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Research Article

# An Empirical Analysis on Determinants of Financial Leverage of Listed Manufacturing Firms of India

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## Abstract

This study uses multiple regression models to research core determinants of the financial leverage or capital structure for Indian manufacturing firms. Specific conditional theories of capital structure such as trade-off theory, pecking order theory, stock market theory, bankruptcy theory, and agency theory are analyzed to develop testable hypotheses on deter- minants of manufacturing firms ' capital structure. It was empirically found that the firm's size, age, asset tangibility, asset efficiency, profitability, Tobin's Q, business risk, and ownership structure are statistically significant or associated with the firm financial leverage or Core determinants of Indian capital structure of manufacturing sector.

**KEYWORDS:** Financial leverage, Determinant, Ratio Analysis, Multiple regressions

**JEL classification codes**: G32,O14

## 1. Introduction

Myers (Myers 1984) repeatedly cited the question, "How do firms choose their capital structure?" And the subsequent answer "we don't know" has given rise to the most controversial, debatable, and esoteric issue in corporate finance theory, The central question of finance, that determines firms' selection of capital structure? Asian Contagion of 1997, it's no inheritable new importance within the context of developing economies. The Modigliani-Miller (MM) theory, which argued that capital structure is trivial for the benefit of a company (Hoffmann 2013)It is based on the MM theory of ideal capital market conditions, which are considered practically inaccessible in the real world.

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Rather, other permanent theories such as agency cost theory, Pecking order theory, and exchange theory have been proposed to account for an incomplete capital market. Although these theories present different arguments, they believe that the capital structure is relevant. Nevertheless, there is no single theory that can fully describe the exact effect of capital structure and the success of companies. How does financing interact with the investment? A firm's financial manager must

decide an ideal capital structure because it has an impact on shareholders' funds, and excessive debt levels in the capital structure may increase the likelihood of a firm's bankruptcy if not required. Therefore, it is an important factor in the success of the firm.

## 2. Literature Review

We have extracted various variables used by us in the study after scanning through various literatures. Principles of the capital structure suggest that we can find ideal debt ratios by looking at the trade-off between the benefits and costs of debt financing. However, they do not explain why the observed debt ratios differ among countries. (Modigliani and Miller 1958),noted that the value of a firm is independent of its capital structure in the perfect capital markets with no corporate tax, no transaction and agency fees, and all reliable information is fully stated. According to the trade-off theory (TOT), the optimal capital structure under which the profit of the company is maximized can be achieved by creating a balance or trade-off between companies Tax-free interest gain and the cost of the debt burden of distress. (Bhaduri 2002)examined capital structure in nine major industry groups during 1990-95 and hypothesized that factors could affect growth, cash flow, size, uniqueness, and industry characteristics such as optimal capital structure choice. (Chakraborty 2010)used panel combinations from 1,169 companies in balanced panel technology to capture the determinants of capital structure in India. (Gill and others 2011; Abor 2005)conclusion of Capital structure essential for profit derives from examining the view of capital structure on beneficiary US service and manufacturing companies. This paper's results also show a positive. A lot of literature is concerned with the measurement of performance as profit and its determinants(Doğan 2013; Mirza 2013; Al-Jafari and Al Samman 2015; Akben-Selcuk 2016; Batra and Kalia 2016) are one of the few recent studies that have investigated the same issue. However, most of them have produced mixed results. Existing theoretical claims inflamed for systematic simulation underpinnings of the determinants of the structure of capital. Most studies focus on specific determinants of a firm's capital structure, such as asset stability, size, financial hardship costs, profitability, growth rates, tax rates, gradient debt, interest coverage, liquidity-associated taxes. ((HARRIS and RAVIV 1991; Fama and French 2000; Frank and Goyal 2003; Tong and Green 2005; Psillaki and Daskalakis 2009; Cook and Tang 2010) state that companies make their adjustments to the capital structure of the target structure, quickly taking advantage of the macroeconomic situation. (Lemmon and others 2008)who find such size, market-to-book, profitability, initial leverage, industry duplication, competitiveness, and volatility of cash flows (referred to as the current determinants of capital structure) that are fully differential leverage. Can be proportionately captured when fixed effects are considered. (Lemmon and others 2008)Suggest that the greatest variation in leverage is determined by a time-invariant effect (alternatively known as an unproven permanent component). (Cheng and Tzeng 2011) found that leverage is substantially positively associated to the worth of the business(R and Daddikar 2013)found That there's no big effect of capital gearing on firm value. (Lin and Chang 2011) Point that the debt ratio and firm value are not associated leading to a debt ratio greater than 33.33 percent. To summarize, empirical studies present a diverse and contradictory show in the developing nations, the relation between leverage and corporate interest. In detail, Very few studies exist which review this relationship in developing economies such as India. The study revealed enhances the research on the financial leverage Impact on a company's worth by considering the Link of financial leverage with firm

