Relationship Between Accounting Variables and Market Price of Shares -A Case Study of Jordan

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Abstract

Relationship Between Accounting Variables and Market Price of Shares: essential theme of this paper is to examine the information content of accounting variables relating to the market price of the shares of listed companies in Jordan. For the purpose of the analysis, four accounting variables have been selected viz., ROE, Growth rate, Interest Coverage Ratio, and Total Assets Turnover Ratio. Panel Data regression has been done to analyze the impact of the select accounting variables on the market price of the shares. Descriptive statistics have calculated to understand the characteristics of the variables used in regression analysis. In other words, indicates a difference between Market Price and Book Value. If the ratio is more than one, it elucidate that the shares are valued at a premium. On the other hand, if ratio is less than one, it a denotes that the shares are valued at a discount. There are no studies on the analysis of the information content of accounting variables in predicting the stock price movement. To fill the research gap, in the present study, analysis of the information content of accounting variables was made by using the panel data regression model. In the following sections of this chapter, the relationship between select Accounting Variables and Price to Book Value ratio is analyzed individually for six select industries viz., Chemical Industry, Engineering and Construction Industry, Food and Beverages Industry, Mining and Extraction Industry, Pharmaceutical Industry and Textiles, Leathers and Clothing Industry.

Index terms— accounting variables. market price.

1 Introduction

oday, any responsive, economic entity aims to invest in providing relevant and up-to-date information to its users, hoping to get new investors while maintaining the existing ones. Also it achieves an increase in the volumes and the value of stocks that need to be traded and thus plays important role in activating the financial market. From here, we find that there are three important elements in the investment environment: the financial statements, the financial markets, and investment firms working in tandem to develop the investors. As Accounting Systems operate within complex economic entities, both national and international, it is statutorily compelled to keep up with new developments that help in their integration with the global standards, and that would eventually positively impact everyone.

Market prices of the shares traded in the stock market should reflect. The intrinsic value of the shares. The intrinsic value of the shares is primarily dependent on the future earning potential of the company. The most predominant source of assessing the future gaining prospects of a company is Financial Statements and additional information provided in Annual Reports.

Most widely used tool to analyze and evaluate the performance of a company is Accounting Ratios. Accounting Ratios are the results of establishing a logical relationship between various items of the financial statements. As the market price of the shares is expected to reflect the fundamentals of the company, it is legitimate to forecast that Accounting Ratios contain information about the market price of the shares. The market price, being an absolute measure, is not useful for comparison. Hence, there is a need for relative comparison of share prices of

different companies in the market. Two commonly used valuation measures are Price to Earnings ratio and Price to Book Value ratio.

2 II.

3 Statement of the Problem

In light of this, the present study aimed to examine the level of awareness of the investors on the information content of financial statements and how they assign importance to various aspects of financial statements. Besides, it is also the need of the hour to study whether the market price of the shares reflects the fundamentals of the company. Hence, investors are also interested in factor in the solvency and liquidity conditions of the company in pricing the shares. So, intuitively, we can establish a positive relationship between solvency and liquidity conditions and the market price of the shares. However, risk -seeking investors are more interested in profitability rather than solvency and liquidity conditions of the company.

4 III.

5 Objectives

The specific objectives are:

? To evaluate the information content of accounting variables in predicting the market price of shares listed on the Amman stock exchange.

a) Hypotheses H0: Accounting variables (Return on Equity. Interest coverage ratio, Growth Rate, Total Assets Turnover ratio) do not affect the market price of the shares of listed companies. H1: Accounting variables (Return on Equity, Interest coverage ratio, Growth Rate, Total Assets Turnover ratio) affect the market price of the shares of listed companies.

