PREDICTING FINANCIAL DISTRESS AND EVALUATING LONG TERM SOLVENCY OF MM ENGINEERS PRIVATE LIMITED, COIMBATORE

by

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A PROJECT REPORT
submitted

In partial fulfillment of the requirements
for the award of the degree

of

MASTER OF BUSINESS ADMINISTRATION

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Coimbatore - 641 047

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BONAFIDE CERTIFICATE

Certified that this project report titled "Predicting Financial Distress and Evaluating Long Term Solvency of MM Engineers Private Limited" is the bonafide work of Ms. S. Suraja, who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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Submitted for the Project Viva-Voce examination held on _____

Internal Examiner External Examiner

DECLARATION

I, hereby declare that this project report entitled as " Predicting Financial distress and Long term Solvency of MM Engineers Private Limited", has undertaken for academic purpose submitted to Anna University in partial fulfillment of requirement for the award of degree of Master of Business Administration. The project report is the record of the original work done by me under the guidance of Ms.S.Sangeetha,Asst Prof (SRG) during the academic year 2011-2012.

I, also declare hereby, that the information given in this report is correct to the best of my knowledge and behalf.

Place: Coimbatore .....
Date: **(S.SURAJA)**

ACKNOWLEDGEMENT

I express my gratitude to our beloved chairman **Arutchelvar Dr. N. MAHALINGAM and Management** for the prime guiding spirit of **Kumaraguru College of Technology** for giving me an opportunity to undergo the MBA Degree course and to undertake this project work.

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I wholeheartedly thank **Mrs. Leelavathi, MM Engineers Private Limited** for her support to complete the project successfully.

At the outset, I wish to record my sincere gratitude to my beloved parents and my friends, who gave me the courage and strength for the successful completion of this project.

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INTRODUCTION

1.1 INTRODUCTION OF THE STUDY

Long-term solvency is defined as the ability to assure long term lenders with regard to periodic payment of interest and repayment of their loan on maturity. Long-term solvency is concerned with two important elements: capital structure and earning power. Capital structure refers to the sources of financing for a company. Financing can range from relatively permanent equity capital to more risky or short-term financing resources. Soon after the procurement of funds in the business from various sources of financing, the company subsequently acquires different assets. Assets represent security for providers of capital and range from loans secured by specific assets to other assets available as general security for unsecured loans. Another important aspect of long-term solvency is earning power. It is a measure of the likelihood of a company's rebounding from conditions of financial distress. It reflects the recurring ability of a company to generate cash from its operations. Earning-based tools are quite useful and reliable indicators of financial soundness. Earnings are the most significant and dependable source of payment of interest or repayment of borrowings. Stability in earnings helps company in procurement of funds by way of debt in times of needs. The long-term financial soundness of any business can be judged by its long-term creditors by testing its ability to pay interest charges regularly and its ability to repay the principal as per schedule. Thus long-term financial soundness (or solvency) of any business is examined by calculating ratios popularly, known as leverage of capital structure ratios. These ratios help us the interpreting repay long-term debt as per instalments stipulated in the contract.

COMMON SIZE STATEMENTS

Common size statements are constructed for a company over the years to show the relative changes by way of percentages of expenses, assets and liabilities. In this analysis, total assets are taken as 100 and different assets are expressed as a percentage of the total. Similarly, various liabilities are taken as a

part of total liabilities. These statements are also known as component percentage or 100 per cent statements because every individual item is stated as a percentage of the total 100. These statements are also useful in interfirm comparisons, given the fact that absolute data of two firms are not comparable.

COMPARATIVE BALANCE SHEET

The comparative balance sheet analysis is the study of the trend of the same items, or group of items and computed items in two or more balance sheets of the same business enterprise on different dates. The changes in periodic balance sheet items reflect the conduct of a business. The changes can be observed by comparison of the balance sheet at the beginning and at the end of a period and these changes can help in forming an opinion about the progress of an enterprise. Comparative figures will indicate the trend and direction of financial position and operating results.

LEVERAGE AND CAPITAL STRUCTURE RATIOS IN SOLVENCY ANALYSIS

Ratio analysis is quite useful for evaluating the long-term solvency of a firm. There are two different financial ratios used for this purpose: (i) Debt-equity or Debt-asset ratios and, (ii) Coverage ratios. The first type of ratio reflects the relationship between owner's capital and debt capital. The second category of ratios shows the number of times the fixed obligations are covered by the earnings of the company.

DEBT-EQUITY RATIO

$$\text{Debt-Equity ratio} = \frac{\text{Outsiders Funds}}{\text{Shareholders funds}}$$

It is also known as External-Internal Equity ratio, is calculated to measure the relative claims of outsiders and the owners against the firm's assets. The two basic components of the ratio are outsiders funds and shareholders' funds. The outsiders funds include all debts/ liabilities to outsiders, both long term and short term. The shareholders' funds consist of equity share capital, preference capital, capital reserves, revenue reserves, and surpluses like reserves for contingencies, sinking funds, etc.

PROPRIETARY RATIO

$$\text{Proprietary ratio} = \frac{\text{Shareholders' funds}}{\text{Total assets}}$$

It is also known as Equity ratio. This ratio indicates the extent to which assets are financed by proprietor's funds. The higher the ratio or the share of the shareholders, in the total capital of the company, better is the long-term solvency position of the company. This ratio also indicates the extent to which the assets of the company can be lost without affecting the interest of creditors of the company.

SOLVENCY RATIO

$$\text{Solvency ratio} = \frac{\text{Total lisbilities to outsiders}}{\text{Total assets}}$$

This ratio throws light on the financing of assets of a company and identifies the extent to which assets are financed by external sources of funds. Generally, lower the ratio of total liabilities to total assets, more satisfactory or stable is the long-term solvency position of the firm.

FIXED ASSETS RATIO

$$\text{Fixed assets ratio} = \frac{\text{Fixed assets}}{\text{Total long-term funds}}$$

This ratio indicates the extent to which the totals of fixed assets are financed by long term funds of the firm. This ratio throws light on the financial policy pursued by the company in acquisition of fixed assets. The prudential principle of financial policy is that the fixed assets should be acquired by long-term funds only. If the fixed assets exceed the total of the long-term funds it implies that the firm has financed a part of the fixed assets out of current funds or the working capital which is nor a good financial policy.

CAPITAL GEARING RATIO

$$\text{Capital gearing ratio} = \frac{\text{Long-term debt}}{\text{Equity share capital}}$$

It is also called as leverage ratio. The term 'capital gearing' is used to describe the relationship between equity share capital including reserves and

surpluses to preference share capital and other fixed interest-bearing loans. Gearing should be maintained in such a way that the company is able to maintain a steady rate of dividend. High gearing ratio is not good for a new company or a company in which future earnings are uncertain. A company which has stability in demand for its product and earns a fixed rate of return can make good use of debt capital in order to enhance the profitability of equity shareholders.

INTEREST COVERAGE RATIO

$$\text{Interest coverage ratio} = \frac{\text{Net profit(before interest and taxes)}}{\text{Fixed interest charges}}$$

It is also called as 'time interest earned ratio' or 'debt service ratio'. This ratio reveals the number of times interest is covered by the profits available for interest. A higher ratio ensures safety of returns on the amount of debt and it also ensures availability of surplus for shareholders.

ALTMAN'S Z-SCORE MODEL

This model was developed in the U.S by Edward I. Altman in the year 1968. One of the most well-known models for predicting financial distress is Altman's Z-score. This model uses several ratios to investigate a predictor of financial distress. This model uses a statistical technique of multiple discriminant analysis to obtain a predictor that is considered to be a linear function of multiple explanatory variables. This predictor identifies the likelihood of bankruptcy, if any. This model takes the following form:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

Where, X_1 = Working capital/ Total assets

X_2 = Retained earnings/ Total assets

X_3 = EBIT/ Total assets

X_4 = Net worth/ Total liabilities

X_5 = Sales/ Total assets

If $Z < 2.675$; then the firm is classified as failed.

Altman's model has a high degree of accuracy of about 95%.

FULMER MODEL

Fulmer model was developed in the year 1984. He used step-wise multiple discriminant analysis to predict financial distress. This model takes the following form:

$H = 5.528V_1 + 0.212V_2 + 0.073V_3 + 1.270V_4 – 0.120V_5 + 2.335V_6 + 0.575V_7 + 1.083V_8 + 0.894V_7 – 6.075$

$H < 0$; then the firm is classified as failed.

Where, V_1 = Retained earnings/ Total assets

V_2 = Sales/ Total assets

V_3 = EBIT/ Equity

V_4 = Cashflow/ Total debt

V_5 = Debt/ Total assets

V_6 = Current liabilities/ Total assets

V_7 = Log tangible total assets

V_8 = Working capital/ Total debt

V_9 = Log EBIT/ Interest

Fulmer reported a 98% accuracy rate in classifying the test companies one year prior to failure and an 81% accuracy rate more than one year prior to bankruptcy.

