

Analysis of Financial Distress and its Determinants in Selected SMEs in Wolaita Zone

Ephrem G. Selassie¹ and Ephrem G. Selassie²

¹ Wolaita Sodo University

Received: 8 December 2015 Accepted: 5 January 2016 Published: 15 January 2016

Abstract

The development of SMEs is considered as one of vital determinants of the growth of Ethiopian economy, and for secure equitable distribution of the benefits of the economic growth. However, SMEs in the country are leveled as not performing well and falling short of yielding the much anticipated contribution for the growth of the economy as they are expected. This study is conducted to analyze financial distress level of SMEs in Wolaita Zone and indentify those factors affecting their financial health. In this study 30 firms form three sectors are selected as samples selecting ten samples from each of manufacturing, service and trade sector using purposive sampling method. Accordingly, the results of Altman's Zeta Score Model analysis indicate that three of the ten selected firms in the service sectors are found to be financially distressed, but none of the sampled SMEs in the sector are below the bankruptcy point. In manufacturing sector, one of the ten selected SMEs is found with the Zeta score of below the bankruptcy line and all of the rest of the sampled SMEs are found to be under financial distress though their Zeta score is above the bankruptcy point.

Index terms— manufacturing, service and trade sector.

1 Introduction

thiopian government is giving due attention for the growth and development of Small and Medium Enterprises both in quantity and quality as they are believed to play very important role in accelerating the country's much anticipated Growth and Transformation Plan by boosting national income and wealth and promoting private sector development. This is also well articulated in the Growth and Transformation Plan which prioritizes and identifies the development of micro and small businesses as catalyst for promoting industrial development. SMEs are believed to be main derives of economic growth in the countries urban areas. They create employment and income generation opportunity for women and youth in urban areas by accommodating large number of young and women population. This in turn makes the economic growth not only sustainable but promotes fair distribution of wealth among the citizens by accommodating the most venerable group of the population such as the youth and the women at large. Thus studies on SMEs are important because SMEs are viewed as the backbone of the economy of many countries all over the world since they are the incubators of employment, innovation and growth (Craig, Jackson and Thomson 2004).

The growth of Small and medium Enterprises however has been challenged by various problems of which lack of fund is found to the significant one (Alemayehu 2007). Small and Medium-sized Enterprises (SMEs), particularly small firms, have historically faced significant difficulties in accessing funding due to the lack of credible information available to potential providers of funds (Ang, 1991). These enterprises are usually found to be informational y more obscure the bigger business organizations since they often have no certified audited financial statements to provide credible financial information on a regular basis (IBD). Difficulties in accessing funding are especially relevant for small firms as they have low assets with which to secure funding. Furthermore it has been difficult for creditors to measure the credit worthiness of these firms, as they have no concrete

9 OPERATING EARNINGS /TOTAL ASSETS (X3):

financial information. As a result studies in the area of financial distress conditions of SMEs are very much rare due to unavailability of financial data. Yet it is very important and reasonable to measure the financial distress conditions for SMEs as they are found to be the key drivers of the nation's economic growth.

2 a) Objectives of the study

Therefore the main objective of the study is to measure the financial distress conditions, which is the financial healthiness of Small and Medium Enterprises in Wolaita Zone.

3 b) Significance of the study

Currently, there is an information vacuum on the financial health status of SMES in the study area. The study will strengthen information need in the sector on financial health status and provide a foundation for monitoring and assessing the level of intervention needed in this era of the Nation's much anticipated transformation of the sector.

4 II.

5 Methodology

were collected for a year 2015. A sample of 30 small scale businesses was purposively selected for the study. The sampled firms were randomly selected from the list of businesses incorporated as private limited liability companies with the Trade and Industry Department of the Zone. The sample of ten firms was taken from each of three sectors such as service sector, trade and manufacturing. The choice of private limited liability businesses was to ease the problem of data collection since this category of enterprises are required by law to prepare annual financial reports for the purpose of rendering annual returns. Thus data were derived from the financial statements (Balance sheets and income statements) of sampled business enterprises. The financial data extracted include working capital, sales, total assets, earnings before interest and tax, market value of equity and book value of total liability (debts). In order to use Altman's Z-score model in predicting financial health, Z-scores' were computed for each sampled firms for the year. Based on the computed Z-scores and using Altman's criterion, the businesses were then classified into financially healthy, unhealthy or cannot say (Grey).