6 b) Sample

For this purpose of analysis of the relationship between accounting variables and the market price of the shares, listed companies in six industries have been selected. The industry-wise selected companies and their market capitalization are under as. The analysis of the impact of accounting variables (ROE, Growth rate, Interest coverage ratio and total assets turnover ratio) on the market price of the shares done by employing panel data regression with cross-section fixed effects. Besides, descriptive statistics for the variables used in the regression model. chemical industry listed on the Amman stock exchange. The company-wise market capitalization as on 31 st December/ 2016 has been presented. The descriptive statistics on the four Accounting Variables selected for the analysis, apart from Price to Book Value ratio. The results of panel data regression have along with the cross-sectional fixed effects of the individual companies. The positive impact of ROE implies that ROE signals the prospects of the company and hence, an increase in ROE of a company leads to an increase in the market price of the stocks. However, the positive impact of ROE is very weak statistically, as indicated by its associated 'p' value. The negative of growth rate may be ascribed to the reason that the number of companies have reported negative ROE and a few companies have paid dividend more than EPS.

Because of this reason, the growth rate of the majority of the companies was negative in this industry. Interest coverage ratio exerts the significant impact on the PBV ratio of the companies in chemical industry. It indicates that companies with higher interest coverage ratio perceived to be less risky, and hence, they are attractive for investment.

R-squared value is 0.89, which reveals that 89% of the variations in the PBV can be captured by the fitted regression model. Besides, F-statistic demonstrates the significant predictability of the regression model.

7 SI. No.

Table 1.3 shows the cross-section fixed effects of the companies which in the panel data regression. Cross-section fixed effects denote the difference between the average intercept presented in the panel data regression and actual intercept of the individual company.

As shown in the table, The company named Arab Pesticides has fixed effect of 2.037, which indicates that the actual intercept of this company is 2.037 units above the common intercept of the panel data regression. It shows comparatively largest upward distance between the common intercept and actual intercept of this company. On the other hand, Petrol Chemicals has a fixed effect of -0.810 which highlights that the actual intercept of this company is -0.810 units below the common intercept of the panel data regression. It points out the largest downward distance between this company's actual intercept and common intercept derived in the regression model.

8 Relationship Between Accounting Variables and Market Price of the Shares of Listed Companies in Engineering and Construction Industry of Jordan

This section encompasses the discussion on the analysis of the information content of Accounting Variables about the market price of shares of the companies belonging to the Engineering and Construction Industry. There are six companies listed on the Amman Stock Exchange, which belong to this industry. This section also provides the market capitalization of the listed companies as on 31 st December/2016. Before, presenting the results of the regression analysis. Panel data regression analysis has been carried out with cross-section fixed effected and the results with detailed discussion. and also the operating efficiency of the companies in their investment decisions. The R-squared value points out that 82% of the variations in the Price to Book Value ratio can be explained by the fitted regression model. F-statistic highlights that the predictability of the model is significant. This section encompasses the analysis of information content of select Accounting Variables in predicting the market price of the shares of the listed companies in the Mining and Extraction Industry. Just like in the preceding sections, Price to Book Value ratio has taken as a relative measure of the market price of the shares of the companies.

There are fifteen listed companies in this industry. At the outset, the market capitalization of the fifteen listed companies has presented as on 31 st December/2016. To understand the characteristics of the variables used in Panel Data Regression analysis, descriptive statistics have presented for the crosssectional data of the listed companies. The characteristics of the variables, Panel Data Regression analysis has done with cross-section fixed effects.

9 Panel Data Regression Analysis of the listed Companies in Mining and Extraction Industry of Jordan

Analysis of the information content of select Accounting Variables in predicting the Price to Book Value ratio has been carried out by employing a Panel Data Regression model. The analysis has done under the framework of cross-sectional fixed -effects model. In this regression analysis, Price to Book Value ratio has been used as the dependent variable, and four accounting variables have been used as predictors viz., Return on Equity Ratio, Interest Coverage Ratio, Growth Rate ,and Total Assets Turnover Ratio. 1.8 provides the results of regression analysis done to analyze the impact of select accounting variables on the market price of the shares of the companies in the Mining and Extraction Industry. For this purpose, Price to Book Value ratio uses as the dependent variable, and independent variables are Return on Equity (ROE), Interest coverage ratio, Growth rate ,and Total Assets Turnover Ratio. Panel data regression has performed with cross-section fixed effects.

Results of the analysis bring to light the fact that the ROE and Total Assets Turnover ratio have a positive impact on the Price to Book Value ratio. However, the Total Assets Turnover ratio is more intense compared to that of ROE has indicated by the p' values. The question of the trade-off between financial performance and operating performance arises, investors tend to give more weight to operating performance.

