An Analysis of the Financial Health of Companies Listed Under Food Industries Sector in Muscat Securities Market

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Abstract

The present study is undertaken to analyze financial health of manufacturing companies listed under food industries in the Muscat Securities Market. In this paper, Altman's Z score is used to assess the financial health of 10 manufacturing companies out of 15 companies listed under food industries in the MSM. The study uses published financial reports of the companies on the MSM website for a five-year period from 2012-2016. Altman's Z score is a commonly used predictor of the risk of insolvency for companies. The results indicate that, out of the ten companies, four companies are completely safe and face no danger of insolvency in the near future. The others had variable records, with risk of insolvency for all or some of the years under reviews. The study concludes by identifying the principal factors responsible for putting companies at risk for insolvency.

Key words*: Financial health, Muscat securities market, Z score.*

1. Introduction

The financial health of a company is of great importance for the company as well as shareholders, creditors, banks and financial institutions, investors and all other parties related to a company. The financial statements prepared by the company are the source through which the two important factors of a company – profitability and financial soundness are assessed. Analysis and interpretation of income statement and position statement is necessary for the diagnosis of the profitability and financial soundness of the business.[1]

According to the Oman Market Report 2016, Oman is considered as one of the fastest growing markets for international suppliers to the food service industry. Agriculture, livestock and fisheries are considered the most important sectors of the food industry of Oman economy. The government is much focused on the modernization and development of the agricultural and fisheries sector. [2] According to a 2015 report in the Times of Oman, Oman in collaboration with Japan plans to invest $ 400 million in food and agro based

industries.[3] All this shows the importance of food industries in Oman. This calls for the need of knowing the financial health of these companies before making any investments in them.

An accurate interpretation of the financial statements is required which helps in decision making for the shareholders, creditors, bankers and the investors to form an opinion about the profitability and the overall financial position of the business.[4] So, to understand the financial stability of the companies Altman's Z score is used.

Predictability of the insolvency based on the ratios

As a result of an empirical research conducted by Edward. I. Altman, a model was developed to predict the insolvency of a firm. [5] Altman suggested that this model could predict the risk of insolvency as much as three reporting periods prior to the event. The Z score or overall index was computed based on the following:

$$Z = 0.012.X_1 + 0.014.X_2 + 0.33.X_3 + 0.006.X_4 + 0.999.X_5$$

Where X_1 = working capital/ Total assets

X_2 = Retained earnings / Total assets

X_3 = Earnings before interest and tax / Total assets

X_4 = Market value of equity / Book value of total debt.

X_5 = Net Sales / Total assets.

If Z is more than 2.99 – There is no danger of the insolvency.

I f Z is less than 1.81 –The company faces imminent insolvency

If Z is between 1.81 and 2.99 - The Company is in grey area and there is a danger of insolvency [6]

Oil crisis has brought a serious effect on the economy of the country. Many industries are affected due to this. This also calls for a detailed investigation about the financial health of the companies before any sort of investments are made in them. A detailed study was conducted on ten companies out of the fifteen listed companies in MSM under food industries. The ten companies chosen on the basis of random sampling were A'Saffa, Dofar Beverage and Food, Dofar Cattle Feed, Gulf Mushroom Products, National Biscuits, Oman Flour Mills , Oman refreshment, Salala Mills, Sohar Poultry and Sweets of Oman. The analysis considered the total assets, total liabilities, working capital, retained earnings, earnings before interest and tax, market value of equity and the sales revenue of these companies, pertaining to the income statement and the position statement for a period ranging from 2012-2016, all extracted from the financial reports of the companies filed with the MSM. This study is intended to be useful for the investors, shareholders, banks and financial institutions, creditors and other third parties. Moreover, it may also help the ministry of commerce and industry to take necessary steps to boost up this sector.

Objectives of the study

Based on the above rationale this paper aims at three objectives. The first objective is to assess the financial health of the companies under food industry sector listed in MSM. The second objective is to detect the possible reasons for the financial risks of these companies. In addition, to suggest necessary steps to overcome the financial risks of the companies.