6 III.

7 Model Specification

In this study the well known Altman's Z-score model, based on five financial ratios and a bankruptcy predictor model developed by (Teti et. al 2012) used firstly exclusively for small and medium-sized enterprise in Wolaita for the year of 2015 is applied the specified analytical technique for this study is the Altman's discriminant function model and is as follows: $Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$??(1)

Where: X_1 = Working capital/Total assets X_2 = Retained Earnings/Total assets X_3 = Earnings /Total assets X_4 = Equity/Book value of total debt X_5 = Sales/Total assets Z = Overall Index

Working Capital/Total Assets (X_1): The Working capital/Total assets ratio is a measure of the net liquid assets of the SMEs relative to the total capitalization. Working capital is defined as the difference between current assets and current liabilities (Sulphey, M. M., & Nisa, S. 2013). However for the SMEs under the study cash will be used as a proxy for working capital as they have only cash in their current assets section, and do not have current liabilities Ordinarily, an SME experiencing consistent operating losses will have shrinking current assets in relation to total assets.

8 Retained Earnings/Total Assets (X_2):

This is a measure of cumulative profitability over time. The age of a firm is implicitly considered in this ratio. For example, a relatively young firm will probably show a low RE/TA ratio because it has not had time to build up its cumulative profits (Aremu, M. A., & Adeyemi, S. L. 2011). Therefore, it may be argued that the young firm is somewhat discriminated against in this analysis, and its chance of being classified as bankrupt is relatively higher than another, older firm, ceteris paribus. The incidence of failure is much higher in a firm's earlier years.

9 Operating Earnings /Total Assets (X_3):

This ratio is calculated by dividing the total assets of a firm into its earnings before interest and tax reductions. It is a measure of the true productivity of the firm's assets, abstracting from any tax or leverage factors. Since a firm's ultimate existence is based on the earning power of its assets, this ratio appears to be particularly appropriate for studies dealing with corporate insolvency/failure. Furthermore, insolvency in a bankruptcy sense occurs when the total liabilities exceed a fair valuation of the firm's assets with value determined by the earning power of the assets (Teti et. al (2012)).

10 Book Value of Equity/Book Value of Total Debt (X4):

The measure shows how much the firm's assets can decline in value before the liabilities exceed the assets and the firm becomes insolvent (Teti et. al (2012). Sales/Total Assets (X5): The capital-turnover ratio is a standard financial ratio illustrating the sales generating ability of the firm's assets. It is one measure of management's capability in dealing with competitive conditions (Sulphey, M. M., & Nisa, S. 2013).

In this model Altman stated Z' Score which is less than 1.21 as financially distressed zone (Zone I) and is Z' score is greater than 2.90 it is called Zone II which is financially not distressed zone. The result of the Z' Score which is in between 1.23 to 2.90 is categorized as a "gray area". A "gray area" as defined by (ALTMAN E. 1983) is an area where there is no clear line between bankruptcy and non-bankruptcy. It is in deemed undesirable condition of financial health of the firms. It is characterized by distress than healthiness.

IV.

11 Data Analysis

In this section the results of the analysis made to determine the financial health position of selected SMEs is presented. To achieve the objective of the study, which is to evaluate financial distress (health) condition of selected SMEs, the data collected are first analyzed with the use of five accounting ratios which are part of the Z'-score analysis. These accounting ratios are then combined into a single measure of Altman's Zscore with the help of Multiple Discriminate Analysis (MDA). The result of the analysis for each sector under study is presented as follows.