On the other hand, Growth Rate has the negative impact on the Price to Book Value ratio of the companies in the industry. It can impute to the reason that most of the companies had reported negative ROE and also, a few companies have paid dividend more than the EPS. Impact of Interest Coverage Ratio is not significant.

R-squared value highlights that the fitted regression model can capture nearly 86% of the variations in the Price to Book Value ratio. F-statistic reveals that the predictability of the model is significant. 1.11 delineates the cross-section fixed effects of the Pharma companies in panel data. The common intercept of the panel data is -0.890555, as shown in table 4.39. There are six companies in the panel data used in the regression analysis. There are two companies which have actual intercept larger than the common intercept obtained in panel data regression viz., Arab Centre for Pharma & Chemicals and Mid Pharma. On the other hand, there are four companies which have actual intercept lower than the common intercept derived in panel data regression viz., Dar Aldawa, Hayat Pharmaceutical Industries, Jordan Pharma, and Philadelphia pharma. It points out that the companies which have the intercept below the industry average intercept are more than the companies which have the intercept above the industry average.

10 Relationship Between Accounting Variables and Market Price of the Shares of Listed Companies in Textile, Leathers and Clothing Industry of Jordan

This section comprises the discussion on the results of the analysis of the information content of the select Accounting Variables in predicting the market price of the shares. There are six listed companies in this industry. The market capitalization of all the listed companies in this industry as on 31 st December/ 2016 has been presented. To study the insights of the variables used in the regression model, descriptive statistics has been presented in detail. Descriptive statistics have calculate on the cross-sectional data of the listed companies in this industry from 2012 to 2016. Finally, Panel data regression analysis was performed with cross-section fixed effects. Results of the regression were discussed in detail.

11 Panel Data Regression Analysis of the Listed Companies in Textile, Leathers and Clothing Industry of Jordan

Analysis of information content of select Accounting Variables in predicting the Price to Book Value ratio was done by employing Panel Data Regression model. The regression used Price to Book Value Ratio as the dependent variable and four accounting variables viz., Return on Equity (ROE) ratio, Interest Coverage Ratio, Growth Rate, and Total Assets Turnover Ratio as predictors. The regression analysis was done with cross-sectional fixed effects. 1.12 furnishes the results of regression analysis. In this regression model, Price to Book Value ratio of the companies in Textile, Leather and Clothing industry is used as a dependent variable and four Accounting Variables viz., Return on Equity (ROE), Interest Coverage Ratio, Growth Rate, and Total Assets Turnover Ratio were used as predictors. The analysis was performed under the panel data regression framework with cross-section fixed effects.

The results of the study reveal that ROE and ICR have a positive effect on PBV ratio while growth rate and 'Total Assets Turnover Ratio' have a negative effect. But, none of the independent variables have a significant effect, as by the values of 'p' ($p > 0.05$ However, jointly all the four variables have their influence on the PBV ratio, as shown by the significant value of Fstatistic.

12 The Comparison of the Predictability Accounting Variables

In this sub-section, comparison of the predictability of accounting variables was done among the six different industries selected for the analysis. As the nature of the operating and investing and finance activities of the companies differ from industry to industry, the information content of the accounting variables in predicting the market price of the shares may also vary. Because/the accounting variables measure the results of the three types of activities of the business. In light of this, it is pertinent to make the comparison among the six select industries concerning the information content of the chosen accounting variables. The comparison can provide valuable insights into the fundamentals of the companies which are influencing the market price of the shares. It points out that higher the interest coverage ratio, greater the market price of shares. It brings to light the fact that in case of those industries having a hugger amount of interest payable about EBIT perceive to be risky. So, investors tend to discount the market price of shares of the companies with a larger amount of interest payable.

The Negative effect of growth rate can be noticed in the case of all of selected industries, but the statistical significance of the impact was established only in case of the Chemical Industry and Mining & Extraction Industry. It is worthwhile to remember that the growth rate of a company is estimated based on retained earnings of the company. So, higher the retained earnings, bigger the growth rate of the company. The negative impact of growth rate on the Price to Book Value ratio brings to focus the fact that the investors in those industries prefer distribution of dividend rather than plow back of profits for the expansion of business activities. Such preference of the investors can attribute to the reason that the internal average of return of the companies in the industry may be lower than the expected rate of return.