1.2 OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE

- To predict the financial distress and long term solvency of MM Engineers Limited.

SECONDARY OBJECTIVES

- To analyse the growth and consistency of the firm.
- To examine the implications of financial leverage on the performance of the company.
- To analyze asset composition and coverage for solvency analysis.

1.3 INDUSTRY PROFILE

From being simple machines used to carry up and bring down materials, cranes and hoists have today become more sophisticated simplifying processes in manufacturing, mining, infrastructure, automotive and construction industries.

A wide range of industries, especially manufacturing, mining and construction require heavy loads to be lifted or lowered in various processes. Machineries like hoist and cranes have greatly refused the human efforts and also brought down the process timing, thereby increasing the output.

A crane is a machine used for lifting materials. It has a winder (also called a wire rope drum), wire ropes or chains and sheaves to lift and lower loads and to move them horizontally. It has one or more simple machines to produce the mechanical power for moving the loads, which otherwise is beyond a human's physical capability. Cranes are commonly used in the transport industry for loading and unloading freight. It is widely used in the construction industry, especially while building tall buildings, and also in the manufacturing industry for assembling of heavy equipment.

The earliest cranes were used for construction activities in Ancient Greece. They were mostly powered by labourers or men or other animals. Later, as their application increased, they evolved into larger cranes to lift heavier weights. With

the growth in the shipping industry, harbour cranes were introduced for loading and unloading material and even building of huge ships. Wood being the commonly used material back then, most of the earliest cranes were made from wood. Later after industrial revolution, cast iron and steel cranes came into existence.

The invention of steam engines added to the power of these cranes. The earliest steam crane being introduced in the 18th or 19th century and were used till the late 20th century. With increase in the scope of their usage, today's cranes are powered by internal combustion engines or electric motors and hydraulic systems and operate with advanced computerised systems. Some industries though still use manual cranes power supply is a concern.

Cranes exist in an enormous variety of forms — each tailored to a specific use. Sizes range from the smallest jib cranes, used inside workshops, to the tallest tower cranes, used for constructing high buildings. For a while, mini-cranes are also used for constructing high buildings, in order to facilitate constructions by reaching tight spaces. Larger floating cranes are generally used to build oil rigs and salvage sunken ships.

There are three major considerations in the design of cranes. First, the crane must be able to lift the weight of the load; second, the crane must not topple; third, the crane must not rupture.

Cranes illustrate the use of one or more simple machines to create mechanical advantage.

Cranes, like all machines, obey the principle of conservation of energy. This means that the energy delivered to the load cannot exceed the energy put into the machine. Cranes can also get in chain reactions; the rupture of one crane may in turn take out nearby cranes. Cranes need to be watched carefully.

Standards for cranes mounted on ships or offshore platforms are somewhat stricter because of the dynamic load on the crane due to vessel motion. Additionally, the stability of the vessel or platform must be considered.

For stationary pedestal or kingpost mounted cranes, the moment created by the boom, jib, and load is resisted by the pedestal base or kingpost. Stress within the base must be less than the yield stress of the material or the crane will fail.

There are many types of cranes depending on their use. They include mobile crane, truck-mounted crane, side lift crane, rough terrain crane, all terrain crane, crawler crane, aerial crane, fixed carne, tower crane, hammerhead crane, overhead crane, deck crane, jib crane, bulk-handling cranes et al.

1.4 COMPANY PROFILE

MM Engineers Private Limited, Coimbatore, India, is an ISO 2001-9008 and has been in the line of manufacturing Material Handling Equipments. Three decades of experience in this field has not only earned a reputation for quality equipment, best price and prompt deliveries, but the ‘Continuous Innovations in Crane Technology’. This has enabled it to update its products to most modern technology in the world.

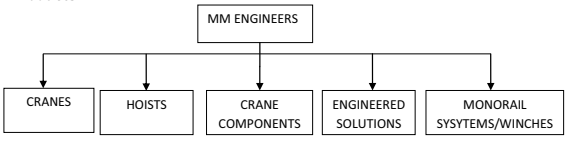
Vision

MM ENGINEERS PVT LTD is committed to meet customers' requirements, through continuous innovations in crane technology, to meet the international standards and to achieve the ultimate objective of total customer satisfaction through teamwork.

Values

- High quality
- Dedicated design team

Products



Infrastructure

- Design capabilities

MM is keen to provide its customers the highest quality of products and has hence ensured that the design team is equipped with the best of facilities.

- Manufacturing capabilities

MM Unit I is located in the city centre and serves as the Administrative Office, with Marketing and After-sales Service. MM Unit II, the factory is located on Madukkarai, Sundarapuram Road, in about 2.5 acres of land with two factory buildings of 3000 sq.m.

- Testing Facilities

MM is equipped with all the required facilities for testing Hoists, Jib Cranes and Overhead Cranes up to 100 tons capacity.

Clientele

- BHEL
- Biocon
- BMW
- Ford
- Hyundai
- ISRO
- Larsen and Toubro
- Nissan
- Pricol
- Siemens
- TATA steel
- V-Guard
- Vizag Steel

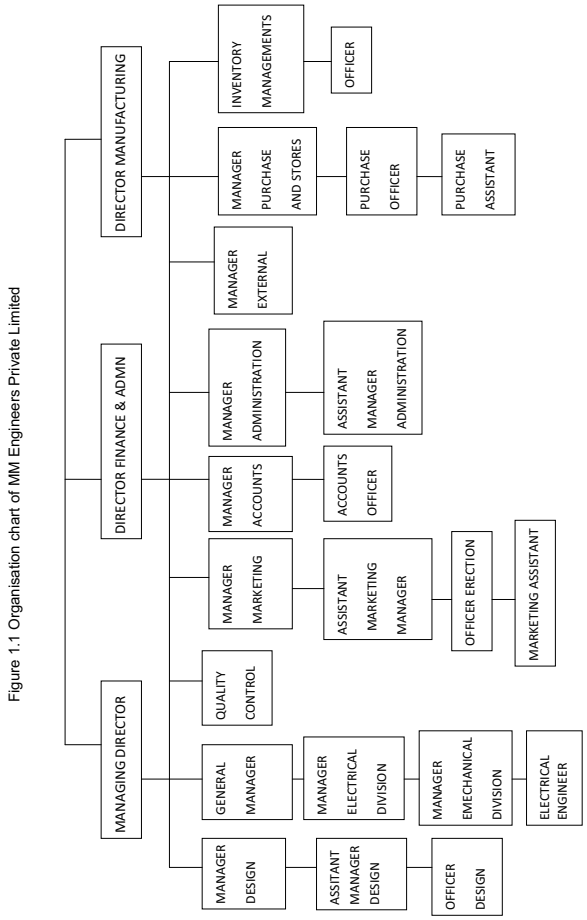


Figure 1.1 Organisation chart of MM Engineers Private Limited

1.6 SCOPE OF THE STUDY

The scope of the study is confined to the five financial years of MM Engineers, Coimbatore. The study would focus on understanding the long term solvency of the firm and also helps the firm in understanding the financial strength of the firm through capital structure, leverage ratios and different solvency models.

CHAPTER 2

REVIEW OF LITERATURE

Kasilingam.R and Ramasundaram.G(2012)[1] recommended that the study of solvency and also to measure the solvency statusof any firm due to global crisis. The prediction and prevention of financial distress is one of the major factors that should be analysed in advance as an early warning signal to avoid the high cost of insolvency. The authors used two solvency prediction models – Springate model and Fulmer model. They conducted correlation analysis between independent variables and the dependent variables in both the models.

Bardia.S.C(2012)[2] investigated long term solvency position, by the use of common size analysis technique and solvency ratio analysis technique in conjunction with the statistical technique of hypothesis testing. The two important elements of long term solvency are capital structure and earning power. They examined the implications of financial leverage on the performance of the company. They predicted the financial distress or bankruptcy using Altman Z-score model.

G.H. Muller, B.W. Steyn-Bruwer and W.D. Hamman(2009)[3] highlighted several deficiencies in previous research which investigated the prediction of corporate failure of companies. The different modelling techniques considered were: Multiple discriminant analysis, recursive partitioning, logit analysis and neural networks. Financial distress is defined as the situation when a company cannot continue to exist in its current form and therefore includes: bankruptcy, delisting or a major organisational restructuring.

[1] *Kasilingam.R and Ramasundarm.G(2012),* " Predicting Solvency of non-banking financial institutions in India using Fulmer and Springate model", Journal of Services Research, Volume 12, April – September.