value in the manufacturing industry of India.

## 3. The objective of the Study

To study and explore empirically the most significant determinant of financial leverage of some selected manufacturing firms in India.

## 4. The rationale of the Study

The global economy is in transition. The global epidemic COVID-19 has been felt in the global manufacturing climate, resulting in a reconstruction of the supply chain and an accelerated restructuring of businesses. According to (‘Insights | India | Cushman & Wakefield’ )annually published global manufacturing risk index among 48 countries in Europe, America, and Asia pacific. India ranks third in the list of the most suitable locations for global manufacturing. In response to the current situation and prospects, India agreed to move forward despite the challenges and secure interest and investment. Many of the firms face financial bankruptcy due to the overburden of their debt or improper capital mix. The recent and most prominent examples are the JP group, ADAG group some of the badly key sectors due to improper capital mix are: steel, power, textiles & jewelry. For a growing economy like India, it becomes important for Indian manufacturing firms to have an optimal capital structure. Thus, Studying is necessary for the variables which significantly determine the financial leverage of Indian manufacturing firms. It finds that China's industrial growth rate is close to one-and-a-half times that of India over the entire period, and the global epidemic of COVID-19 have encouraged the Make in India initiative to bring a share of manufacturing to Asia's third-largest economy is forced from 18 percent to 25 percent by 2022 and 100 million new jobs.. India's rigid labor law is also an obstacle to growth in the manufacturing sector (Fallon and Lucas 1993; Gupta and others 2011). It is very important to identify the relevant debt/equity ratio combination for different types of companies in India. This shows that the current study is very relevant in the current context.

## 5. Research Methodology

### 5.1 Sample

The sample includes some selected listed Indian manufacturing sector firms (grouped by industry) and traded on National Stock Exchange(NSE), and Bombay Stock Exchange (BSE) from 2008-2019. Firms that have missing values in either dependent variables or independent variables throughout the study have been excluded. The sampling frame of 92 listed Indian manufacturing industries for NSE & BSE is being taken and the leverage effect has been considered to be 11 years from 2008-2019. These 92 selected listed companies 15 industries such as Automobile & ancillaries, Chemicals, Cement, Food, sugar & beverage, Metals & Mining, Pharmaceuticals, Textiles, Tires, Paints, Paper & Plastics, Construction, Real estate & Infrastructure, Capital Goods/Machinery, Power, Electrical & Electronics, Oil & Gas industries. Thus, a sample size consisting of 92 firms consisting of a total of 1008 cases will enable us to do a meaningful regression analysis.

**TABLE 1- Shows the sample classification of Indian manufacturing firms with industrial**

**sectors break-up.**

### 5.2 Source

The data of sample companies have been taken from financial statements of these companies published in their annual reports for a continuous period of eleven years from the websites of these companies. To analyze data, Statistical Package for Social Sciences (SPSS) statistical software and MS Excel software has been used for applying the required statistical analysis technique like descriptive statistics, correlation, regression model and testing of various hypotheses.