Total Assets Turnover ratio has a positive impact in case of Engineering & Construction Industry, Mining & Extraction Industry, and Pharma industry. It implies that operating efficiency perceived to the main determining factor for the success of a company. Hence, investors value the companies with higher Total Assets Turnover Ratio at a fair premium. On the other hand, comparatively lowest adjusted R-squared is derived for the panel data regression for the companies in the textile, leather, and clothing industry. It demonstrates that the proportion of variations in the dependent variable captured by the fitted panel data regression is only 48%. It highlights comparatively poor predictability of the regression model.

Under none of the regression models, the Durbin-Watson Statistic value is less than Adjusted R-squared. It indicates that the results of the regression are not spurious. For all the regression models, F-statistic is significant which implies that the data suits well to the regression model and also the predictability of the model is statistically significant. Jarque-Berra test is meant to test the null hypothesis that residuals obtained from the regression model are normally distribute ,the null hypothesis is accepted for all the industries except for Food ,and Beverages industry. As the residuals are normally distributed, the results of the regression are reliable and generalization of the results can make more effectively.

IV.

13 Conclusion

? The main objective of the present paper is to examine the efficacy of the accounting variables in predicting the market price of the shares of the listed companies in Jordan. To achieve the said objective the listed companies belonging to six different industries was chosen.

11

Sl. No.	Company	Market Capitalization	% to Industry Capitalization
	Chemical Industry		
1	Arab Pesticides & Veterinary Drugs Mfg. Co.	21,840,000	27.89
2	Comprehensive	8,977,500	11.46
3	Industrial-Comm-AGR	31,258,853	39.92
4	Intermediate Petrol Chemicals Industries Co. Ltd.	2,240,000	2.86
5	Jordan Chemical Industries	2,519,474	3.22
6	Jordan Industrial Resources	3,657,500	4.67
7	National Chlorine Industries	5,850,000	7.47
8	Premier Business and Projects	1,157,107	1.48
9	Universal Chemical Industries	810,000	1.03
	Total Market Capitalization of the Industry	78,310,434	100.00
	Engineering and Construction Industry		
1	Al Assad	2,880,000	3.25
2	Al Quds Ready Mix	2,685,609	3.03
3	Arabian Steel Pipes	13,140,000	14.82
4	Jordan Pipe Manufacturing	3,146,000	3.55
5	Jordan Wood Industries	7,800,000	8.80
6	Ready-mix Concrete & Construction	59,000,000	66.55
	Total Market Capitalization of the Industry	88,651,609	100.00
	Food and Beverages Industry		
1	Arab Intl Food Factories	22,575,000	11.28
2	General Investment	30,500,000	15.24
3	Jordan Dairy	24,240,000	12.11
4	Jordan Poultry Processing	9,957,040	4.98
5	Jordan Veg Oil Industries	6,600,000	3.30
6	National Poultry	31,500,000	15.74
7	Siniora Food Industries	63,600,000	31.78
8	Universal Modern Industries	11,160,000	5.58
	Total Market Capitalization of the Industry	200,132,040	100.00

Figure 1: Table 1 . 1 :

12

Variable	Coefficient	Std. Error	t-statistic	Slang
Return on Equity	0.042	0.026	1.611	0.117
Interest Coverage Ratio	0.010	0.003	2.771	0.009
Growth Rate	-0.048	0.028	-1.730	0.094
Total Assets Turnover Ratio	-0.086	0.108	-0.790	0.435
Constant	1.073	0.070	15.287	0.000
R-squared	0.886	F-statistic		20.058
Adjusted R-squared	0.842	Slang (F-statistic)		0.000
S.E. of regression	1.205			

Source: Computed from Data Compiled from A

Table 1.2 furnishes the results of regression analysis performed to regress the Price to Book Value (PBV) ratio of the companies in the panel data on four accounting ratios viz., Return on Equity (ROE) ratio, Interest Coverage Ratio, Growth Rate, Total Assets Turnover ratio. The results of the analysis highlight that ROE has an insignificant positive impact while the growth rate has a significant negative on the Price to Book Value (PBV) Ratio. Interest Coverage Ratio has a significant positive, while Total Assets Turnover Ratio has an insignificant impact.