[2] *Bardia.S.C(2012),* " Predicting Financial Distress and Evaluating Long-Term Solvency: An Empirical Study", IUP Journal

[3] *Muller.G.H, Steyn-Bruwer.B.W. and Hamman.W.D(2009),* "Predicting financial distress of companies listed on the JSE - A comparison of techniques"

Bi-Huei Tsai and Chih-Huei Chang(2010)[4] developed predictive models of financial distress using the two-stage method applied to listed Taiwanese firms. This investigation follows the Basel Committee on Banking Supervision(2001) in defining financial distress as any default event, including reclassification of publicly listed firms as delisted firms, reorganization, receipt of government bailouts, material embezzlement, termination of operations because of not sufficient funds and reclassification of original stocks into full-deal stocks. The significance of individual variables is examined using Wald statistics, and the overall goodness-of-fit for the models is assessed based on the likelihood ratios. In addition to financial ratios, market variables significantly predict financial distress.

Carlos A. Molina and Lorenzo A. Preve(2012)[5] studies the use of supplier's trade credit by firms in financial distress. The author seek to analyze the effect of financial distress on the use of trade credit as a substitute for alternative sources of financing and quantify the effect of increasing the use of trade credit on the costs of financial distress. A firm is considered to be in financial distress if its coverage ratio is less than one for two consecutive years or if it is below 0.8 in any given year. Trade credit is an expensive source of financing, it is reasonable to expect that the firms in financial distress increasing its use incur extra costs that diminishes their performance.

Tyler Shumway(1999)[6] stated that hazard models are more appropriate for forecasting bankruptcy than the single period models used previously. Single-period bankruptcy models give biased and inconsistent probability estimates while hazard models produce consistent estimates. Hazard models resolve the problems of static models by explicitly accounting for time.

[4] *Bi-Huei Tsai and Chih-Huei Chang(2010),* "Predicting financial distress based on the credit cycle index: a two-stage empirical analysis", Emerging Market Finance and Trade, May-June 2010.

[5] *Carlos a. Molina and Lorenzo A. Preve(2012),* "An Empirical Analysis of the effect of financial distress on trade credit", Financial Management, Spring 2012

[6] *Tyler Shumway(1999),* " Forecasting Bankruptcy more accurately, A simple hazard model"

Arun. R and Kasilingam. R(2011)[7] carried out a study to predict the solvency of IT companies in India based on the financial statements like balance sheets, profit and loss accounts. They defined liquidation as a situation in which a firm is terminated as a going concern involves selling its assets to salvage its value. They made a new attempt to use Z-score model for IT companies to test their solvency. Based on the Z-score, they classified the companies in to four zones: safe, grey and distress. EBIT is the predominant factor for the solvency status.

Serpil Canbas, Yildirim B. Onal, Hatice G. Duzakin and Suleyman B.Kilic(2006) [8]investigated whether or not firms that are taken in to the surveillance market in Istanbul Stock Exchange are experiencing financial distress. Principal component analysis and discriminant analysis are combined in order to estimate an integrated early warning model for financial distress prediction. The basic assumption of the estimation of early warning model is based on that firms under study can be split into two groups: the other firms and the firms that were taken into surveillance market.

Carlos A. Molina and Lorenzo A. Preve(2009)[9] studied the trade receivables policy of distressed firms as the trade-off between the firm's willingness to gain sales and the firm's need for cash. The management of trade receivables has the potential to play an important role when firms encounter financial problems. The authors also studied the effect that a decrease in trade receivables has on the performance of firms in financial distress. The authors find that there is negative effect on financial distress on trade receivables and argue that this is due to the urgent cash needs of financially distressed firms.

[7] *Arun. R and Kasilingam. R(2011),* "Predicting solvency: Indian IT companies", SCMS Journal of Indian Management, January-March, 2011

[8] *Serpil Canbas, Yildirim B. Onal, Hatice G. Duzakin and Suleyman B.Kilic(2006),* "Prediction of financial distress by multivariate statistical analysis: The case of firms taken into the surveillance market in the Istanbul Stock Exchange", International Journal of Theoretical and Applied Finance, Vol 9, 2006

[9] *Carlos A. Molina and Lorenzo A. Preve(2009),* "Trade receivables policy of distressed firms and its effect on the costs of financial distress", Financial Management, Autumn 2009

Julie Fitzpatrick and Joseph P.Ogden (2011)[10] examined the efficacy of six risk-proxy variables to forecast 5-year failure : year-end t-values of stock return volatility, firm size, recent profitability, market leverage, book-to-market equity ratio and recent stock return. The authors have then identified distressed firms and analyze the effect of year t+1 operating and financing cash flows on 5-year failures rates for these firms using a new methodology, failure risk surprise. Finally they found that high-LEV firms exhibit greater failure risk sensitivity to year t+1 operating result and to whether or not a recession occurs by year t+5.

Sebastian Gryglewicz(2010)[11] studied the impact of both liquidity and solvency concerns on corporate finance. The author considers two sources of cash flow shocks-separate and interconnected. The firm enters financial distress in two ways: a firm can become illiquid after a negative short-term cash flow or it can become insolvent if the expected rate of cash flows decreases sufficiently. The firm generates cash flows with two sources of uncertainity - pay debt coupons and taxes.

Daniel Bryan, Samuel L. Tiras and Clark M. Wheatley (1999)[12] classified stress as either long-term stress(solvency risk) and short-term stress(liquidity risk) and predict that firms that exhibit low solvency risk and high liquidity risk are most likely to emerge from bankruptcy. Liquidity measures become distorted if a firm sells its assets to finance its continuing operations. If non-productive assets were sold, these types of sales would increase a firm's productivity and lower the likelihood of emergence and vice versa, if productive assets are sold.

[10] *Julie Fitzpatrick and Joseph P.Ogden (2011)* "The detection and dynamics of financial distress", International review of finance, 2011.

[11] *Sebastian Gryglewicz(2010),* "A theory of corporate financial decisions with liquidity and solvency concerns"

[12] *Daniel Bryan, Samuel L. Tiras and Clark M. Wheatley (1999),* "The interaction of solvency with liquidity and its association with bankruptcy emergence"

CHAPTER 3
RESEARCH METHODOLOGY

3.1 TYPE OF THE STUDY

Analytical Research

Under this research, the researcher goes with the specific topic about which he/she have not made any conclusions termed as questions. The researcher surveys the information and views already out there both before and during the research. At the end of the research, the researcher will be able to contribute her own thoughts to the discussion by drawing some conclusions about the topic chosen; hence this study comes under analytical research.

3.2 METHOD OF DATA COLLECTION

The data used in this project is secondary data. The sources of data had been obtained from the company's balance sheet for a span of 5 years.

3.3 PERIOD OF STUDY

The period of study is from the financial year 2007 to 2012. A financial year is composed of 12 month period from April to March.

3.4 TOOLS FOR ANALYSIS

- Common size analysis technique
- Ratio Analysis
- Bankruptcy models – Altman's Z-score model and Fulmer H-score model
- Comparative Balance sheet analysis
- Debt-equity ratio
- Proprietary ratio
- Solvency ratio
- Capital Gearing ratio
- Interest Coverage ratio
- Fixed assets ratio

3.5 LIMITATIONS OF THE STUDY

In order to do research articulately utmost care has been taken but still can have certain limitations

- The analysis is made using secondary data only.
- The period of study is only for five years(2007-2012)
- This study is applicable only to MM Engineers, Coimbatore.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

COMMON SIZE ANALYSIS TECHNIQUE

Table No: 4.1

Table showing Debt Composition in solvency analysis

Particulars	2007-08	2008-09	2009-10	2010-11	2011-12
Reserves and surplus	0.0802	0.275	0.705	4.39	25.98
Share capital	14.03	10.16	12.75	10.57	6.83
Share capital advance	0.732	4.59	7.21	4.86	2.28
Bank O/D	4.73	6.82	9.54	8.37	5.68
Secured loans	14.83	6.04	2.14	0.739	1.05
Current liabilities	65.58	72.10	67.64	71.05	58.16
Total liabilities	100	100	100	100	100

Source: Balance sheet of MM Engineers Private Limited, Coimbatore

INTERPRETATION

Table 4.1 shows the common size analysis of MM Engineers for the period of study. From the table it is evident that the proportion of share capital varies between 6.83% in 2010-11 and 14.03% in 2007-08. The proportion of reserves and surplus was as low as 0.0802% in 2007-08 and as high as 25.98% in 2011-12. There has been drastic increase in the proportion of reserves and surplus because of the increase in sales of the company. The share of debt reduced substantially during the latter period of study. This helped the company in improving its profitability. The share of current liabilities ranged from 58.16% in 2011-12 to 72.10% in 2008-09.