2. Literature review

Khalid and Eqab (2011) studied the efficiency of financial ratios in prediction of bankruptcy of Jordanian listed companies. They used Altman's Z score .The study sample includes non-financial service and industrial companies for the years 1990-2006. The results from both the models were compared and the result was that the Altman's Z score model was 93% efficient in predicting the financial distress of the company. [7]

Hima Bindu and Subrahmanyam (2012) aimed at measuring the profitability, operating efficiency, financial efficiency and measurement of financial health of Dairy industry in Andhra Pradesh, India for a period of 2001 to 2011. Five companies were studied and analyzed using Altman's Z score out of which one company was found to bes in the bankruptcy zone while all others were safe. [8]

Poongavanam and Babu (2012) examined the financial health of BHEL, Ranipet for a period of 2005 to 2009 using Altman's Z score. The study revealed that the company is healthy and the financial viability is there. The researcher suggested the company to take necessary steps so that the Z score crosses a score of 3 so that the company is completely in a very strong safe zone. [9]

Nyamboga, Omwario, Muriuki, and Gongera (2014) examined the factors, which determine the corporate financial distress of 38 non-financial public firms listed in the Nairobi stock exchange. Correlation analysis for a three-year period was done using the Pearson product-moment correlation coefficient. Debt Service Coverage Ratio (DSCR) was used as a proxy for financial distress. The significance of the correlation coefficient was tested using Student t-test. The Altman Z score model is found to have significant ability to diagnose corporate financial distress though with a moderate correlation with DSCR, which is used as a proxy for corporate financial distress. [10]

Santhiyavalli and Abirami (2015) analyzed the financial health of selected Indian companies in the automobile industry for a period starting from 1999-2000 to 2013-14. Out of the five companies analyzed, four were in the safe zone with a Z score more than three; one was in the grey zone with a Z score ranging between 1.8-2.99 and none in the distress zone with a Z score below 1.8.[11]

Jaisheela (2015) analyzed the financial health of 27 leasing companies in India. The analysis was done using Altman's Z score. The results showed that of the 27 companies, 14 were in safe zone and 6 were falling in grey area which shows that they have to be alert and the remaining falling in the distress zone where they have a strong chance of becoming bankrupt in the coming years. [12]

Muvingi, Nkomo, Mazuruse and Mapungwana (2015) examined the performance of the two bankruptcy prediction models, the accounting ratio based model and the market based model. The study was conducted on the listed and the delisted companies in the Zimbabwe stock exchange for a period of three years 2010, 2011 and 2012. The study was conducted in three different stages, whereby in the first stage the Z score for the companies were found out, in the second stage the scores according to the market based model was found out and in the final stage, the two models were compared. They concluded that the Altman's Z score model was the more accurate model in predicting bankruptcy. [13]

Dr. Riyas Kalathinkal and Muhammad Imthiyaz Ahmed (2015) studied the financial health of Oman Cement Company. The study lays emphasis on the application of Altman Z Score Model for Oman Cement Company for a period of 2009-2013.The study revealed that Z scores calculated were more than 2.90, which is a clear indicator that the company is not affected by bankruptcy. Minimal ratio was in 2011 but still the company did not face bankruptcy. [14]

Liang and Pathak (2016) conducted a study to examine the relationship between the financial health and the corporate performance of listed manufacturing companies of South Korea and Taiwan, using Altman's Z Score to measure the former and Return on Equity for the latter. The analysis covered a period of 2010 – 2013. The study revealed that there was significant positive relationship between the financial health and the corporate performance of these companies. [15]

Shariq (2016) analyzed the financial health of Raysut cement company SAOG and its subsidiaries. It is used Multiple Discriminate Analysis and Altman's Z score. The study was conducted for a period starting from 2007 to 2014. It revealed that the company was having a very strong financial health, as the Z score obtained was more than the benchmark score of 2.99 except in some years of study. [16]

Mohan Kumar, Vasu and Narayana (2016) aimed at studying the liquidity and profitability position of the Steel authority of India. It was studied using correlation method. The financial position of the company for a period of 10 years starting from 2005 to 2015 was calculated using Altman's Z score. It was understood that the financial health of the company was safe but the Z score values were showing a decreasing trend. [17]

P. Chadha (2016) provides insight into the financial distress level in Kuwait by exploring 196 listed firms in Kuwait Stock Exchange from 2009-2014. The financial data required for the study were gathered from the published annual reports of the respective firms and the financial statements from the Kuwait Stock Exchange website. The Altman Z-score model used for analysis revealed that for the period 2009-2014, approximately 39.46% of the firms on average were safe; approximately 25.94% of the firms on average were distressed; approximately 15.90% of the firms on average were in a grey area; and approximately 18.71% firms on average had no available data. [18]

In summary, the literature reveals that Altman's Z score is a commonly used metric of the risk of insolvency for publicly listed firms. It is widely used to measure bankruptcy risk, as well as a predictor for other performance variables such as return on equity. In the next section, description regarding the calculation of Z score for the companies is included.