12 i. SMEs in Service sector

The following table indicates the Z-score of selected SMEs Wolaita zone in service sector in which is calculated based on the (Altman1991) Model. As it can be observed from the above table, the only three of the selected ten small businesses in service sector are found to be in "gray" of financial health condition indicator. The gray area is undesirable area as it amounts to financial distress. The rest of the firms under study are financially healthy. The highest zeta score is 3.45 and the lowest is 2.35. None of the selected firms is found under the bankruptcy zone. However there are three firms under gray area, which is between the Zeta scores of 1.21 and 2.90, which in turn indicates that those firms are under financial distress. The manufacturing sector in Ethiopia recently is given a due attention as the government is working to bring structural transformation in the economy from agrarian based to manufacturing based. The strategic pillars of the GTP II (Growth and Transformation Plan) related to manufacturing include (1) developing light and small manufacturing enterprises that are globally competent and leading in Africa (2) establishing a foundation for further growth of the strategic heavy industries which ultimately enable Ethiopia to become an industrialized country by 2025 (source: GTP II, PP 38). This is, however, seems an over ambitious plan as reports are indicating that despite the sector level growth, the much needed structural transformation has never even showed a sign of change. The industrial base of the country has remained low contributing only 12-14% to GDP of which the medium and large factories as well as the light and small manufacturing shared respectively 4% and 1.2% throughout the past decade. In light of the above national strategy the performance and growth of SMEs which are have been expected to be graduated and joined the medium and large scale being hampered by various factors. That is what the financial health conditions analysis of some selected manufacturing firms on table below shows.

The following table indicates the Z-score of selected SMEs Wolaita zone in manufacturing sector in which is calculated based on the (Altman1991) Model. As it can be observed from the above table one of the sampled firms is already below the bankruptcy threshold with the Zeta score of 1.13 which indicates that it is soon going to be bankrupt as the Altman model indicates. It is also least Z-score of all sampled firms. The maximum Z-score is 1.93. This indicates that the remaining firms, though they are above the bankruptcy threshold, all of them are within the area identified as "gray" area in which one cannot exactly determine the exact nature of financial health of the firm. This is not recommendable status for the firms. Therefore, they are not yet free from bankruptcy threat. This indicates that they are financially distressed. The above figure indicates that factors affecting financial health of the firms are observed to be fluctuating among sampled firms. Sales to total assets ratio is the one which significantly affects the financial healthiness of the firms. Particularly for the firm which has the lowest Zeta score, sales to assets ratio is the lowest as it can be observed from the table above. Retained earnings to total assets ration appears to look not changing in the case of most of the selected manufacturing firms. Therefore the firms need to work on increasing sales volumes in ordered to get out out of financial distress.

iii.

13 SMEs in Trade Sector

Trade is one of the prominent sectors in the economy of Ethiopia (Tesfayenesh, 2016). The result of the analysis indicates that SMEs in the sector are highly performing. The following table indicates the Altman Zeta score of selected ten SMEs in Wolaita Zone. The above data indicates that all the sampled firms are way above the bankruptcy threshold, which is 1.23. The individual Zeta score of the firms is also very high. The maximum score is 3.68 whereas the minimum score is 2.59. However, there are still firms that are found in gray area. Four of the ten firms are found in the gray area. Firms which are found gray area need to work hard to join the healthy area

which is indicated by the Zeta score of above 2.9. It can be understood from this fact that all the selected firms are financially healthy and way far from bankruptcy threat. The figure above indicates how the variables are affecting the Zeta scores of the firms. Sales ratio, working capital and EBIT are observed to be playing greater role in the financial healthiness of the selected firms in service sector. Accordingly, those forms which are under financial distress need to work on increasing Sales ratio, working capital and EBIT ratios.

V.

14 Conclusion

In this study 30 firms from three sectors are selected as samples selecting ten samples from each of manufacturing, service and trade sector using purposive sampling method. The purpose of the study was to determine the financial healthiness of the SMEs and to determine those firms under financial distress. Accordingly, the results of Altman's Zeta Score Model analysis indicate that three of the ten selected firms in the service sectors are found to be financially distressed, but none of the sampled SMEs in the sector are below the bankruptcy point. In manufacturing sector, one of the ten selected SMEs is found with the Zeta score of below the bankruptcy line and all of the rest of the sampled SMEs are found to be under financial distress though their Zeta score is above the bankruptcy point. On the other hand SMEs in the trade sector has shown preferably good results with high Zeta scores. However the three of the ten samples are found in the distress zone among the selected SMEs in the trade sector as well. Sales ratio, working capital and EBIT are found to be the major variables among the other variables in the model that affects the financial health of the SMEs. Therefore the SMEs under the financial distress are needed to work particularly on increasing their Sales ratio, working capital and EBIT ratios.

