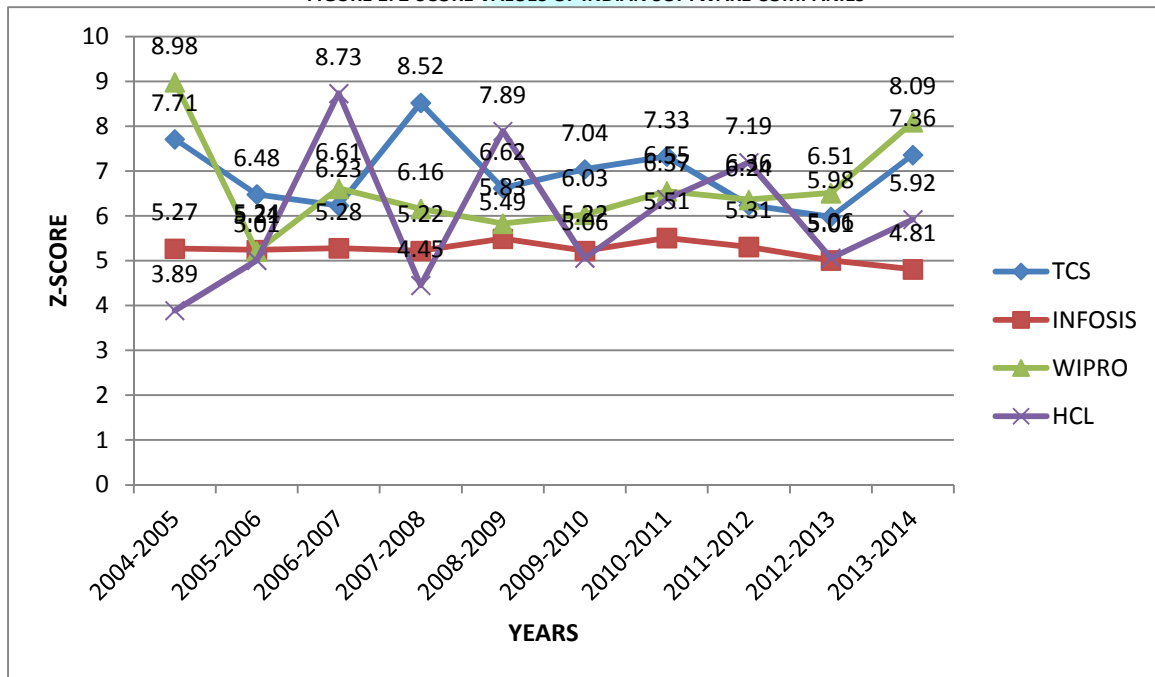
Source: Computed

The financial health of all the companies selected for the study was extremely healthy for all the years. In TCS Z-score ranges from5.98 to 7.71 and the Z-scores of Infosys ranges from4.81 to 5.51 and in Wipro Z-scores ranges from 5.83 to 8.98. Only in HCL Technologies more fluctuations were found and Z-scores ranges from 3.89 to 8.73 and other companies also had fluctuations only to some extent.

CONCLUSION

In general, this paper makes an attempt to test the financial health of the selected software companies in India. It highlights the financial health of Indian software companies. Over all the financial health of the selected software companies were in the extremely healthy zone. The Z-scores were above3.0 indicates extremely healthy zone. The financial health is viable and not to fall.

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