## 6. Theoretical Framework

### 6.1 Multiple Regression Model

Correlation and Regression are generally performed together. It has a value ranging from 0 (no correlation) to 1 (perfect positive correlation), or -1 (perfect negative correlation). Correlation is usually followed by regression analysis in many applications. The prime purpose of the regression analysis is to describe variations in one variable (called dependent variable) based on variations with one or so other variables (called independent variables). When there is just one dependent variable and one variable independent is used to describe the difference in it, then the model is known as a simple regression. If multiple independent variables are used to describe the difference in a dependent variable, it is called a multiple regression model.

**The general form of** multiple regression models **is as follows:**

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \text{------} \beta_k X_k + \varepsilon}$$

**Which is estimated by the following equation:**

$$\mathbf{\hat{Y} = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + \ldots + b_{kXk}}$$

Where Y is the dependent variable and $x_1$, $x_2$, $x_3$….$x_n$ are the independent variables expected to be associated with y and expected to explain or predict y. $b_1$, $b_2$, $b_3$…$b_n$ are the coefficients of the respective independent variables, which will be determined from the input data. In our study, the following model has been formulated to test the effect of various independent variables on a firm's financial leverage or debt-equity mix.

$$\mathbf{D/E = a + b_1 (AC) + b_2 (DSCR) + b_3 (SG) + b_4 (TQ) + b_5 (ATO) + b_6 (ROA) + b_7 (Age) + b_8 (ROE) + b_9 (OS) + b_{10} (Size) + b_{11} (Risk)}$$

**Where**
Dependent variable:

**D/E = (Debt to Equity Ratio or Financial Leverage)**
Independent variables:
**a = Constant:**
**AC = Asset Composition or Tangibility**
**DSCR = Debt service coverage ratio**
**SG = Sales Growth**
**TQ = Tobin's Q**
**ATO = Asset turnover ratio**
**ROA = Return on Asset**
**Age = No of years since the incorporation of company**
**ROE = Return on Equity**
**OS = Ownership structure (% of shareholding held by promoters)**
**Size = Natural logarithm of total asset**
**Risk = Standard Deviation of EBIT**

### 6.2 Measures

A model has been designed to test the effects of determinants or factors on a debt-equity mix of financial leverage. The dependent variable is the firm's debt-equity ratio, which determines the level of debt financing and equity financing. The firm's debt-equity mix is influenced by many factors like firm size, asset composition, profitability, growth, age, ownership, debt service capacity, and business risk. In our study, we have selected eleven variables such as firm size, asset composition, debt service capacity, business risk, age, ownership, sales growth rate, operational efficiency, and Profitability (return on assets (ROA), return on equity (ROE), and Tobin's Q). These variables have been considered as independent variables.

**TABLE 2: Determinants of capital structure with their measures, relationships of previous empirical studies and relationship established by this study**

**We use the different measures for capital structure as discussed below:**
**Dependent variable:**
Leverage ratio (D/E): **It is calculated by dividing total debt by total equity.**
**Independent variables**:

**Firm size**: The natural logarithm of total assets is used as the proxy for firm size. It implies a large firm with lower asset volatility and better performance. To capture the effects of size on the leverage of the firm, the natural logarithm of sales is used. With this, the effects of size on leverage become nonlinear.

**H1: Firm size is positively associated with financial leverage**

**Asset composition:** The most widely used measure asset composition is measured as total assets upon fixed assets. Tangibility is the ratio of net fixed assets divided by total assets. It shows the fixed asset investment and long-term resources held by the firm. We can relate the firm leverage ratio positively to asset tangibility also (AS = Tangible assets/total assets).

**H2: Asset composition or tangibility is positively associated with financial leverage**

**Debt service capacity:** The debt-service ratio evaluated by operating income ratio to total interest charges shows the ability of the company to meet its interest payments from its annual operating income.

