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"Relationship between Financial Leverage and Financial Performance: Empirical Evidence of Listed Sugar Companies of Pakistan"

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RELATIONSHIPBETWEENFINANCIALLEVERAGEANDFINANCIALPERFORMANCEEMPIRICALEVIDENCEOFLISTEDSUGARCOMPANIESOFPAKISTAN

Strictly as per the compliance and regulations of:

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Abstract - Sugar Industry is the 2nd most main industry of Pakistan after cotton. Pakistan is rich in the production of sugar, most of the production of sugar is consumed by the locals and surplus is exported. It is general concept that financial leverage and financial performance has positive relationship. The objective of the current study is to investigate the influence of financial leverage on financial and to investigate whether financial leverage has an effect on financial performance by taking evidence from listed sugar companies of Pakistan. The results of the study show the mix results. The results show the positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity.

I. Introduction

Financial leverage can described as the extent to which a business or investor is using the borrowed money. Financial leverage is a measure of how much firm uses equity and debt to finance its assets. As debt increases, financial leverage increases. It has been seen in different studies that financial leverage has the relationship with financial performance. In this study the sample size consists of 35 listed companies from food producer sector of Karachi Stock Exchange. The listed sugar companies are included in the study from the food producer sector of Karachi Stock Exchange. The aim of this study is an attempt to investigate the relationship between financial leverage and financial performance. The dependent variable which is used in this study is the financial performance of the listed sugar companies at Karachi Stock Exchange. The financial performance will be measured by using five indicators named as, Return on Assets (%), Return on Equity (%), Earning per Share after Tax (%), Net Profit Margin (%), Sales Growth (%). Financial leverage is the independent variable which is measured by using debt to equity ratio. Descriptive and correlation analysis are used for the data analysis.

II. Background of Sugar Industry of Pakistan

Sugar Industry is the 2nd most important industry of Pakistan after cotton. Pakistan is independent in sugar. Out of which most is used up locally and the surplus is even exported. Pakistan had a weak base of sugar industry at the time of independence producing only 7,932 tonnes of sugar. This amount was not enough for the local needs and so most of it had to be imported. The Government paid attention to improve this sector and set up a commission with the purpose to developing a stronger sugar industry. After a very long struggle now we have 75 sugar mills in Pakistan which are producing 2.5 million tonnes of sugar. The industry has given employment to around 100,000 people. Most of sugar mills are present in Punjab and Sindh with 38 and 30 respectively and only 6 are present in Khyber pakhtunkwa. As sugarcane needs to be pressed soon after it is harvested, so the mills are located very close to the sugarcane fields so that the stalks can be transported as quickly as possible. After pressing the juice is used to make sugar while the left over named as 'Bagasse' is used to make chipboards, paper etc. and is also used as a source of power in the mills. Molasses is also a by-product obtained during the process of sugar refining. Molasses is used in the chemical industry to make alcohol which is used in some medicines etc. Sugar mills are facing a problem of lack of raw material as excess quantity of raw sugarcane is used for Gur making and for seeds. It should be only 25% of total sugarcane production used but around 37% of it is used. With the deficiency of raw material and some bad planning of the officials Pakistan has to import sugar from neighbouring countries to fulfil its local consumption.

III. Research Aims and Objectives

To study the influence of financial leverage on financial and to investigate whether financial leverage has an effect on financial performance by taking evidence from listed sugar companies of Pakistan. Progressive economic growth in a county is essential for effective and sound decision making of firm's financial policies. Capital structure is one of the most significant areas of firms' strategic financial decision making. Several economic and institutional factors drive the economy towards a certain direction and play a vital role in influencing the firms' choices of leverage. The aim of this study is an attempt to investigate the relationship between financial leverage and financial performance.

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IV. Need and Significance of the Study

There are very few researches on the topic of financial leverage effect on financial performance in Pakistan so, it's an opportunity for us to explore the relationship about aforesaid topic and there is a need and significance of this study in Pakistan. In Pakistan firms use financial leverage to meet their financing needs but they are not aware how it effecting their financial performance and hence increasing share-holders return. But here question also arises how much leverage they should use? All it depends upon their ability to generate sales to meet the debt burden. And also it depends on the economic conditions of Pakistan. This research will be very helpful for the firms to analyse their financial needs, capacity to borrow and how it is helpful for generating returns for shareholders and ultimately for economic growth of Pakistan.