Figure 2: Table 1 . 2 :

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	1	Arab Pesticides Compre-	
	2	hensive Industrial-Comm-AGR Petrol	2.037
	3	Chemicals Jordan Chemical Industries	0.267
	4	Jordan Industrial Resources	0.526
	5		-0.718
	6		-0.237
			-0.810
	7	National Chlorine Industries	-0.436
	8	Premier Business and Projects	-0.323
	9	Universal Chemical Industries	-0.383

Source: Computed from data compiled from Amman Stock Exchange

Figure 3: Table 1 .3: Cross-Section Fixed Effects of the Companies in the Panel Data [Chemical Industry]

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Return on Equity	-0.011	0.018	-0.594	0.560
Interest Coverage Ratio	0.002	0.001	3.180	0.005
Total Assets Turnover Ratio	1.121	0.446	2.514	0.022
Growth Rate	-0.023	0.025	-0.914	0.373
Constant	0.263	0.269	0.978	0.341
R-squared	0.816	F-statistic		8.860
Adjusted R-squared	0.724	Slang (F-statistic)		0.000
S.E. of regression	0.341			

[Note: Source: Computed from Data Compiled from Amman Stock Exchange]

Figure 4: Table 1 . 4 :

15

Sl. No.	Company	Effect
1	Al Assad	-0.461
2	Al Quds Ready Mix	-0.508
3	Arab Steel Pipes	0.352
4	Jordan Pipe Manufacturing	-0.186
5	Jordan Wood Industries	-0.336
6	Readymix Concrete & Construction	0.969

[Note: Source: Computed from Data Compiled from Amman Stock Exchange © 2019 Global Journals Relationship Between Accounting Variables and Market Price of Shares -A Case Study of Jordan D 5]

Figure 5: Table 1 . 5 :

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Variable	Coefficient	Std. Error	t-Statistic	Slang
Return on Equity	0.044	0.029	1.518	0.142
Interest Coverage Ratio	0.000	0.000	0.152	0.881
Growth Rate	-0.040	0.031	-1.268	0.217
Total Assets Turnover Ratio	-0.461	0.272	-1.692	0.104
Constant	1.213	0.201	6.025	0.000
R-squared	0.794	F-statistic		8.427
Adjusted R-squared	0.700	Slang (F-statistic)		0.000
S.E. of regression	0.282			

Source: Computed from Data Compiled from Amman Stock Exchange

Figure 6: Table 1 . 6 :

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Figure 7: Table 1 .

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Sl. No.	Company	Effect
1	Arab Intl Food Factories General Investment	-0.766
2	Jordan Dairy	-0.119 0.024
3		
4	Jordan Poultry Processing	-0.148
5	Jordan Veg Oil Industries	-0.003
6	National Poultry	-0.245
7	Siniora Food Industries	1.054
8	Universal Modern Industries	0.136

[Note: Source: Computed from Data Compiled from Amman Stock Exchange © 2019 Global Journals 1 D]

Figure 8: Table 1 . 7 :

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Figure 9: Table 1 .

18

Variable	Coefficient	Std. Error	t-Statistic	Slang
	Extraction Industry]			
Return on Equity Ratio	0.026	0.012	2.206	0.032
Interest Coverage Ratio	-0.001	0.002	-0.434	0.666
Growth Rate	-0.025	0.012	-2.083	0.042
Total Assets Turnover Ratio	0.485	0.152	3.203	0.002
Constant	1.185	0.085	13.975	0.000
R-squared	0.864	F-statistic		19.707
Adjusted R-squared	0.820	Slang (F-statistic)		0.000
S.E. of regression	0.686			

[Note: Source: Computed from Data Compiled from Amman Stock ExchangeTable]

Figure 10: Table 1 . 8 :

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Figure 11: Table 1 . 9 :

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Figure 12: Table 1 .