3. Method

The study used an inductive approach where the hypothesis is not being set. It is purely an analytical study. The data from the income statement and the position statement were collected from the MSM for 2012-2016. For all ten companies, the total assets, total liabilities, working capital, retained earnings; sales revenue, EBIT and market value of equity were collected. Using this information, Altman's score, popularly known as Z score, was calculated following the equation given above.

As intermediate steps to calculating, the Z score, the following accounting ratios were calculated, providing further insight into the financial health of the companies.

The ratios calculated were:

- **Working capital to total assets ratio,** which measures a company's ability to cover its short-term obligations. An increasing working capital to total assets ratio is a positive sign of improvement in company's liquidity over time, whereas a decreasing ratio is a negative sign indicating that the company is not having enough working capital relative to total liabilities. Insolvent firms generally have a negative working capital and that poses great danger because any cash coming into the

business will be utilized to pay off debts, which reduces the availability of funds to carry out day-to-day operations of the business.

- **Retained earnings to total assets ratio**, is calculated to assess the ability of the company to accumulate earnings relative to its total assets. Over time, the retained earnings to total assets ratio of the company should increase revealing that the company is successful in continually retaining the earnings. On the other hand, if it is showing a decreasing trend over the years then the company is not in a position to retain earnings, which is a negative sign. The retained earnings of a company is protection against losses but usually insolvent firms will not have this protection because they have accumulated losses.
- **Return on total assets ratio**, shows the earnings of the company before interest and tax against the total assets of the company. This ratio is an indicator of how effectively the company is able to generate the earnings by utilizing its assets before the obligations are paid off. Generally, insolvent firms will have a negative Return on total assets ratio.
- **Market value of equity to Book value of total debt**, measures how much the assets of the company may reduce in value but still leave the firm in a position to cover the debts. It indicates the extent to which the debt is covered.
- **Assets turnover ratio**, helps in understanding efficiency of the company is deploying its assets for generating revenue. A higher ratio shows that the company is performing well in deploying its assets for generating revenue. If the ratio is decreasing, it is not good sign.

4. Data analysis and interpretation

The ratios named above, as well as the Z score, for each company were calculated for the period 2012 to 2016 based on the audited financial statements of the companies. The Z scores calculated for different companies for 2012-2016 are provided in Table 1 below:

Table 1: Consolidated Z scores for ten companies, 2012-2016

Sl. No	Name of the Companies	2012	2013	2014	2015	2016
1	A'Saffa	6.79	11.34	8.59	9.92	8.95
2	Dofar Beverage and Food	2.59	2.21	2.26	3.06	2.88
3	Dofar Cattle Feed	1.06	0.94	0.50	0.91	0.92
4	Gulf Mushroom Products	1.84	3.67	3.55	2.90	1.64
5	National Biscuits	2.48	2.84	3.33	3.33	3.18
6	Oman Flour Mills	3.53	3.29	4.11	3.56	4.28
7	Oman refreshment	4.38	9.84	6.75	6.66	5.99
8	Salala Mills	2.44	3.26	1.58	2.90	2.06
9	Sohar Poultry	0.62	1.09	1.51	1.79	1.92
10	Sweets of Oman	3.94	3.59	4.32	5.23	3.66

Inference: The above table indicates that the Altman Z score calculated for the companies for a period of 2012-2016, are satisfactory except for Dofar Cattle Feed and Sohar Poultry, which are unsatisfactory throughout the years. Gulf Mushroom Products shows a sudden fall in the Z score in the year 2016, when

compared to the previous years and indicates the insolvency. Overall, other companies are in a safe zone according the Altman's Zscore.

Tables 2 to 6 provides other financial ratios for the 10 firms, over the same period.