Table No: 4.2

Table showing Asset composition in solvency analysis

Particulars	2007-08	2008-09	2009-10	2010-11	2011-12
Fixed assets	18.90	19.85	16.71	15.46	13.90
Investment & Deposits	11.70	4.50	7.60	12.52	6.40
Current assets					
Advance income tax	0.11	-	1.06	-	0.74
Inventory	18.73	6.60	6.93	22.30	36.80
Deposits	0.38	0.39	0.84	0.39	0.22
Loans & Advances	4.96	7.32	2.98	2.39	0.50
Sundry Debtors	30.70	59.03	59.73	42.72	39.10
Cash – in – hand	0.016	0.006	0.028	0.016	0.011
Bank Accounts	1.63	1.27	2.64	2.67	0.87
Deferred tax asset	1.50	1.02	1.06	0.92	0.59
Misc expenses	11.30	17.86	-	-	-
TDS receivables	-	-	0.45	0.49	0.74
Total current assets	58.05	75.63	75.72	72.00	79.69
Total assets	100	100	100	100	100

Source: Balance sheet of MM Engineers Private Limited, Coimbatore

INTERPRETATION

Table 4.2 shows the common size analysis of asset composition of MM Engineers. It is clear from the table that the total current assets was low during the early years of the study period and increased during the latter years and ranged from 58.05% in 2007-08 to 79.69% in 2011-12. But, on the other hand, the proportion of fixed assets was low high during the early period of study and low

during the latter period of study. It ranged from 13.90 in 2011-12 to 18.95 in 2008-09. Investments were high of 12.52 % in 2010-11 and low as 4.50% in 2008-09.

Table No: 4.3

Table showing Financial ratios of MM Engineers.

Particulars	Debt – Equity ratio	Proprietary ratio	Solvency ratio	Fixed asset ratio	Capital Gearing ratio	Interest coverage ratio
2007 – 08	5.30	0.148	0.787	0.202	5.33	3.09
2008 – 09	4.66	0.150	0.700	0.233	4.74	1.50
2009 – 10	3.63	0.206	0.745	0.176	3.73	0.263
2010 – 11	2.92	0.198	0.578	0.199	3.74	1.70
2011 – 12	1.76	0.35	0.618	0.143	6.77	10.79
Mean	3.65	0.2104	0.6856	0.1906	4.862	3.4686
Standard Deviation	1.40	0.0824	0.0868	0.03345	1.266	4.2138
Coefficient of variation	38.35	39.16	12.66	17.54	26.03	121.48

INTERPRETATION

DEBT-EQUITY RATIO

The debt-equity ratio was 5.30 in 2007-08, highest during the study period and thereafter declined to 1.76 in 2011-12. The average of this ratio is 3.65. A high debt-equity ratio implies that there is excess funds generated from outsiders and further company would face burden of interest payment.

PROPRIETARY RATIO

The proprietary ratio was 0.148 in 2007-08 and at the highest of 0.35 during 2011-12. This ratio shows a steady increase during the period of study. The average of this ratio is 0.2104. The higher the proprietary ratio, better is the long term solvency position of the company.

SOLVENCY RATIO

From the table 4.3, it is clear that the solvency ratio followed a fluctuating trend during the period of study. It was at the highest during the initial period of study, 0.787 in 2007-08 and at its lowest of 0.578 in 2010-11. The average of this ratio is 0.6856. The lower the solvency ratio, more stable is the long term solvency position of the firm.

FIXED ASSET RATIO

Table 4.3 showed that the fixed asset ratio varied from 0.143 in 2011-12 to 0.233 in 2008-09. The average fixed asset ratio is 0.1906. Here, the total long term funds are more than the total fixed assets, which means that a part of working capital requirements is met out of the long term funds of the firm. Therefore, it ensures that the company follows a good financial policy.

CAPITAL GEARING RATIO

Table 4.3 shows the capital gearing ratio of MM Engineers during the study period. The ratio shows a decreasing trend during the initial period of study and further increases to a higher value during the latter period. This ratio ranged from 3.73 in 2009-10 to 6.77 in 2011-12. The average of this ratio is 4.862. Here, the long term debt is equal to the share capital, then the firm is said to be highly geared.

INTEREST COVERAGE RATIO

The interest coverage ratio shows a variable trend during the period of study. It ranges from 0.263 in 2009-10 to 10.79 in 2011-12. The average of this ratio is 3.4686. The higher the ratio, more safe are the long term creditors of the firm.

4.4 ALTMAN'S FINANCIAL DISTRESS MODEL

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.010X_5$$

Where,

Z = Altman's Z score

X_1 = Working Capital/ Total assets (%)

X_2 = Retained Earnings / Total assets (%)

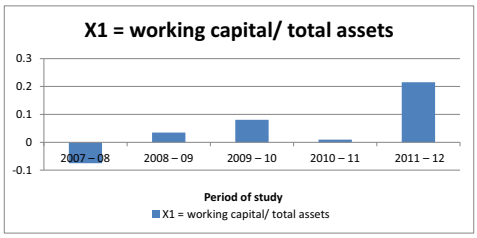
X_3 = EBIT/ Total assets (%)

X_4 = Networth/ Total liabilities (%)

X_5 = Sales/ Total assets (times)

X_1 = WORKING CAPITAL/ TOTAL ASSETS

Year	Working Capital (Rs.)	Total assets (Rs.)	X_1 = working capital/ total assets
2007 – 08	-4826527.93	64113665.06	-7.52
2008 – 09	3131927.51	88598968.85	3.50
2009 – 10	7603808.52	94113711.96	8.07
2010 – 11	1080698.48	113485051.54	0.95
2011 – 12	37822529.30	175609870.57	21.53



INTERPRETATION

WORKING CAPITAL/ TOTAL ASSETS

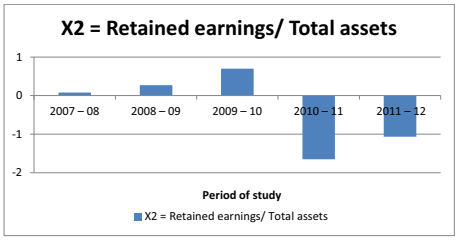
- The ratio is -7.52% in 2007-08, it is because there has not been enough assets to be utilised as working capital.
- During the year 2008-09, the ratio has slightly improved to 3.5%.
- Thereafter the ratio has increased to 8.07% which is still a very low value of total assets contributing to the net working capital.
- The ratio has drastically come to a much lower value of about 0.95% in the year 2010-11.
- In the year 2011-12, the ratio has considerably increased to 21.53%.

INFERENCE

The ratio has increased over the period of study 2007-08 to 2011-12. The company had no enough assets at the initial study period to contribute to the working capital. Later, the company showed improved performance by the total assets contributing to about 21.53% to the working capital in 2011-12. The ratio was very much low during the year 2010-11 which shows the company managed the funds effectively and functioned well. The net working capital to total assets ratio has reduced and the working capital insufficiency and the company is in need of short term funds.

X_2 = RETAINED EARNINGS/ TOTAL ASSETS

Year	Retained Earnings(Rs)	Total assets(Rs)	X_2 = Retained earnings/ Total assets
2007 – 08	51439.78	64113665.06	0.080
2008 – 09	243977.16	88598968.85	0.270
2009 – 10	664154.17	94113711.96	0.700
2010 – 11	4990705.02	113485051.54	-1.650
2011 – 12	45627843.7	175609870.57	-1.067



INTERPRETATION

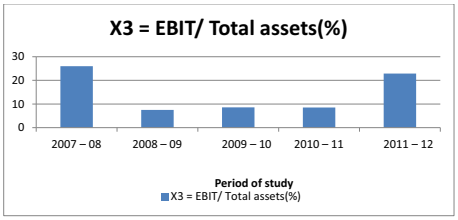
- The company has earned a profit of Rs. 1.02Crores in 2007-08 and was able to have the ratio of retained earnings to total assets at 0.08%.
- During the year 2008-09, the company earned lesser profit amounting to Rs.74.4 lakhs. Though the profit is less compared to the previous year, the ratio of retained earnings to total assets has moderately increased to 0.27%.
- In the next year the company's profit reduced to Rs. 73.5lakhs, still there was improvement in the ratio of retained earnings to total assets to 0.7%.
- Since the profits during the year 2010-11 reduced to Rs.68.6lakhs, the ratio of retained earnings to total assets reached a negative value of -1.65%.
- Though the ratio of retained earnings to total assets is still in the negative trend, the value slightly improved to -1.067% and also the profits have also improved to Rs. 4.06 Crores.

INFERENCE

Retained earnings to total assets ratio showed an increasing trend until 2009-10. But during 2010-11 to 2011-12 THIS VALUE entered the negative trend due to decrease in profits of the company.