**H3: Debt service capacity is negatively associated with financial leverage**

**Business risk:** The current study uses the standard deviation of profits before interest and tax (EBIT) as an indicator of a firm's risk. It can also be used as the standard of deviation (SD) of the percentage change in operating income**.**

**H4: Business risk or volatility is positively associated with financial leverage.**

**Profitability:** There are various measures of profitability such as ROA, ROE, and profitability margin such as net profit margin, operating profit margin, cash operating profit margin. Several empirical shreds of evidence have found a negative relationship between profitability and financial leverage.

**ROA**: It represents the contribution of fixed assets on profitability creation. ROA can also be called as profitability to asset ratio. ROA is the ratio between net profits after taxes and average total assets. It provides a realistic indication of the firm's performance as it shows the efficiency of total assets in generating profits.

**H5: ROA is negatively associated with financial leverage.**

**Return on equity (ROE):** It reveals how much return a firm is providing to its equity shareholders. It is measured by dividing net income with total equity or net worth.

**H6: ROE is negatively associated with financial leverage**.

**Firm's Valuation: Tobin's Q** is used as a proxy for a firm's valuation by investors. It shows the position of the firm's market value to its replacement cost. Higher the position better will be the firm performance. It is the ratio of market value (Market capitalization + Market or book value of debt) divided by total assets.

**H7: Tobin's Q is positively associated with financial leverage.**

**Growth:** Sales growth is the percentage change in sales on a year to- year basis.

**H8: Sales growth is positively associated with financial leverage.**

**Efficiency:** Asset turnover is used as a proxy measurement of assets efficiency. It is the ratio of net sales divided by total assets. It shows how efficiently the firm's assets have been utilized in generating its revenue.

**H9: Asset turnover ratio is negatively associated with financial leverage.**

**Ownership structure**: it has been proxy by the percentage of shareholding held by promoters of the firm. It is based on agency cost theory and reflects the expectations of the promoters.

**H10: Ownership structure is negatively associated with financial leverage.**

**Age:** Age is calculated as the number of years since the company was incorporated into each year of the period under study.

**H11: Age or life of the firm is positively associated with financial leverage.**

### 6.3 Statistical tools

To study the impact of debt-equity ratio on a firm's capital structure, mean, median, standard deviation, minimum, and maximum have been used for doing the statistical analysis. Apart from these tools, multiple regression analysis has been used to find out the influence of independent variables on the dependent variable with the help of SPSS software. Further, t-test and F-test for ANOVA have also been applied to check the level of the significance of regression coefficients. Durbin-Watson test has been used to show the effect of autocorrelation on regression. The correlation matrix has also been used to find out if there is any multi co-linearity among the independent variables, which would hamper the results of the regression. The effect of multi co-linearity is also obtained from the co-linearity statistics test (variance inflation factor, VIF).

## 7. Data Analysis, Findings and empirical results of the study

### 7.1 Summary of variables of selected companies

Table 3 in this study provides descriptive statistics on eleven determinants of capital structure such as firm size, asset composition, debt service capacity, business risk, age, ownership, sales growth rate, operational efficiency, and Profitability (return on assets (ROA), return on equity (ROE), and Tobin's Q). The averages of all the variables have been found by calculating the value of all the variables for selected companies from 2008-2019.

**TABLE 3: Descriptive statistics of all the selected firms**

### 7.2 Summary of variables of selected industries

Table 4 shows the summary statistics of variables affecting the financial leverage of selected industries. The averages of all the variables have been found by calculating the value of all the variables for selected industries from 2008-2019.