Table 2: Working capital/ Total assets, 2012-2016

Company	2012	2013	2014	2015	2016
A'Saffa	0.25	0.33	0.29	0.29	0.29
Dofar Beverage and Food	0.07	0.06	0.03	0.03	0.07
Dofar Cattle Feed	0.02	-0.06	-0.08	-0.08	-0.02
Gulf Mushroom Products	0.14	0.15	0.13	0.13	0.02
National Biscuits	-0.01	0.04	0.12	0.12	0.24
Oman Flour Mills	0.57	0.54	0.62	0.62	0.62
Oman refreshment	0.36	0.38	0.27	0.27	0.15
Salala Mills	0.05	0.06	0.03	0.03	0.09
Sohar Poultry	-0.04	0.05	0.13	0.13	0.19
Sweets of Oman	0.33	0.31	0.35	0.35	0.47

Table 3: Retained earnings / Total assets, 2012-2016

Company	2012	2013	2014	2015	2016
A'Saffa	0.23	0.38	0.43	0.47	0.49
Dofar Beverage and Food	0	0.02	0.03	0.04	0.02
Dofar Cattle Feed	0.32	0.21	0.17	0.18	0.16
Gulf Mushroom Products	0.14	0.11	0.08	0.07	0.04
National Biscuits	0.12	0.18	0.27	0.33	0.36
Oman Flour Mills	0.49	0.49	0.58	0.58	0.61
Oman refreshment	0.41	0.48	0.47	0.52	0.55
Salala Mills	0.17	0.21	0.18	0.23	0.27
Sohar Poultry	-0.18	-0.15	-0.06	0.02	0.08
Sweets of Oman	0.25	0.33	0.39	0.49	0.38

Table 4: Earnings before interest and tax / Total assets, 2012-2016

Company	2012	2013	2014	2015	2016
A'Saffa	0.21	0.19	0.19	0.15	0.11
Dofar Beverage and Food	0.03	0.04	0.04	0.06	0.03
Dofar Cattle Feed	0.04	0.06	-0.04	0.02	0.02
Gulf Mushroom Products	0.16	0.09	0.05	0.04	0.03
National Biscuits	0.08	0.09	0.11	0.11	0.09
Oman Flour Mills	0.14	0.13	0.14	0.12	0.17
Oman refreshment	0.31	0.28	0.21	0.19	0.18
Salala Mills	0.1	0.1	0.08	0.1	0.1
Sohar Poultry	0.01	0.08	0.11	0.12	0.09
Sweets of Oman	0.17	0.14	0.13	0.12	0.06

Table 5: Market value of equity / Book value of total debt, 2012-2016

Company	2012	2013	2014	2015	2016
A'Saffa	7.9	14.97	10.52	12.88	11.52
Dofar Beverage and Food	2.85	2.18	2.22	3.08	3.13
Dofar Cattle Feed	0.01	0.09	0.05	0.06	0.06
Gulf Mushroom Products	0.31	3.71	3.98	3.31	1.64
National Biscuits	0.74	0.9	1.12	1.15	1.05
Oman Flour Mills	1.12	0.82	1.72	0.93	1.96
Oman refreshment	0.89	10.24	6.2	5.91	5.41
Salala Mills	1.52	2.43	0.13	1.90	0.48
Sohar Poultry	0.1	0.01	0.13	0.16	0.22
Sweets of Oman	1.67	1.45	2.32	3.32	1.81

Table 6: X5 = Net Sales / Total assets, 2012-2016

Company	2012	2013	2014	2015	2016
A'Saffa	0.69	0.76	0.72	0.71	0.64
Dofar Beverage and Food	0.69	0.65	0.74	0.87	0.78
Dofar Cattle Feed	0.46	0.43	0.47	0.63	0.61
Gulf Mushroom Products	0.76	0.8	0.74	0.67	0.48
National Biscuits	1.6	1.68	1.76	1.59	1.45
Oman Flour Mills	1.01	1.02	1.06	1.05	0.95
Oman refreshment	1.82	1.63	1.34	1.33	1.19
Salala Mills	0.89	1.11	0.93	1.02	0.95
Sohar Poultry	0.82	0.97	1.03	1.09	1.14
Sweets of Oman	1.63	1.42	1.52	1.62	1.27