X_3 = EBIT/ Total assets (%)

Year	EBIT (Rs)	Total assets(Rs)	X_3 = EBIT/ Total assets
2007 – 08	16642092.86	64113665.06	25.95
2008 – 09	6670745.79	88598968.85	7.52
2009 – 10	8090471.44	94113711.96	8.59
2010 – 11	9674148.81	113485051.54	8.52
2011 – 12	40146898.26	175609870.57	22.86



INTERPRETATION

EBIT/ TOTAL ASSETS(%)

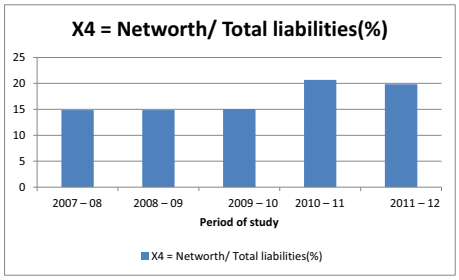
- EBIT to total assets ratio was 25.95% for the year 2007-08. This shows that the company was able to make profit and functioned well.
- In the year 2008-09, the ratio came down to 7.52% with a reduced profit. The total assets of the company have increased to Rs. 8.85Crores as against Rs. 6.41Crores in 2007-08.
- The ratio increased to 8.596% during 2009-10 due to increase in profit.
- The ratio slightly came down to 8.524% in 2010-11 though the sales increased to Rs. 21.23Crores to that of Rs. 19.24 during the previous year.
- The ratio drastically increased to 22.86% in 2011-12 with increase in profit.

INFERENCE

EBIT to total assets ratio has reduced till 2010-11 because the company failed to earn enough profits to meet out the debts.

X_4 = NETWORTH/ TOTAL LIABILITIES(%)

Year	Networth	Total Liabilities	X_4=Networth/ Total liabilities(%)
2007 – 08	9521379.78	64113665.06	14.85
2008 – 09	13309849.16	88598968.85	15.02
2009 – 10	19450026.17	94113711.96	20.66
2010 – 11	22509705.05	113485051.54	19.83
2011 – 12	61639844	175609870.57	35.1



INTERPRETATION

NETWORTH/ TOTAL LIABILITIES(%)

- The ratio for the year 2007-08 was 14.85%.
- In the year 2008-09 and 2009-10 the ratio increased to 15.02% and 20.66% respectively.
- There was a slight decrease in the ratio to 19.83 in 2010-11 as against the previous year.

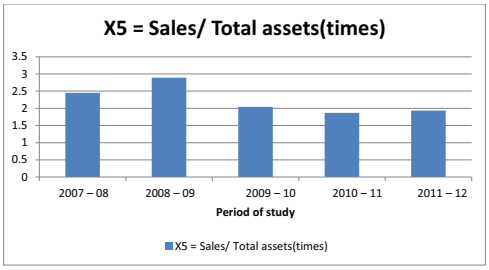
- The ratio of networth to total liabilities was at the highest of 35.1% during 2011-12.

INFERENCE

Networth to total liabilities ratio has increased due to increase in shareholder's funds. The increase in the shareholders funds has increased the ratio of networth to total liabilities over the years.

X_5 = SALES/ TOTAL ASSETS(TIMES)

Year	Sales(Rs.)	Total assets(Rs.)	X_5 = Sales/ Total assets(times)
2007 – 08	156768383.00	64113665.06	2.45
2008 – 09	256160582.00	88598968.85	2.89
2009 – 10	192455462.00	94113711.96	2.044
2010 – 11	212308898.00	113485051.54	1.870
2011 – 12	339228657.00	175609870.57	1.9317



INTERPRETATION

SALES/ TOTAL ASSETS(TIMES)

- The sales to total assets ratio was 2.45 for 2007-08. The ratio increased to 2.89 during 2008-09 since sales increased than that of the previous years.
- The sales level decreased for the period 2009-10 and the ratio also decreased to 2.044. In turn, the total assets increased to Rs.9.41Crores from Rs.8.85Crores for the previous year.
- The ratio was low during the period due to decrease in sales and increase in total assets. The ratio was 1.870 for 2010-11 and 1.9317 for 2011-12.

INFERENCE

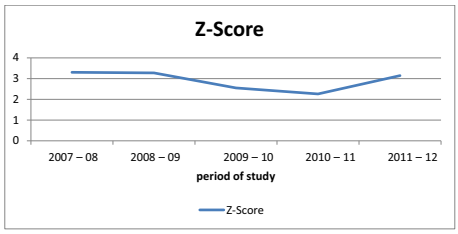
Sales are on the increase until the year 2010-11 and also the total assets have gone up during the study period. Hence there is not much variation in the ratio. But for the period 2011-12 the sales has gone up and could reach a ratio of 1.93.

Table 4.4

Table showing the long term solvency position of MM Engineers for the study period using Altman Z score model

Period	X_1	X_2	X_3	X_4	X_5	Z score
2007 – 08	-7.52	0.080	25.95	14.85	2.45	3.30
2008 – 09	3.5	00.27	7.52	15.02	2.89	3.27
2009 – 10	8.07	00.70	8.596	20.66	2.044	2.55
2010 – 11	00.95	-1.65	8.524	19.83	1.870	2.258
2011 – 12	21.53	-1.067	22.86	35.1	1.9317	3.14

Figure 4.1 Chart showing Z score



INTERPRETATION

The above table and chart shows that the Z-Score is less than 2.675 for the years 2009-10 and 2010-11 and is above 2.675 during 2007-08, 2008-09 and 2011-12. Though the company could consistently achieves increase in sales from Rs. 15.67Crores during 2007-08 to Rs. 33.92Crores during 2011-12, it could not earn enough profits as the total expenses have gone up from Rs. 5.11Crores to Rs. 8.79Crores. The sale has increased 1.16 times whereas the expenses have increased 0.72 times. This is due to increase in the price of raw materials, power and fuel and also the manufacturing expenses.

The total assets of the company have increased from Rs. 6.41Crores to Rs. 17.56Crores during the period of study.

INFERENCE

The Z-Score model indicates the long-term solvency of the firm. A score of 2.675 indicates the benchmark. A firm whose score is above 2.675 is considered financially sound or in other words, the firm is said to have low or no chances of bankruptcy.

The company has also Z-scores below the benchmark during the study period. The score below the benchmark causes a serious concern on the long-term solvency.

4.5 FULMER MODEL

$H = 5.528V_1 + 0.212V_2 + 0.073V_3 + 1.270V_4 – 0.120V_5 + 2.335V_6 + 0.575V_7 + 1.083V_8 + 0.894V_9 – 6.075$

Where,

H = H score

V_1 = Retained earnings/ Total assets

V_2 = Sales/ Total assets

V_3 = EBIT/ Equity

V_4 = Cash flow/ Total debt

V_5 = Debt/ Total assets

V_6 = Current Liabilities/ Total assets

V_7 = Log tangible total assets

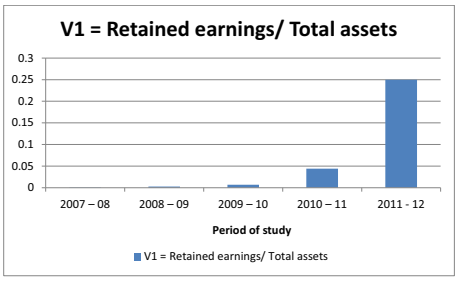
V_8 = Working capital/ Total debt

V_9 = Log EBIT/ Interest

INTERPRETATION

V_1 = RETAINED EARNINGS/ TOTAL ASSETS

Years	Retained Earnings (Rs)	Total assets (Rs)	V_1 = Retained earnings/ Total assets
2007-08	51439.78	64113665.06	0.00080
2008-09	243977.16	88598968.85	0.0027
2009-10	664154.17	94113711.96	0.0070
2010-11	4990705.02	113485051.54	0.044
2011-12	45627843.7	175609870.57	0.25



INTERPRETATION

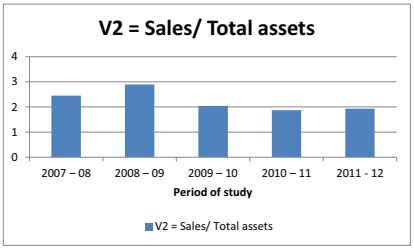
- Retained earnings to total assets ratio was 0.0008 during the year 2007-08. This is because the company has maintained only minimum reserves.
- The ratio of retained earnings to total assets slightly improved in the consecutive years due to increase in the retained earnings by 3.7 times in 2008-09 and 11.91 times in 2009-10.
- Due to high retained earnings during the initial part of the study, the company suffered a negative value of retained earnings during the latter part of the study, leading to negative trend in the retained earnings to total assets ratio.

INFERENCE

Though the company's assets have improved considerably, it did not contribute to the ratio of retained earnings to total assets.

V_2 = SALES/ TOTAL ASSETS

Years	Sales (Rs)	Total assets (Rs)	V_2 = Sales/ Total assets
2007-08	156768383.00	64113665.06	2.45
2008-09	256160582.00	88598968.85	2.89
2009-10	192455462.00	94113711.96	2.04
2010-11	212308898.00	113485051.54	1.87
2011-12	339228657.00	175609870.57	1.93



INTERPRETATION

SALES/ TOTAL ASSETS

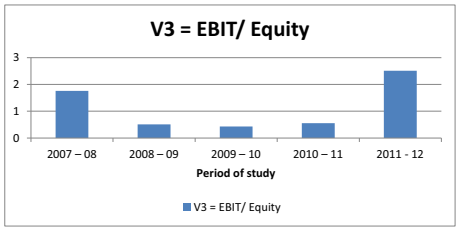
- The sales to total assets ratio showed a fluctuating trend during the entire study period from 2007 to 2012.
- For the year 2008-09 the sales increased by 0.63 times to that in 2007-08 which has improved the sales to total assets ratio.
- The ratio decreased during the year 2009-10 and 2010-11 due to decrease in sales and increase in total assets.
- The ratio slightly improved during the latter part of the study due to increase in sales by 59.7%

INFERENCE

The ratio of sales to total assets was at the highest during 2008-09 since the sales was at the highest during that period.