**TABLE4: Summary variables of all the selected industries**

**TABLE5: Mean variables of all the selected industries from the year 2008- 2009 to 2018-2019**

The above table – 5 depicts that Debt equity ratio is very high in case of metal & mining industry (2.42) followed by Textile (1.87) and Paper & Plastic (1.81) and very less in case of Pharmaceutical (.25), Electronics (.26) and Paint (.32) industry. The value of debt service is the highest in oil & gas (1572.12) followed by paint (794.76) industry and the lowest in paper & plastics (3.47) followed by power (4.12), textile (7.27) industry. Business risk is more in the cement industry (0.89) and very less in the transport industry. ROA is the highest in the case of Pharmaceutical (0.13) followed by paint (0.11) industry and the lowest in the case of Construction, Real estate & Infrastructure (0.02), followed by Paper & plastics (0.03) and power (0.04) industry. ROE is the highest in the case of Pharmaceutical (0.20) followed by paint (0.19) and Automobile (0.19) industry and the lowest in case of Paper & plastics (-0.22), construction & infra (0.06) and power (0.08) industry. Tobin's Q is very high in the case of Paint (4.14), followed by pharmaceutical (3.47) and Automobile (3.44) and very low in the case of paper & plastics (0.7) industry. This shows that the market gives high valuation to paint, tire & automobile industry while disfavor paper & plastic industry. The average value of firm size for 11 years is high in the oil & gas industry (11.73). The firm size is lowest in the Paint (7.48) industry. The total value of asset composition is more in the case of Paper & Plastic (0.63) followed by power (0.5) and cement (0.49) as compared to other industries. The asset composition is lowest in the case of Construction, Real estate & Infrastructure (0.11) industry.

### 7.3 **Test of significance**

To know the statistical significance of financial leverage across different selected Indian industries and eleven determinants of financial leverage across selected industries, one-way ANOVA concept of statistical inference has been used.

**TABLE 6: ANOVA of all the variables of financial leverage for selected Industries**

**H12: There is no significant difference in the use and application of financial leverage (Debt equity mix) across different Indian manufacturing industries**.

The output from this analysis is shown in the above ANOVA Table 6. The calculated value of the F statistics for the debt-equity ratio is 3.625. At a 5% level of significance and 14 degrees of freedom, financial leverage (D/E ratio) is statistically significant. P-value (.000) is less than 0.05.so, the null hypothesis is not accepted. Hence, we conclude that the application of financial leverage across different Indian manufacturing industries is statistically and significantly different.

**H13: Determinants of financial leverage are not industry-specific (macro factors) characteristics.**

ANOVA Table6, it is evident that nine out of eleven determinant of financial leverage across different Indian manufacturing industries are statistically and significantly different. The two variables, Debt service capacity and sales growth across different Indian manufacturing industries are not statistically and significantly different. So, the null hypothesis is not accepted. Hence, we conclude that the determinant of financial leverage is industry-specific (macro factor)

characteristics.

## 8.Correlation matrix

To study the relationship among financial variables, Tables 7 & 8 shows the summary statistics of the correlation of variables affecting the capital structure pattern of selected industries.

**TABLE 7: Correlation among financial variables and their significance**

**TABLE 8: Correlation among financial variables**

It has been observed that the debt-equity ratio is positively associated with asset size, asset composition, Tobin's Q, Age, ownership & business risk, and are negatively associated with, debt service capacity, sales growth, Asset turnover ratio, return on equity and return on assets. This is a clear indication that older & larger firm size having higher asset composition (more fixed asset), larger ownership structure are well equipped to handle greater business risk and are more comfortable with financial leverage. The existence of a correlation of about 0.8 or larger indicates the problem of multi-co-linearity (Michael S. Lewis-Beck,1993). The analysis of the correlation matrix shows that none of the variables correlates with about 0.8 or more. So there is no multi-co-linearity in variables. Hence, all the independent variables are appropriate for testing the capital structure determinants of manufacturing companies. So, the correlation matrix has been used to find out any multi-co-linearity among the independent variables which would hamper the results of the regression.