As per the above tables, the financial health of the companies can be interpreted as follows: four companies, A'Saffa, Oman Flour Mills, Oman Refreshment and Sweets of Oman are completely safe with a Z score above 2.99 every year from 2012-2016. The financial health of these companies is very strong throughout the five years. The working capital to total assets ratio of all these companies are good showing that the short term repayment capacity of the companies are satisfactory but for Oman refreshment the ratio shows a decreasing trend which is not good. Even the retained earnings to total assets ratio of all the four companies is showing an increasing trend which shows that the companies are able to retain more earnings year after year, even though there is a slight decrease in ratio only for Sweets of Oman in 2016. Except for Oman flourmills, the other three companies have a decreasing trend in EBIT to total assets ratio. This is a strong indicator that the companies are not able to make efficient use of their assets for generating earnings for the company. As per the analysis results the market value of equity to book value of debts ratio is showing a decreasing trend for A'Saffa and Oman Refreshment. Sweets of Oman had an increasing trend in the ratio, which is a good sign of long-term solvency, but it had a sudden drop in the ratio in 2016, which is treated as positive. Oman Flour Mills is having a very fluctuating ratio, which is not a good sign though. The ratio of net sales to total assets, which is an indicator of the efficiency of the company to utilize the assets of the company to generate the sales, is not that satisfactory for all the four companies. It means that they are not effectively utilizing the assets in generating revenue for the company, which may also affect return on equity of the company.

National Biscuits was in a grey area, which means a danger of insolvency in the years 2012 and 2013. However, they improved and came out of the danger zone in 2014 and continue to be healthy with a high Z score of more than 2.99. The company is showing an increasing trend in the ratios as to short-term repayment capacity, efficiency in retaining earnings, generating EBIT, long-term solvency and generating a positive sales revenue by making use of the assets of the company. However, EBIT to total assets ratio and long-term solvency ratio though were showing an increasing trend—though there is sudden decrease in the ratio in 2016, which has to be addressed.

The three companies, Dofar Beverage and Food, Gulf Mushroom and Salala Mills are having an unstable financial health. Dofar Beverage and Food, and Salala Mills are in grey area as of 2016. Short-term solvency as well as the capacity of retaining earnings are showing an increasing trend for both the companies, Dofar Beverage and Food and Salala Mills. Both companies are not having any improvements in EBIT to total assets ratio, which shows that they are unable to create an improvement in generating EBIT by making use of the assets of the company. As far as long-term solvency of these companies are concerned, Dofar Beverage and Food is showing a positive trend in the ratio, which is a good sign. However, Salala Mills are having a decreasing trend in this ratio, which is not a good sign. Both the companies are not able to generate a proper sales revenue and it is understood from the fluctuating assets turnover ratio of both the companies throughout the five years.

Gulf Mushroom was healthy in 2013 and 2014 and entered the grey area in 2015, which finally became insolvent in 2016 as per the Z score. Short-term solvency ratio, EBIT to total assets ratio and net sales to total assets ratio are showing a decreasing trend. Whereas Retained earnings to total assets ratio and the long-term solvency ratio were showing an increasing trend which dropped down in 2016.

Z score of Dofar cattle feed is less than 1.81 for all five years, which is a serious indicator of financial distress. According Altman's score, such companies face imminent insolvency. Even when Sohar Poultry has a Z score less than 1.81 from 2012-2015, it showed a slight increase in the Z score in 2016 and come out of the danger of insolvency, but still it is in grey area, which shows that still there is a danger of

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insolvency. Dofar cattle feed is having a negative working capital to total assets ratio which indicates that the short-term repayment capacity of the company is very weak. Whereas Sohar poultry even though with a negative ratio in 2012, it showed an improvement in the following years which shows that the repayment capacity improved. For both the companies there is an increase in the retained earnings to total assets ratio, which reveals that the company are able to retain their earnings. However, there was slight reduction in the ratio for Dofar Cattle Feed in 2016. A decreasing trend in the EBIT to total assets ratio implies that Dofar Cattle Feed is not able to make an effective use of assets for generating earnings. Whereas Sohar poultry had an increasing ratio but with a slight decrease in 2016. The market value of equity to book value of total assets ratio which is an indicator of long term repayment capacity of the firm , is showing a decreasing trend for Dofar Cattle feed whereas an increasing trend for Sohar Poultry. The analysis reveals that both the companies are successful in making use of their assets for generating sales revenue by having a positive assets turnover ratio with an increasing trend year after year.