01

[Note: (Source: author competition)]

Figure 1: Table 01 :

firms, according Ratio/ Firms	WC/TA	RE/TA	EQT/TD	EBIT/TA	SAL/TA	Zeta Score	
F1	1.2687	1.0286	1.3852	1.1999	2.2740	2.3543	2016
F2 F3	1.3079	1.4487	1.5636	1.2080	2.9046	2.9965 3.4534	Year
	1.3795	1.0532	1.4210	1.3429	3.3705		
F4	1.3692	0.0920	2.7751	1.0163	2.3581	2.4711	
F5 F6 F7	1.4449	0.0388	1.3061	1.1404	3.1854	3.2500 3.0139	Volume
F8 F9 F10	1.4569	0.0799	2.0358	1.2301	2.9236	3.4135 3.0082	XVI Issue
	1.4627	1.0956	3.6042	1.2042	3.2577	3.0734 2.3695	VIII
	1.4613	1.0713	2.9745	1.2908	2.8727		Version I
	1.4268	1.0578	1.5895	1.2114	2.9847		
	1.3582	0.0960	0.4739	1.2452	2.3311		
1.5000						() C	
2.0000						WC/TA	Global
2.5000						RE/TA	Journal of
3.0000						EQT/TD	Manage-
3.5000						EBIT/TA	ment and
4.0000						SAL/TA zeta	Business
f1	f2	f3 f4	f5 f6	f7 f8 f9	f10	score	Research

Figure 2:

02

Ratio/ Firms	WC/TA	RE/TA	EQT/TD	EBIT/TA	SAL/TA	Zeta Score
F1	0.28090	0.03828	0.56534	1.30587	1.84093	1.86948
F2	0.29050	0.03352	0.82653	0.31788	1.85028	1.88157
F3	0.30194	0.05251	0.56145	0.20399	1.10747	1.13047
F4	0.23846	0.02527	0.58532	0.25692	1.54405	1.56658
F5	0.32052	0.06055	1.04120	0.12947	1.34615	1.38463
F6	0.33556	0.03712	1.12840	0.08022	1.56990	1.61059
F7	0.26087	0.05646	0.81479	0.18019	1.60894	1.63922
F8	0.46741	0.04005	0.50673	0.18112	1.76555	1.78777
F9	1.37222	1.06121	0.59780	1.71014	1.87620	1.93564
F10	0.39854	0.49633	0.65452	0.57630	1.80587	1.84086

(Source: author competition)

Figure 3: Table 02 :

03

Ratio/ Firms	WC/TA	RE/TA	EQT/TD	EBIT/TA	SAL/TA	Zeta Score
F1	1.3364	0.2697	1.5007	1.3299	2.5640	2.6387
F2	1.4001	0.2330	1.3836	1.1556	2.7073	2.7772
F3	1.4736	0.1276	3.3093	0.7792	2.9308	3.0612
F4	1.4814	0.0857	1.8014	0.5804	2.5937	2.6730
F5	1.4844	1.0742	1.1274	1.4003	2.8599	2.9355
F6	1.4885	0.0907	1.4066	1.5778	3.6125	3.6839
F7	1.4926	1.0189	5.0766	0.2816	2.9234	3.1219
F8	1.4941	1.1540	4.5129	0.5880	3.5773	3.7602
F9	1.4848	0.1172	4.1788	0.3978	3.3860	3.5423
F10	1.4763	0.1158	2.7817	0.4988	2.4818	2.5935

(Source: author competition)

Figure 4: Table 03 :