## 9. Multiple Regression Model of D/E Ratio

**Multiple regression analysis has been used to examine the relationship between the debt-equity ratio and the characteristics of firms. The regression results for the debt-equity ratio are given in tables given below (Tables 9 to 12).**

**TABLE 9: Variables entered**

**TABLE 10: Model Summary**

**TABLE 11: ANOVA of the regression model**

**TABLE 12: Regression coefficient of multiple regression model**

**Dependent variable:**
**D/E = (Debt to Equity Ratio or Financial Leverage)**
**Independent variables:**
**AC = Asset Composition/Tangibility**
**DSCR = Debt service coverage ratio**
**SG = Sales Growth**
**TQ = Tobin's Q**
**ATO = Asset turnover ratio**
**ROA = Return on Asset**

**Age = No of years since the incorporation of the company**
**ROE = Return on Equity**
**OS = ownership structure (% of shareholding held by promoters**
**Size = Natural logarithm of total asset**
**Risk = Standard Deviation of EBIT**
**Input Data set consisting of 1008 observations**

### 9.1 Multiple regression analysis

Multiple regression analysis has been used to examine the relationship between the debt-equity ratio and the characteristics of firms. The regression results for the debt-equity ratio are given in tables given below (Tables 9 to 12). From the Model Summary and ANOVA Table 10 & 11, The F ratio value (60.312) shows that the multiple correlation coefficients are significant at 1 percent level of significance. Hence, it is concluded that the Regression Model is statistically significant.

The $R^2$ (Coefficient of determination) value is 0.400 and the adjusted $R^2$ value is 0.393, this indicates that 40% of the regression model is explained by all the eleven independent variables taken together. This shows that the results of the regression analysis on the various determinants of the coefficient of capital structure in the majority are consistent with the various research studies.

Also, the impact of multi-co linearity on the regression model is not present because the difference between $R^2$ value and adjusted $R^2$ value is negligible. The effect of multi-co linearity is also obtained from the co-linearity statistics test (variance inflation factor, VIF).VIF of all the parameters (varies from Min: 1.011 to Max: 2.308) which are well below the critical level of 5. So, the overall impact of multi-collinearity on the regression model is very much insignificant.

Durbin-Watson test from above Table 10 shows that the effect of autocorrelation on the regression is very insignificant (value of Durbin-Watson test is 0.910 which indicates that serial correlation is not present).

In the empirical analysis of Table 12, it has been found that variables like firm size, growth, profitability (Return on assets (ROA), Return of equity (ROE)), efficiency (Asset turnover ratio) and ownership are negative and significantly correlated with the financial leverage of the firm. Other variables like age, tangibility, business risk, and a firm's valuation (Tobin's) are positively and significantly correlated with the financial leverage of the firm. Debt service capacity is found to be negatively correlated with financial leverage but statistically insignificant. Business growth is found to be positively correlated with financial leverage but statistically insignificant.

Regression equation obtained from the Analysis is:

With Intercept (Unstandardized Coefficients)

D/E = .3.243 + 1.509 (AC) + .000 (DSCR) + .016 (SG) + .602 (TQ) -.500 (ATO) - 12.429(ROA)

+ .007(Age) - .817(ROE) – 1.441(OS) - .274(Size) + .000(Risk)

Without Intercept (Standardized Coefficients)

D/E = .098 (AC) - .010 (DSCR) + .003 (SG) + .690 (TQ) -.138 (ATO) - .269(ROA) + .058(Age) - .127(ROE) - .076(OS) - .150(Size) + .152(Risk)

## 10 Discussion of findings

It is found from the analysis that firm size has a negative relation (β value is -.15) to financial leverage and also it is significant (p =.000).

Hence, Hypothesis **H1** is rejected and we conclude that firm size is a negative and significant relation with financial leverage. Myers and Majluf (1984) suggested that information asymmetries are less in the case of larger firms and can have the advantage to issue equity instead of debt.

It is found from the analysis that asset composition has a positive (β value is 0.098) relationship with debt-equity ratio and it is also significant (p-value = .000). Strong support is found for **H2**. Thus, the results are matching with the Trade-off theory as far as the Indian scenario is concerned. This indicates that there exists a direct relationship between asset composition and debt-equity ratio. Based on agency theory a large number of tangible assets leads to higher leverage. Empirical studies by (RAJAN and ZINGALES 1995) also confirm the above contribution. Hence, the results of our study are also matching with the agency theory.