Suggestions for companies

- The short-term repayment capacity of Oman refreshment is showing a decreasing trend over the years. The company should take necessary steps to increase the availability of required amount of working capital in the business, which in turn improves the short-term repayment capacity of the firm.
- Sweets of Oman has a slight decrease in the Retained earnings to total assets ratio in 2016. There could be many reasons for a reduction in retained earnings such as decrease in net income, dividend distribution, net loss etc. The company should identify the exact reason for the reduction in retained earnings for 2016 when compared to previous years and take necessary steps to improve the retained earnings in the coming years.
- EBIT to total assets ratio is decreasing for A'Saffa, Oman Refreshment and Sweets of Oman over the years, which is not a good sign. This situation occurs when the investment in total assets are not appropriate. The companies can overcome this situation by either increasing the profits or decreasing the total assets so that there will be a considerable increase in EBIT.
- Market Value of equity to book value of debts ratio, which is an indicator of long-term solvency of a company, is declining for A'Saffa, Oman Refreshment and Sweets of Oman and fluctuating for Oman Flour Mills, which is not a good sign. A proper balance should be strike between the equity and value of book debts, because the company should have necessary assets to repay the debts even after there is a reduction in the value of the assets in the end.
- The ratio of net sales to total assets, for A'Saffa, Oman Refreshment, Sweets of Oman and Oman Flour Mills is not satisfactory. Therefore, the company may take necessary measures to improve the sales revenue by effectively making use of available assets. If the company is not showing an improving ratio when compared to previous years, there could be chances of more assets in the company, which are unutilized, and it has to be sorted out by the company.
- National Biscuits should take measures to improve EBIT to total assets ratio by cutting down underutilized assets, making efficient use of sales force or any other measures whereby the effective and efficient utilization of assets can add to sale revenue. Noting the drop in the market value of equity to book value of debts ratio for 2016, the company should also reduce the overdependence on borrowed assets.
- Dofar Beverage and Salala Mills have a constant reduction in the EBIT to total assets ratio, which is a serious sign of low level of EBIT. Both companies should identify inefficiencies in the utilization of the total assets of their companies and divest assets that are not contributing effectively to EBIT. In

addition, both companies have a decreasing Assets turnover ratio, which may be seriously considered as it has a direct effect on EBIT to total assets ratio.

- Gulf Mushroom Company should work hard to improve the sales revenue for which the right amount of working capital is required.
- Since Dofar cattle feed is not having satisfactory short-term solvency, it can take measures to increase availability of working capital. In addition, to increase the EBIT to total assets ratio, measures like reducing the cost of goods sold, increasing the sales revenue, reducing labor and operations costs etc. may be adopted.

5. Conclusion

The analysis reveals that, from the ten companies taken for the study for a period of 2012-2016, A'Saffa, Oman Flour mills, Oman refreshment and Sweets of Oman are financially healthy companies with a very high Z scores. Even though they are in the safe zone, the companies should constantly review and improve their short-term repayment capacity, ability to retain earnings and increase sales revenue, as well as ensure long-term repayment capacity. It is found that the two companies Dofar Beverage and Food and Salala Mills are in grey area as per the Z score for the five years. Whereas Gulf Mushroom, which was financially healthy in 2013 and 2014, went to grey area in 2015 and as per the financial reports of 2016, they are in danger zone, which means they face imminent insolvency. National Biscuits was in a grey area in 2012 and 2013 but came out of grey area and became healthy in 2014 and continues to be the same. Sohar Poultry was facing insolvency from 2012-2015, but it managed to reduce its risk of insolvency in 2016. As per the financial reports of 2016, they entered grey area, which is a positive sign that they are improving. Dofar Cattle Feed is facing insolvency since five years.

6. Limitations of the Study and Suggestions for Future Research

The study was conducted based on secondary data collected from Muscat Securities Market published financial statements of the companies for the period of 2012-2016.Out of 15 companies listed in MSM only 10 companies were considered for the study, and the study was confined to only companies listed under the food industry. There is a scope for further research by including all the 15 companies in food industry listed in MSM and even those, which are not listed in MSM. Also on a broader scope the study can be conducted on various other companies in Oman both listed and non-listed in MSM.

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