V. Literature Review

Akhtar, et Al. (2012) had investigated the impact of influence on shareholders return. In their paper "Relationship between Financial leverage and Financial Performance: Evidence from Fuel & Energy Sector of Pakistan, they demonstrated that financial leverage has got a positive relationship with financial performance". Hence, the companies in the fuel and energy sector may enhance their financial performance and can play their role for the growth of the economy while improving at their optimal capital structures. In their study they employed a sample of 20 listed public limited companies from Fuel and Energy sector listed at Karachi Stock Exchange (KSE). The study aimed at measuring the relationship between financial leverage and the financial performance. To test the hypothesis, the main variables used in the study consist of a dependent variable which is financial performance of fuel and energy sector while an independent variable financial leverage in fuel and energy sector.

Akinmulegun Sunday Ojo (2012) in his paper "The Effect of Financial Leverage on Corporate Performance of Some Selected Companies in Nigeria empirically examines the effect of financial leverage on selected indicators of corporate performance in Nigeria". Leverage therefore significantly affects corporate performance in Nigeria. Other detailed objectives are to:

Examine the impact of leverage on the earnings per share and net assets per share of corporate firms in Nigeria.

The econometric findings presented in this study evidence that leverage shocks (debt/ equity ratio) have significant effect on corporate performance especially when the net assets per share (NAPS) is used as an indicator of corporate performance in Nigeria over the period covered by the study.

Earnings per share depend on feedback shock and less on leverage shock. Also, the outcome exposed that the influence shock on earnings per share indirectly disturb the net assets per share of firms as the majority of the shocks on the net assets per share was received from earnings per share of the firms.

Yoon and Jang (2005) study presents an empirical insight into the relationship between return on equity (ROE), financial leverage and size of firms in the restaurant industry for the period 1998 to 2003 using OLS regressions and for this purpose they take 62 Restaurant firms in US. Research results showed that high leveraged firms were less risky in both market-based and accounting-based measures. There is positive relationship between financial leverage and both profit measures and positively correlated. Also suggest that at least during the test period firm size had a more dominant effect on ROE of restaurant firms than debt use, larger firms earning meaningfully higher equity returns. Results also suggest that regardless of having lower financial leverage, smaller restaurant firms were significantly more risky than larger firms.

Ujah and Brusa (2013) in their research paper "The Effect of Financial Leverage and Cash Flow Volatility on Earnings Management." Took 559 US firms from the period 1990 through 2009 and identify the relationship between Leverage, Cash flow Instability and earning management variables. The findings of this paper suggest that financial leverage and cash flow impact the degrees to which firms manage their earnings. That business cycle and not bond or debt ratings affect firm's earnings management. Also, we find that depending of economic group or industry a firm belongs to their degree and extent of managed earnings varies.

Rajni Saini (2012) had investigated the influence of financial leverage on shareholders return and market capitalization. Empirical evidence of telecommunication sector companies, India. To measure this, financial statements of seven (07) listed firms have been analyzed over a period of 07 years. Descriptive Statistics, Co-relation and t-test has been conducted to find out nature of relationship and the state of influence of the financial leverage on shareholder's return and market capitalization individually. The research evidence of the study indicates that there is positive relationship between financial leverage and shareholder return but negative relationship between financial leverage and market capitalization.

Obradovich and Gill (2013) had researched on the Impact of Corporate Governance and Financial Leverage on the Value of American Firms. For this purpose a sample of 333 firms listed on New York Stock Exchange (NYSE) for a period of 3 years from 2009-2011 was selected. The co-relational and non-experimental research design was used to conduct this study by taking firm value as dependent variable and CEO

Duality, Board Size, Audit Committee and Financial Leverage as dependent variable. The purpose of this study was to find the impact of corporate governance and financial leverage on the value of American firms. Overall outcomes show that larger board size negatively impacts the value of American firms and CEO duality, audit committee, financial leverage, firm size, return on assets and insider holdings positively impact the value of American firms.