V_3 = EBIT/ EQUITY

Year	EBIT(Rs)	Equity (Rs)	V_3 = EBIT/ Equity
2007-08	16642092.86	9469372.00	1.76
2008-09	6670745.79	13065872.00	0.51
2009-10	8090471.44	18785872.00	0.43
2010-11	9674148.81	17519000.00	0.55
2011-12	40146898.26	16012000.00	2.51



INTERPRETATION

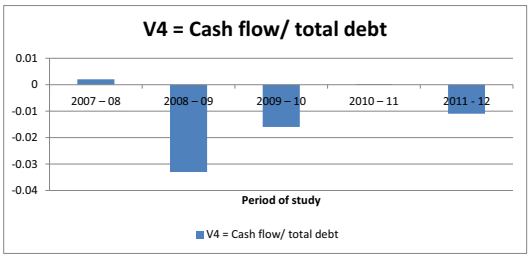
- EBIT to equity ratio ranged from 1.76 in 2007-08 to 2.51 in 2011-12.
- The ratio came down to 0.431 in 2009-10 when the equity increased to Rs. 1.8Crores from Rs. 1.3Crores.
- The ratio reached the highest value of 2.51 in 2011-12 when the equity decreased by about 8.6% from the previous year.

INFERENCE

The ratio of EBIT to equity experienced a decreasing trend during the year 2008-11 and thereafter the value during 2011-12 to increase in the Earnings before interest and taxes.

V_4 = CASH FLOW/ TOTAL DEBT

Year	Cash flow (Rs)	Total debt (Rs)	V_4 = Cash flow/ Total debt
2007-08	129354.14	64677070	0.002
2008-09	-2935234.89	88946511.82	-0.033
2009-10	-1554199.46	97137466.25	-0.016
2010-11	23290.85	116454250	0.0002
2011-12	-2003275.71	182115973.60	-0.011



INTERPRETATION

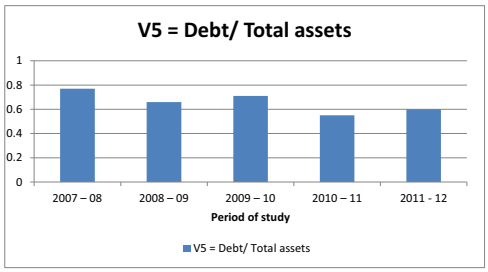
- The above table and chart showed the ratio of cash flow to total debt for the entire study period.
- During the years, 2008-09, 2009-10 and 2011-12, the company experiences a negative trend in the ratio. This is because the net cash flow during these periods was negative.

INFERENCE

The ratio has experienced a negative as well as fluctuating trend due to decrease in cash flows and increase in debt during the study period.

V_5 = DEBT/ TOTAL ASSETS

Year	Debt (Rs)	Total assets(Rs)	V_5=Debt/ Total assets
2007-08	49367522.05	64113665.06	0.77
2008-09	58475318.88	88598968.85	0.66
2009-10	66820335.49	94113711.96	0.71
2010-11	62416778.33	113485051.54	0.55
2011-12	105365922.30	175609870.57	0.60



INTERPRETATION

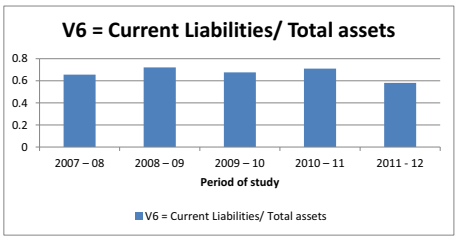
- The ratio of debt to total assets showed a fluctuating trend over the study period and the values ranged from 0.5575 in 2010-11 to 0.7701 in 2007-08.
- The ratio has a maximum value of 0.7701 in 2007-08, where the debt is maximum and the total asset acquired by the company is lowest during the study period.
- The ratio has a minimum value during 2010-11 when the value of total assets improved by 0.21 times to that in the previous year.

INFERENCE

The ratio of debt to total asset increases when the debt increases and decreases when the total asset increases.

V_6 = CURRENT LIABILITIES/ TOTAL ASSETS

Years	Current Liabilities (Rs)	Total assets(Rs)	V_6 = Current liabilities/ Total assets
2007-08	42048150.86	64113665.06	0.655
2008-09	63883904.69	88598968.85	0.721
2009-10	63665855.79	94113711.96	0.676
2010-11	80636198.52	113485051.54	0.710
2011-12	102135208.87	175609870.57	0.581



INTERPRETATION

- The above table and chart gives the ratio of current liabilities to total assets during the entire study period.
- The ratio showed a continuously varying trend during the study period and rages from 0.5816 in 2011-12 to 0.7210 in 2008-08.
- Due to variation in the current liabilities and increase in the total assets, the ratio is fluctuating over the years.

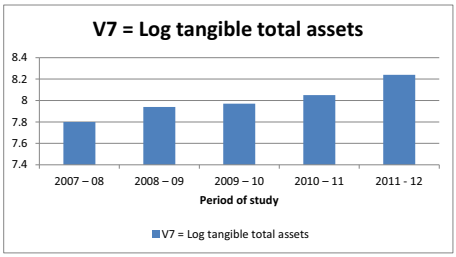
- During the year 2008-09, the ratio of current liabilities to total assets is the highest because the current liabilities take the highest value during that period.

INFERENCE

The ratio of current liabilities to total assets shows how much the current liabilities can be met out of the total assets of the company.

V_7 = Log TANGIBLE TOTAL ASSETS

Year	Tangible total assets (Rs)	V_7 = Log tangible total assets
2007-08	64063665.06	7.80
2008-09	88548968.85	7.94
2009-10	94063711.96	7.97
2010-11	113435051.50	8.05
2011-12	175559870.00	8.24



INTERPRETATION

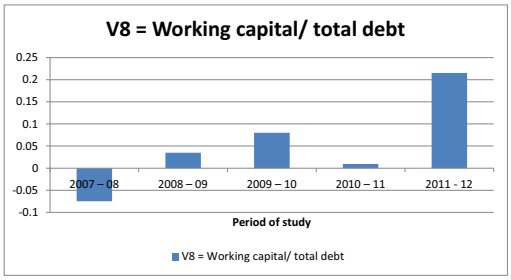
- The factor V_7 = Log tangible total assets, shows a increasing trend throughout the entire study period.
- The value ranged from 7.80 in 2007-08 to 8.24 in 2011-12.

INFERENCE

- The increase in the tangible total assets of the company is due to the increase in the cost of purchase of machineries.

V_8 = WORKING CAPITAL/ TOTAL DEBT

Year	Working Capital(Rs)	Total debt(Rs)	Working capital/ total debt
2007-08	-4826527.93	64113665.06	-0.075
2008-09	3131927.51	88598968.85	0.035
2009-10	7603808.52	94113711.96	0.080
2010-11	1080698.48	113485051.54	0.0095
2011-12	37822529.30	175609870.57	0.2153



INTERPRETATION

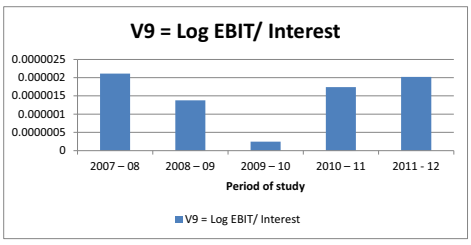
- The above table and chart gives the ratio of working capital to total debt for the entire study period.
- The ratio ranged from -0.075 from 2007-08 to 0.2153 in 2011-12.
- In the year 2007-08, the ratio is negative because the current liabilities were higher than the current assets of the company.
- Due to decrease in total debt of the company, the ratio has reached a maximum value in 2011-12.

INFERENCE

This ratio gives the contribution of total debt to the working capital of the company.

V_9 = Log EBIT/ INTEREST

Year	EBIT (Rs)	Interest(Rs)	V_9 = Log EBIT/ Interest
2007-08	16642092.86	4942000	$2.11*10^{-6}$
2008-09	6670745.79	27877000	$1.38*10^{-6}$
2009-10	8090471.44	4036000	$2.47*10^{-7}$
2010-11	9674148.81	3763000	$1.739*10^{-6}$
2011-12	40146898.26	3716000	$2.02*10^{-6}$



INTERPRETATION

- The ratio Log EBIT/ Interest shows a fluctuating trend during the period of study.
- The ratio is at its highest during the initial and latter period of the study. It was at its lowest during the year 2009-10.