1

Sl. No.	Company	Effect
1	Arab Centre for Pharma & Chem	1.145
2	Dar Aldawa	-0.605
3	Hayat Pharmaceutical Industries	-0.367
4	Jordan Pharma	-0.885
5	mid pharma	-0.021
6	Mid Pharma	1.669
7	Philadelphiapharma	-0.356

[Note: Source: Computed from Data Compiled from Amman Stock ExchangeTable]

Figure 13: Table 1 .

1

Variable Return on Equity Ratio Growth Rate Interest Coverage Ratio Total Assets Turnover Ratio	Coefficient 0.032 -0.046 0.000 -0.311	Std. Error	t-Statistic	Slang 0.759
		0.103	0.312	0.664
		0.104	-0.442	0.848
		0.002	-0.194	0.929
		3.457	-0.090	
Constant	1.197	1.212	0.988	0.336
R-squared	0.652	F-statistic		3.739
Adjusted R-squared	0.477	slang(F-statistic)		0.008
S.E. of regression	0.579			

Source: Computed from Data Compiled from Amman Stock Exchange

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[Note: DTable]

Figure 14: Table 1 .

1

	Company	Effect
1	Akari for Industries and Real Estate	1.285315
2	Arab Weavers Union Company	0.535005
3	Century Investment Group	-0.022592
4	El-Zay Ready Weak Mfg	-0.626556
5	Jordan Clothing Company	-0.579892
6	Jordan Worsted Mills	-0.417772

Source: Computed from Data Compiled from Amman Stock Exchange

Figure 15: Table 1 .

1

Figure 16: Table 1 .

1

Variable	Chemical Industry	Engineering & Construction	Food & Beverages	Mining & Extraction	Pharma	Textile, Leather & Clothing
ROE	0.042	-0.011	0.044	0.026**	-0.013**	0.032
ICR	0.010**	0.002**	0.000	-0.001	0.002	-0.0003
Growth Rate	-0.048*	-0.023	-0.040	-0.025**	-0.010	-0.046
TATR	-0.086	1.121**	-0.461	0.485**	4.437	-0.311
Constant	1.073**	0.263	1.213**	1.185**	-0.891**	1.197

(** indicates 5% level of significance, * indicates 10% level of significance)
Source: Computed from Data Compiled from Amman Stock Exchange

Figure 17: Table 1 .

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Figure 18: Table 1 .

1

Industry	Adjusted R-Squared	Standard Error	D-W Statistics	F-Statistic	JB Test
Chemical Industry	0.842	1.205	1.939	20.058*	10.022
Engineering & Construction Industry	0.724	0.341	2.150	8.860*	1.812
Food & Beverages Industry	0.700	0.282	3.045	8.427*	56.492
Mining & Extraction Industry	0.820	0.686	1.562	19.707*	2.895
Pharma Industry	0.898	0.457	3.319	24.802*	0.587
Textile, Leather and Clothing Industry	0.477	0.579	0.618	3.739*	1.6477

(* indicates 1% level of significance)

Source: Computed from Data Compiled from Amman Stock Exchange
Table 1.15 presents a consolidated view of the
diagnosis of the regression model. Highest adjusted R-
squared value was reported in case of pharma industry
followed by chemical industry indicating the
comparatively better predictability of the regression
model.

Figure 19: Table 1 .

The industries
selected include Chemical Industry, Engineering,
and Construction Industry, Food and Beverages
Industry,   Mining & Extraction   Industry,

Figure 20:

13 CONCLUSION

is obvious that the companies with actual intercept lower than the common intercept are more than the companies with actual intercept larger than the common intercept.

.1 Relationship Between Accounting Variables and Market Price of the Shares of Listed Companies in the Pharmaceutical Industry of Jordan Panel Data Regression Analysis of the Listed Companies in Pharma Industry of Jordan

Analysis of information content of Accounting Variables in predicting the Price to Book Value ratio of the companies listed on Amman stock exchange were done by employing Panel Data Regression model. In this regression, Price to Book Value ratio was regressed on four accounting variables viz., Return on Equity (ROE), Interest Coverage Ratio, Growth Rate, and Total Assets Turnover Ratio. Panel data regression analysis was performed with cross-sectional fixed effects.