Aydemir et al. (2007) quantify the effect of financial leverage on stock return instability in a dynamic general equilibrium economy with debt and equity claims. The effect of financial leverage is studied both at a market and a firm level. They took the fake data and apply descriptive and Pearson correlation Statistics and Regression models, taking market return, market instability, Market price of Risk, financial leverage as dependent and independent variables. Their findings are for the market as a whole, financial leverage increases the level of equity volatility but the dynamics of equity volatility are mostly driven by a time-varying interest rate and a time-varying market price of risk. Financial leverage contributes more to the dynamics of stock instability for a small firm exposed to both individual risk and market risk.

Long and Malitz (1985) explored the influence of Investment Patterns on Financial Leverage. For this purpose they took the sample of 545 firms that are listed on NYSE & AMEX for the period of 1978-80 and develop a modal showing cause and effect relationship b/w underinvestment and asset substitution. Taking investment choices firm specific assets, tangible or intangible assets, capital assets as independent variable and financial leverage as dependent variables. Researchers find moral hazard problem. It is a major determinant of corporate leverage which affects a firm's investment decisions. Results provide direct empirical evidence that the moral hazard problem is important and that investment and financing decisions are not independent.

Pachori and Totala (2012) in their research paper " Influence of Financial Leverage on Shareholders Return and Market Capitalization: A Study of Automotive Cluster Companies of Pithampur, (M.P.), India" aimed to find out influence of financial leverage of automotive cluster companies on shareholders' return and market capitalization by using statistical tools. They took the sample of seven major automotive public companies. The study covered five years' time period from 2006 – 07 to 2010-11. Linear simple regression has been used as a tool to analyze the data by SPSS IBM-19 version by taking independent variables as financial leverage and the dependent variables are shareholders' return and market capitalization. The results indicate that there is no significant influence of financial leverage on shareholder's return and market capitalization. The study also concludes that there might be other non-quantitative factors which may lead to nullify the impact of financial leverage on shareholders return like recession, saturation of auto industry, competition and government policy.

Cheng and Tzeng (2010) had investigated the Effect of Leverage on Firm Value and how the firm financial quality influences on this effect. For this purpose they took the sample consist of 645 companies listed in Taiwan Securities Exchange (TSE) that provide annual report from 2000-2009 consecutively. They took value of firm as dependent variable and financial leverage as independent variable. Apply descriptive and Pearson correlation Statistics and Regression models. They conclude that the values of leveraged firm are greater than that of an unleveraged firm if we don't consider bankruptcy probability. Secondly, if we consider the benefit and cost of debt instantaneously, the leverage is significantly positively related to the firm value before reaching firm optimal capital structure.

Thirdly, the positive influence of leverage to the firm value tends to be stronger when the firm financial quality is better (i.e., the greater Z-score).

Achchuthan and Jasinthan (2012) had investigated the "influence of financial and operating leverage on the financial performance with special reference to Lanka Orix leasing company Plc in Sri-Lanka. Data collected from lanka orix leasing company plc in Sri-Lanka (During the year 2001-2010). By taking financial performance as dependent and financial and operating leverage as independent leverage and perform ratio analysis and inferential statistics. Analyses of the data showed that only operating leverage has a significant on the financial performance of LOLC plc in Sri-Lanka. The outcomes revealed that no main difference was found between financial leverage and financial performance.

ALIU and Nuhu Onimisi (2010) examines the effect of capital structure on the performance of quoted manufacturing firms in Nigeria and determines a positive relationship between the value of Leverage and return on equity, return on assets and return on investment of Nigerian quoted manufacturing firms respectively. Further suggest that more properly the use justice and debt more the performance will be better. For this purpose data was collected from textbooks, annual reports, Journals, other published materials, Nigerian Stock Exchange fact books and the annual financial statements of the sampled 108 firms for the periods 2000 to 2009 and it was analyzed by statistical techniques.