INFERENCE

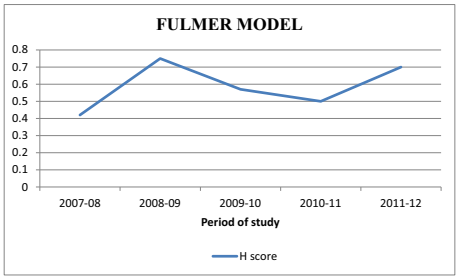
The increase in EBIT reflects in the increase in the ratio which is caused by changes in sales and gross profit.

Table 4.5

Table showing the long term solvency position of MM Engineers for the study period using Fulmer H-score model

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	H
2007-08	0.00080	2.45	1.76	0.002	0.77	0.655	7.80	-0.075	$2.11*10^{-6}$	0.42
2008-09	0.0027	2.89	0.51	-0.033	0.66	0.721	7.94	0.035	$1.38*10^{-6}$	0.75
2009-10	0.0070	2.04	0.43	-0.016	0.71	0.676	7.97	0.080	$2.47*10^{-7}$	0.57
2010-11	-0.0165	1.87	0.55	0.0002	0.55	0.710	8.05	0.0095	$1.739*10^{-6}$	0.50
2011-12	-0.0106	1.93	2.51	-0.011	0.60	0.581	8.24	0.2153	$2.02*10^{-6}$	0.70

Figure: Chart showing H score for 2007-12



INTERPRETATION

The above table and chart shows the H-score for the entire study period. It is found that for all the period the H-score value were above zero.

Though the company's working capital was negative in the year 2007-08, the H-score is higher than the benchmark. The company was able to have the H-score above zero throughout the study period even though the retained earnings during the latter period of study remained in the negative trend. The sales has increased 1.16 times in 2011-12 to that in 2007-08.

INFERENCE

The Fulmer model indicates the corporate solvency of the firm. A score of 0 is considered the benchmark. A firm scoring below the benchmark is termed as a 'failed' firm. The company has a score of above the 0 benchmark throughout the study period.

4.6 COMPARATIVE BALANCE SHEET – LIABILITIES

Particulars	2008 – 09		2009 - 10		2010 – 11		2011 – 12	
	Increase/ Decrease		Increase/ Decrease		Increase/ Decrease		Increase/ Decrease	
	Amount	%	Amount	%	Amount	%	Amount	%
CAPITAL ACCOUNT								
Reserves & surplus	192537.38	374.2	612714.39	1191.12	35415602	68.84	45576404	886.01
Share Capital	-	-	3000000	33.33	3000000	33.33	3000000	33.33
Share Capital Advances	3596500	766.2	6316500	134.5	5049628	1075.82	3542628	754.75
LOANS								
Bank OD A/c	3015877.58	99.42	5943860.58	195.9	6466589.58	213.17	6952256.58	229.18
Secured loans	-4154797	-43.68	-7490165	-78.75	-8671576	-91.17	-7661573	-80.55
CURRENT LIABILITIES								
Other Liabilities	-202475	-25.49	-	-	-	-	-	-
Duties & taxes	1186483.10	35.82	564244.1	17.03	4344043.10	131.15	491350.10	14.83
Provisions	1695322	153.08	1832801.91	165.5	1258826.91	113.67	1092454.91	98.64
Sundry Creditors	11004039.7	29.81	19357595.74	52.55	16102090.3	43.71	57659794.9	156.54
Gods A/c	-	-	29	5.07	29	5.07	29	5.07

Source: Balance sheet of MM Engineers Private Limited, Coimbatore

INTERPRETATION

The proportion of reserves and surplus was at its highest during the year 2009-10 as compared to the reserves and surplus in 2007-08. There was a drastic increase in the ratio of sundry creditors and bank O/Ds in 2011-12. The company has maintained a good sum of share capital in order to meet the contingencies.

4.7COMPARATIVE BALANCE SHEET – ASSETS

Particulars	2008 – 09		2009 - 10		2010 – 11		2011 – 12	
	Increase/Decrease		Increase/Decrease		Increase/Decrease		Increase/Decrease	
	Amount	%	Amount	%	Amount	%	Amount	%
FIXED ASSETS								
Buildings	4976011	69.96	4976011	69.96	5557310	78.14	7450674	104.76
Electricals	-2767	-20.86	-2767	-20.86	-6689	-50.44	-6689	-50.44
Furniture	260700	1020.0	260700	1020.08	166453	651.3	195003	763.01
Office Equipments	221916	97.10	271836	118.94	158455.30	69.33	179455.30	78.52
Plant & Machinery	92932	4.27	414616	19.09	-510565	-23.5	2567310	118.22
Tools	21859	45.69	21859	45.69	8180	17.09	8180	17.09
Vehicles	-64121	-3.6	-64121	-3.6	-225746	-12.70	1486600	83.64
Computer	-47177	-6.7	291192	41.38	277352	39.41	1033034	146.83
INVESTMENTS AND DEPOSITS								
Fixed deposits	-3517395	-46.9	-397748	-5.30	6702252	89.39	3231944.65	43.10
CURRENT ASSETS								
Advance income tax	-	-	929702	1322.5	-	-	1229702	1749.27
Closing stock	-6175116	-51.4	-5490482	-45.7	13348886	111.1	52620150	438.01
Deposits	103000	42.21	545695.66	223.6	199495.66	81.7	149265.66	61.17
Loans & Advances	3305396.09	103.8	367787.02	-11.5	-474753	-14.9	-2304549.52	-72.43
Sundry Debtors	32614346.49	165.6	36527276	185.5	28802240	146.2	48986889.70	248.82
Cash-in-hand	-4950	-46.56	15260	143.5	7472	70.2	7566	71.17
Bank Accounts	85096.69	8.15	1438670.23	137.7	1993478	190.9	475775.37	45.56
Deferred tax assets	-63266	-6.51	24785	2.55	71177	7.33	71177	7.33

Source: Balance sheet of MM Engineers Private Limited, Coimbatore

INTERPRETATION

The above tables 4.7 shows the comparative balance sheet of the company. The fixed asset of the company was in the increasing trend because the company was involved in buying assets. The investment was more during the year 2010-11 and 2011-12. The current assets also had a sharp increase, which was contributed more by the closing stock as the company had more inventories. During the period of study the company has made most of credit sales.

CHAPTER 5

FINDINGS, SUGGESTIONS AND CONCLUSIONS

5.1 FINDINGS

- There existed a negative working capital in the company in the year 2007-08. The proportion of share capital was highest during 2007-08. There were negative reserves during 2010-11 and 2011-12. The share of debt reduced during the latter period of study.
- The total assets improved considerably during the period of study, which is contributed by increase in the current assets. The company's has increased during the latter period of study.
- The debt-equity ratio was at its highest in 2007-08 because the company has generated excess funds from the outsiders and became liable to pay the debt.
- The proprietary ratio was at the highest during 2011-12, because the company has started making investments from its own funds rather than from outsiders.
- The solvency ratio was at the lowest during 2010-11, since the company was able to pay off its debts from its assets.
- The fixed asset ratio was considerable, since the long term funds for the company was generated by the working capital itself rather than from the fixed assets.
- The company has the highest interest coverage ratio in 2011-12, which shows that the company has earned enough profits to pay off the fixed interest charges.
- In the year, the company's working capital was on the negative trend, since the current liabilities exceeded the current assets.
- Since the company's liability is high, the company could not built any reserves and therefore in the latter period of study, the ratio of retained earnings to total assets experienced a negative trend.
- The higher the profits the higher the EBIT to total assets ratio, i.e; the company can meet its debts with the profits earned.

- The higher the shareholders' funds the higher the net worth to total liabilities ratio,i.e; the proportion of shareholders funds in the total liabilities of the company.
- The higher the sales the higher the sales to total assets ratio. It determines the contribution of sales in building up the assets of the company.
- The Z-score is a long-term solvency prediction model. A score of 2.675 indicates the benchmark. The firm scoring above the benchmark is considered financially sound. The firm which scores below the benchmark is considered unstable and may lead to bankruptcy.
- During the period of study, the company has posted a score of less than 2.675 during the years 2009-10 and 2010-11, and therefore the firm is considered unstable during that period.
- Another type of solvency prediction model is fulmer model. It has a higher degree of accuracy than the z-score model. In fulmer model, H score is used. The benchmark is considered as zero. A firm scoring below the benchmark is termed as failed.
- During the period of study, the company posted a score above and therefore the company is termed as stable.