¹©2016 Global Journals Inc. (US)
²© 2016 Global Journals Inc. (US) 1

-
- [Saundra and Thornhill ()] , Lewis Saundra , Thornhill . *Business Research Methods* 2007. McGrewHill.
- [Fulmer et al. (1984)] ‘A bankruptcy classification model for small firms’. J G Fulmer , J E Moon , T A Gavin , J M Erwin . *Journal of Commercial Bank Lending* 1984. July. 11 p. .
- [Samuel ()] ‘Banking Crisis and Financial Stability in Nigeria’. Fadare O Samuel . *International Research Journal of Finance and Economics* 1450-2887 Issue 63. 2011.
- [Teti et al. ()] *Bankruptcy predictors during the financial crisis. A study of Italian SME’s*, E Teti , A Dell’acqua , M Brambilla . 2012. (33 p)
- [Simonoff ()] *classical linear regression model*, Simonoff . 2011.
- [Sahut et al. ()] ‘Determinants of Banking Distress and Merger as A Strategic Policy to Resolve Distress’. Jean Sahut , Median Michial , Mill . *Journal of Economice Modeling* 2011. p. .
- [Andualem and Baza ()] *Determinants of Financial Distress in Selected Beverage and Metal Industries in Ethiopia*, Uffa Andualem , Baza . 2011.
- [Purnanandam ()] *Do Banks Hedge in Response to the Financial Distress Costs?*, Amiyatosh Purnanandam . 2004. Ann Arbor, MI -48109. University of Michigan Business School
- [Theodossiou et al. ()] *Factors tha Affect the Dicission to Acquire A financially Distressed Firms in US*, Ioannis Theodossiou , Euan Phimister , Richard Upward . 1996. University of Macedonia
- [Bever ()] ‘Financial Ratio as predictore of Failure: Empericalresearch in Accounting’. W Bever . *Journal of Accounting Research* 1966. p. .
- [Altman ()] ‘Financial Ratio, Discrminant Analysis and Prediction of Corporate Banruptcy’. E Altman . *The Journal of Finance* 1968. (4) p. .
- [Altman ()] ‘Multidimensional Graphics and Bankruptcy Prediction: A Comment’. Edward I Altman . *Journal of Accounting Research* 1983. 21.
- [Skogsvik and Skogsvik ()] ‘On the choice based sample bias in probabilistic bankruptcy prediction’. Kenth Skogsvik , Sinta Skogsvik . *Investment Management and Financial Innovations* 2013. 10 (1) p. .
- [Ani and Ugwunta ()] ‘Predicting Corporate Business Failure in the Nigerian Manufacturing Industry’. W U Ani , D O Ugwunta . *European Journal of Business and Management* 2012. 4 (10) p. .
- [Brealey ()] *Principles of Corporate Finance*, R Brealey , Meyers . 2000. New York: MacGrewHills.
- [Aremu and Adeyemi ()] ‘Small and Medium Scale Enterprises as A Survival Strategy for Employment Generation in Nigeria’. M A Aremu , S L Adeyemi . *Journal of Sustainable Development* 2011. 4 (1) p. .
- [Sulphey and Nisa ()] ‘The Analytical Implication of Altman’s Z-score Analysis of BSE Listed Small CAP Companies’. M M Sulphey , S Nisa . *Journal of Commerce and Management Perspective* 2013. 2 (4) p. .
- [Chang-E ()] *The Causes and Salvation Ways of Financial Distress Companies’: An Empirical Research on the Listed Companies in China*, S Chang-E . 2006. Bejing University
- [Ramili ()] *THE EFFECT OF CORPORATE FINANCE AND RISK MANAGEMENT ON FINANCIAL DISTRESS*, Ishak Ramili . 2010. University of Tarumanagara
- [Alemayehu ()] *The Structure and Performance of Ethiopia’s Financial Sctore in the Pre and Post reform period*, Geda Alemayehu . 2007. Addis Ababa University
- [Trade and Gender in the Services Sector of Ethiopia: expert meeting on trade as a tool for the economic empowerment of women
‘Trade and Gender in the Services Sector of Ethiopia: expert meeting on trade as a tool for the economic empowerment of women’. *Tesfayenesh Lema Aregaw* 2016.