Lemonakis and Voulgaris (2012) wrote in his research paper "Drivers of profitability and leverage of Greek firms in the post crisis era" determines overall all firms are showing a dramatically low net profit margin during the recessionary study period (2008-2010) and a high reliance on debt. Both liquidity ratios are negatively correlated. The study covering the period 2008-10, Data are firm level financial data taken from the ICAP database for 3,222 corporate firms from 4 key sectors of the Greek economy. Two logistic regression models are used to analyze data by taking financial leverage and firms performance as independent and dependent variables.

Results of Dr. Khalaf Taani (2012) study indicated that the firm's working capital management policy, financial leverage and size have significant relationship to the net income, ROE, and ROA. The ANOVA F test and the t-test statistics showed significant results ($P>.50$).Both working capital management policy and firm size have positive effect on the firms' net income while financial leverage showed negative relation. He took 45 Jordanian industrial firms listed on Amman Stock Exchange for a period of five years from 2005 – 2009 and total of 225 observations. The SPSS statistics was used to determine significant relation among the variables. Test of correlation, ANOVA and multiple regression analysis were performed.

Pratheepkanth (2011) determines that there is a weak positive relationship between gross profit and capital structure at the same time, there is a negative relationship between net profit and capital structure. It reflects the high financial cost among the firms. ROI and ROA also have negative relationship with capital structure. Data of Business firms is collected from listed firms on Colombo Stock Exchange Sri-Lanka. All firms are taken for the study representing the period of 2005-2009. Regression, correlation and other statistical tools are used to analyze data.

Hasanzadeh et al. (2013) had investigated Evaluating Effects of Financial Leverage on Future Stock Value at Stock Exchange. The research statistical population was consisted of those Tehran stock exchange listed active cement industry companies analyzed from 2005 to 2008. By taking financial leverage and market to book value ratio as variable and to analyze data and test hypothesis of the present research, descriptive and inferential analyzing methods and SPSS statistical software were applied. They concluded that leverage does not affect future stock value of the firm. The results indicate non-response of capital market against levered nature of the firm. Lack of relationship between leverage and firm value approves net operational income (NOI) theory14 and Miller and Modigliani (M.M) theory15.

a) Variables

i. *Dependent Variable*

The dependent variable which is used in this study is the financial performance of the listed sugar companies at Karachi Stock Exchange. The financial performance will be measured by using five indicators named as, Return on Assets (%), Return on Equity (%), Earning per Share after Tax (%), Net Profit Margin (%), Sales Growth (%).