5.2 SUGGESTIONS

- The company should improve upon the proportion of its reserves and surplus. So that the company can at least use it to pay off its short term debts.
- The company should take steps to have its working capital in the positive trend since in the initial period of study, the working capital was Rs. - 4826527.93
- There is notable increase in sales but there is slight effect on profit. During the period of study, the sales increased by 116.38% in 2011-12 as compared to 2007-08 whereas profit had a meagre increase of 296%.
- During the study period, the company reached the verge of bankruptcy in accordance with Z score, which should be avoided. In the year, 2009-10 and 2010-11, the company's Z-score was much below the benchmark 2.675. Therefore, funds are to be managed effectively.
- According to the Fulmer's H-score model, the H-score showed that the company is stable which should be maintained by the company in its operations. During the entire study period, H-score was above the benchmark which shows the company is in stable state
- The increasing in percentage of debt (156.54%) over the study period causes hike in interest, the operating profit can be increased by improving operational efficiency.

5.3 CONCLUSION

The study deals with the evaluating long term solvency and predicting financial distress using Altman's Z-score model and Fulmer model with reference to MM Engineers. This analytical study is conducted with five years financial data. The common size analysis techniques for both assets and liabilities of the company were carried out and the composition and proportion of the various ingredients of assets and liabilities were determined. The comparative analysis of the balance sheet of the company during the study period 2007-12 was carried out and determined the variations in the various components of the balance sheet with reference to a particular period. The company was in a stable condition during the period of study and is evident from the Fulmer bankruptcy model.

5.4 FURTHER SCOPE OF STUDY

The study covers only the quantitative aspects of the company, wherein the study can be extended to cover the qualitative aspects also.

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Annexure-1

Balance sheet of MM Engineers Private Limited for the FY 2007-08

Liabilities			Assets		
Capital Account		9520811.78	Fixed assets		12129430.65
Reserves & surplus	51439.78		Buildings	7111892.68	
Share capital	9000000.00		Electricals	13259.74	
Share capital advances	469372.00		Furniture	25556.77	
Loans(Liability)		12544134.42	Office Equipments	228542.31	
Bank O/D A/c	3033410.42		Plant and Machinery	2117503.12	
Secured loans	9510724.00		Tools	47838.47	
Current Liabilities		42048150.86	Vehicles	1777299.50	
Other Liabilities	794296.00		Computer	703538.06	
Duties & Taxes	3312195.17		Goodwill A/c	50000	
Provisions	1107425.00		Investments & Deposits		7511748.00
Sundry Creditors	36833663.69		Fixed Deposits DB	7497748.00	
Gods A/c	571.00		Terra Agro Shares	14000	
Profit & Loss A/c		568.00	Current Assets		37221622.93
Opening Balance	10260922.72		Advance Income Tax	70298.00	
Current Period	10260354.72		Closing Stock	12013317.00	
Less: Transferred			Deposits	244015.34	
			Loans&Advances	3181542.02	
			Sundry Debtors	19687165.11	
			Cash-in-hand	10630.00	
			Bank Accounts	1044095.77	
			Deferred Tax Assets	970559.69	
			Misc. Expenses		7250863.48
			Profit & Loss(Dr)	7250863.48	
Total		64113665.06	Total		64113665.06

Annexure-2

Balance sheet of MM Engineers Private Limited for the FY 2008-09

Liabilities			Assets		
Capital Account		13309849.16	Fixed assets		17588783.65
Reserves & surplus	243977.16		Buildings	12087903.68	
Share capital	9000000.00		Electricals	10492.74	
Share capital advances	4065872.00		Furniture	286256.77	
Loans(Liability)		11405215.00	Office Equipments	450458.31	
Bank O/D A/c	6049288.00		Plant and Machinery	2264435.12	
Secured loans	5355927.00		Tools	69697.47	
Current Liabilities		63883904.69	Vehicles	1713178.50	
Other Liabilities	591821.00		Computer	656361.06	
Duties & Taxes	4498678.27		Goodwill A/c	50000.00	
Provisions	2802747.00		Investments & Deposits		3994353.00
Sundry Creditors	47837703.44		Fixed Deposits DB	3980353.00	
Advance from customers	8152383.98		Terra Agro Shares	14000	
Gods A/c	571.00		Current Assets		67015832.20
Profit & Loss A/c			Closing Stock	5838201.00	
Opening Balance			Deposits	347015.34	
Current Period			Loans&Advances	6486938.11	
Less: Transferred			Sundry Debtors	52301511.60	
			Cash-in-hand	5680.00	
			Bank Accounts	1129192.46	
			Deferred Tax Assets	907293.69	
			Misc. Expenses		
			Profit & Loss(Dr)		
Total		88598968.85	Total		88598968.85

Annexure-3

Balance sheet of MM Engineers Private Limited for the FY 2009-10

Liabilities			Assets		
Capital Account		19450026.17	Fixed assets		15730047.65
Reserves & surplus	664154.17		Buildings	112087903.68	
Share capital	12000000		Electricals	10492.74	
Share capital advances	6785872.00		Furniture	286256.77	
Loans(Liability)		8977271.00	Office Equipments	500378.31	
Bank O/D A/c	8977271.00		Plant and Machinery	2586119.12	
Secured loans	2020559.00		Tools	69697.47	
Current Liabilities		63665855.79	Vehicles	1713178.50	
Duties & Taxes	3876439.27		Goodwill A/c	50000.00	
Provisions	2940226.91		Investments & Deposits		7114000.00
Sundry Creditors	56191259.43		Fixed Deposits DB	7100000.00	
Gods A/c	600.00		Terra Agro Shares	14000.00	
Profit & Loss A/c			Current Assets		71269664.31
Opening Balance			Advance Tax	1000000.00	
Current Period	7351826.01		Closing Stock	6522835.00	
Less: Transferred	7351826.01		Deposits	789711.00	
			Loans&Advances	2813755.00	
			Sundry Debtors	56214441.62	
			Cash-in-hand	25890.00	
			Bank Accounts	2482766.00	
			Deferred Tax Assets	995344.69	
			TDS Receivables	424921.00	
			Misc. Expenses		
Total		94113711.96	Total		94113711.96

Annexure-4

Balance sheet of MM Engineers Private Limited for the FY 2010-11

Liabilities			Assets		
Capital Account		15644263.17	Fixed assets		17554153.95
Reserves & surplus	-1874736.83		Buildings	12669202.68	
Share capital	12000000.00		Electricals	6570.74	
Share capital advances	5519000.00		Furniture	192009.77	
Loans(Liability)		10339148.00	Office Equipments	386997.61	
Bank O/D A/c	9500000.00		Plant and Machinery	1660938.12	
Secured loans	839148.00		Tools	56018.47	
Current Liabilities		80636198.52	Vehicles	1551553.50	
Advance from customers	17677354.35		Computer	980863.06	
Duties & Taxes	7656238.27		Goodwill A/c	50000.00	
Provisions	2366251.91		Investments & Deposits		14214000.00
Sundry Creditors	52935753.99		Fixed Deposits DB	14200000.00	
Gods A/c	600.00		Terra Agro Shares	14000.00	
Profit & Loss A/c		6865441.85	Current Assets		81716897.59
Opening Balance			TDS Receivables	550583.00	
Current Period	6865441.85		Closing Stock	25362203.00	
Less: Transferred			Deposits	443511.00	
			Loans&Advances	2706788.50	
			Sundry Debtors	48489405.55	
			Cash-in-hand	18102.00	
			Bank Accounts	337573.85	
			Deferred Tax Assets	1041736.69	
			Misc. Expenses		
Total		113485051.54	Total		113485051.54

Annexure-5

Balance sheet of MM Engineers Private Limited for the FY 2011-12

Liabilities			Assets		
Capital Account		14137263.17	Fixed assets		24408439.78
Reserves & surplus	-1874736.83		Buildings	14562566.68	
Share capital	12000000.00		Electricals	6570.74	
Share capital advances	4012000.00		Furniture	220559.77	
Loans(Liability)		11834818.00	Office Equipments	407997.61	
Bank O/D A/c	9985667.00		Plant and Machinery	4684813.12	
Secured loans	1849151.00		Tools	56018.47	
Current Liabilities		102135208.87	Vehicles	3263900.33	
Advance from customers	1637725.01		Computer	1736572.06	
Duties & Taxes	3803545.27		Goodwill A/c	50000.00	
Provisions	2199879.91		Moped Unit II 0577	29279.00	
Sundry Creditors	94493458.68		Investments & Deposits		11243692.65
Gods A/c	600.00		Fixed Deposits DB	10729692.65	
Profit & Loss A/c		47502580.53	Terra Agro Shares	14000.00	
Opening Balance	6865441.85		FD-MD	500000.00	
Current Period	40637138.68		Current Assets		139957738.14
			Advance Tax	1300000.00	
			Closing Stock	64633467.00	
			Deposits	393281.00	
			Loans&Advances	876992.50	
			Sundry Debtors	68674054.81	
			Cash-in-hand	18196.00	
			Bank Accounts	1519871.14	
			Deferred Tax Assets	1041736.69	
			TDS Receivables	1300821.00	
			VAT-Capital Goods	199318.00	
Total		175609870.57	Total		175609870.57