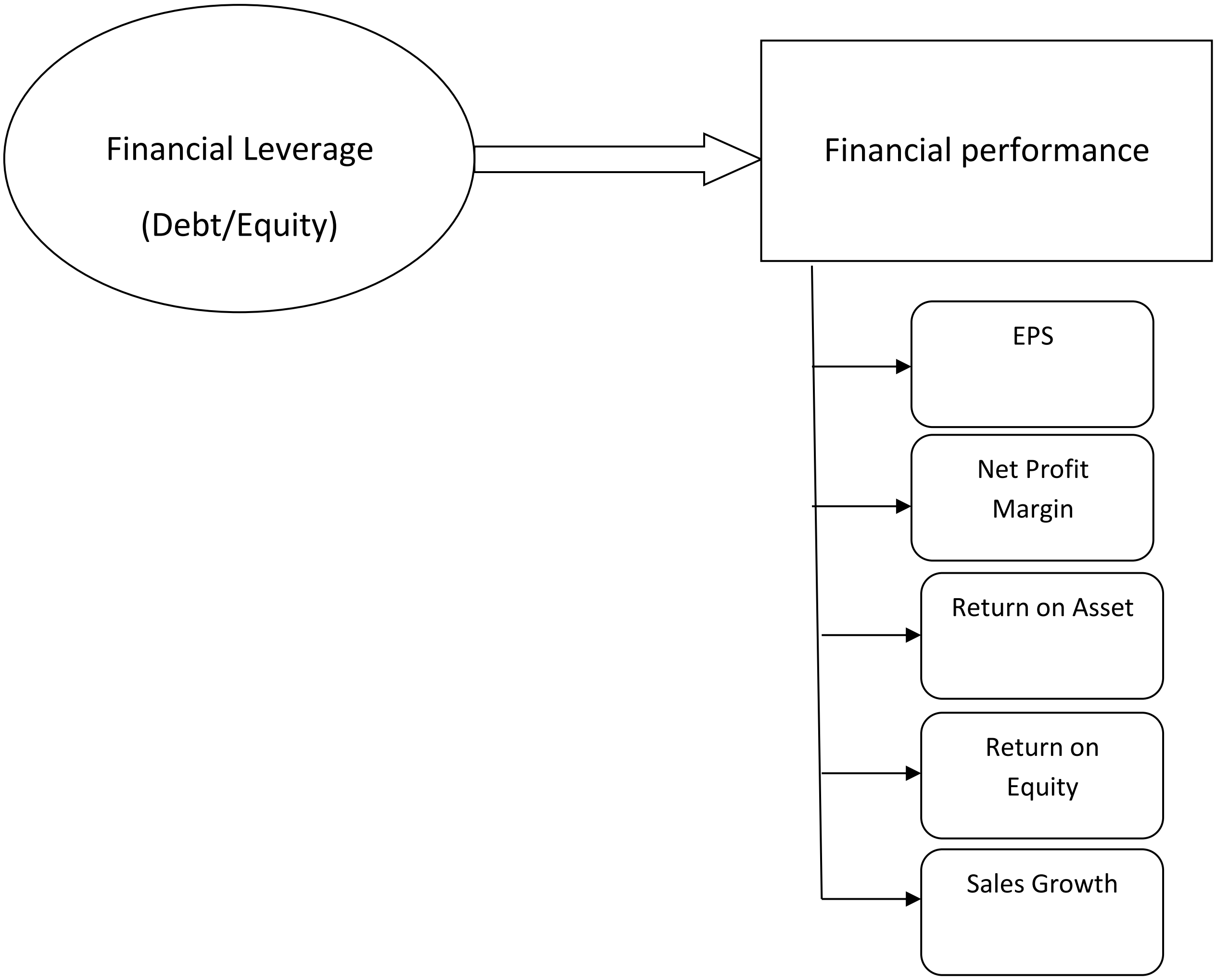
ii. *Independent Variable*

In this study we use financial leverage as independent variable which is measured by using debt to equity ratio.

The relationship between dependent and independent variable can be explained by the following equation:

$$\text{Financial performance} = a + b\,(\text{financial leverage}) + E$$

VI. Conceptualization



a) Hypothesis-H1

There is a positive relationship between financial leverage and financial performance of the sugar companies operating in a food producer sector of Karachi Stock Exchange.

VII. Research Methodology

a) Data Collection

This research is a quantitative research in which secondary data is used. Secondary data is data that have been previously collected for some other research. The data for this research is collected by using the annual reports of the companies which provide help in getting the authentic results. We also collect data from financial statement analysis of companies (non-financial) listed at Karachi Stock Exchange from the period 2006-2011. This data is published by state bank of Pakistan and DWH department.

b) Sampling Design

The sample size consists of 35 listed companies from food producer sector of Karachi Stock Exchange. The listed sugar companies are included in the study from the food producer sector of Karachi Stock Exchange. All the other companies from food producer sector are excluded from this study.

c) Statistical Techniques

Descriptive statistics are used to describe and summarize the behavior of the variables in a study. They refer to the ways in which a large number of observations are reduced to interpretable numbers such as averages and percentages.

This is the general acceptance that financial leverage affects the financial performance of the companies. This current study analyzes the relationship between financial leverage and financial performance of the listed companies.

Correlation analysis is also used to find out the relationship between financial leverage and financial performance.

VIII. Data Analysis and Discussion

This section includes the statistical analysis of financial leverage and the financial performance. The common method to measure financial leverage is to use financial ratio, in which debt to equity ratio is being calculated and analyzed. Debt to equity ratio is calculated by dividing total liabilities to shareholders' equity. Debt to equity ratio indicates that how much portion of capital structure is being financed by debt. In listed sugar companies of Pakistan, the average debt equity ratio is -1.68%, maximum debt equity ratio is 10.22%, minimum debt equity ratio is -116.26%. The results show in the table 1 that the variance from the mean is 413.14% with the standard deviation of 20.33%.

Table 1 : Statistical Analysis of Financial Leverage Indicator

	Mean	Maximum	Minimum	Variance	Std. Dev.	Observations
Debt Equity Ratio	-1.68	10.22	-116.26	413.14	20.33	35

In table 2 statistical analysis of financial performance indicator is shown. The maximum value of earning per share is 17.53 and minimum value is 14.85. The industrial average of earning per share is 0.92 with the variance from the mean is 64.77 and standard deviation of 8.05.

Table 2 : Statistical Analysis of Financial Performance Indicator

	Mean	Maximum	Minimum	Variance	Std. Dev.	Observations
EPS	0.92	17.53	-14.85	64.77	8.05	35
NET PROFIT MARGIN	-10.86	12.96	-411.91	4921.67	70.15	35
RETURN ON ASSET	3.98	22.72	-8.87	69.27	8.32	35
RETURN ON EQUITY	31.35	498.81	-87.61	9394.81	96.93	35
SALES GROWTH	1.09	4.04	-2.36	1.16	1.08	35

The maximum value of net profit margin is 12.96% and minimum value is -411.91. The industrial average of net profit margin is -10.86 with the variance from the mean is 4921.67 and standard deviation of 70.15. The maximum value of return on asset is 22.72 and minimum value is -8.87. The industrial average of return on asset is 3.98 with the variance from the mean is 69.27 and standard deviation of 8.32. . The return on equity is very high maximum value of return on equity is 498.81 and minimum value is -87.61. The industrial average of return on equity is 31.35 with the variance from the mean is 9394.81 and standard deviation of 96.93. The maximum value of sales growth is 4.04 and minimum value is -2.36. The industrial average of sales growth is 1.09 with the variance from the mean is 1.16 and standard deviation of 1.08.

Table 3 : Correlations analysis of financial performance indicators with Financial Leverage

	D/E RATIO	EPS	NET PROFIT MARGIN	ROA	ROE	SALES GROWTH
D/E Ratio	1	-0.00341	-0.019857	0.028485	-0.83433	0.136025
EPS	-0.003405	1	0.340107	0.713719	0.005699	0.246167
NET PROFIT MARGIN	-0.019857	0.340107	1	0.279016	0.060038	0.136091
ROA	0.028485	0.713719	0.279016	1	0.036827	0.164832
ROE	-0.834333	0.005699	0.060038	0.036827	1	-0.039853
SALES GROWTH	0.136025	0.246167	0.136091	0.164832	-0.03985	1

Table 3 shows the relationship between debt equity ratio and various performance indicators. The results show the positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity.

There is a negative relationship between debt equity ratio and earning per share which support the fact that as debt increases, the interest payment will also raise, so EPS will decrease.

Net profit margin tells that how much additional dollar earned by the company has effect on profits. The negative relation between debt equity ratio and net profit margin ratio indicates that as debt increase, net profits of the company tend to decrease, because most of the revenues are used to pay off the debts. So, the net profit margin ratio will also decrease.

The positive relationship between debt equity ratio and return on asset indicates that the assets which are financed by the debt have greater returns.

The relationship between debt equity ratio and ROE is negative as shown in table 3. The large debt will decrease the ROE, because in Pakistan economic conditions are poor. Using more debt will favor ROE when economic conditions are good but if economic condition is not good, then increase in debt may hurt ROE.

The results show the positive effect of financial leverage on sales growth of listed sugar companies of Pakistan.

IX. Conclusion

The aim of this study is an attempt to investigate the relationship between financial leverage and financial performance. The results show the positive relationship of debt equity ratio with return on asset and sales growth, and negative relationship of debt equity ratio with earning per share, net profit margin and return on equity. The variation from mean was quite high in debt equity ratio which means that there were massive fluctuations in the data during the study period (2006-2011). The variances of net profit margin and return on equity were also high. EPS and return on asset have relatively less variations from the mean. Sales growth has very low variance indicating that there were fewer fluctuations in the sales growth of the listed sugar companies of Pakistan. The use of debt may make a positive or negative impact on financial performance.

X. Suggestions

Future researchers may extend study period and may also take all the companies from food producer sector of Karachi Stock Exchange. Researcher can also conduct comparative study by taking data from different sectors to check the relationship between financial leverage and financial performance.

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