The negative (β value is -.010) but insignificant (p = .699) relationship of debt service capacity with debt-equity ratio shows no strong support for **H3**. The results of our study match with the findings of earlier studies done by (Booth and others 2001) However, our findings contradict the findings of (HARRIS and RAVIV 1991)It has been found that the high debt level in capital structure increases the chances of bankruptcy and bank costs of the enterprise. It leads to chances of cash flows to be less than the amount required for servicing the debt. So, a high debt service ratio indicates a higher debt capacity of enterprises. Debt capacity theory suggests a positive relationship between debt service capacity and capital structure of enterprises. This study however contradicts the debt capacity theory. Higher leverage will lead to poor debt service if sale revenue and cost structure does not support the firms.

Strong support is found for **H4** as business risk is positively (β value is 0.152) associated with the leverage which is also found to be significant (P-value = .000). The more the use of debt, the more is the business risk. Thus, the results are matching with the Trade-off theory. But the agency and bankruptcy cost theories suggest a negative relationship between capital structure and business risk. As per bankruptcy theory, the less stable earnings of the enterprise, the greater is the chance of business failure, and more will be the bankruptcy costs. So as the chances of bankruptcy increase, the agency problems associated with debt aggravate. So, as per this theory, with the increase in business risk, the debt level in a capital structure should decrease (Taggart 1985). The studies carried out in India and Nepal also exhibit contradictory evidence on the

relation between risk and debt level. (Sharma 1983) shows evidence against this and Garg (1988) do for relation consistent with bankruptcy and agency cost theories.

Hypothesis **H5** states that ROA is negatively associated with financial leverage and Hypothesis **H6** states that ROE is negatively associated with financial leverage. Hypothesis **H5 & H6** is accepted as the results indicate the negative (β value is-.269 & -.127 respectively) and are having significant (p = .000 each) relationship between profitability (ROA & ROE) and debt-equity ratio. It supports the pecking order theory. Strong support is found for **H5** & **H6** as profitability is an important determinant of debt-equity ratios of Indian firms when it is significant and has a moderate negative correlation with debt-equity ratio.

The static trade-off hypothesis pleads for the low level of debt capital of risky firms (Myers 1984). The higher profitability of firms implies higher debt capacity and less risky to debt holders. So as per static trade-off theory, capital structure and profitability are positively associated. But pecking order theory suggests that this relation is negative. Firms prefer internal financing and follow strict dividend policy. If internal funds are not sufficient to finance the financial requirements of the firm, it prefers debt financing to equity financing(Myers 1984). Most of the studies support the pecking order theory. Studies of (RAJAN and ZINGALES 1995; TITMAN and WESSELS 1988; Kester 1986; Allen 1995)show a negative relationship between the level of debt in capital structure and profitability. Indian and Nepalese studies also show the same evidence as foreign studies do (Baral, 1996). Only a few studies show evidence in favor of the static trade-off hypothesis.

Hypothesis **H7** states that Tobin's Q is positively associated with financial leverage. It is found from the analysis that Tobin's Q has a positive (β value is .690) relationship with the debt-equity ratio and also it is statistically significant (p = .000). So, empirically this hypothesis found strong acceptance and we conclude that Tobin's Q is positively and significantly associated with financial leverage. It also found support from a capital market theory which state that firms which command strong market capitalization are getting debt financing easily from banks & financial institution for their capital expenditure plan.

Hypothesis **H8** states that sales growth is positively associated with financial leverage. It is found from the analysis that sales growth has a positive (β value is 0.003) relationship with debt-equity ratio but it is not statistically significant (p = .917). So, this hypothesis is not accepted and we conclude that sales growth is positively associated with leverage but it is not statistically significant at 5% level of significance.

Hypothesis **H9** states that the Asset turnover ratio is negatively associated with financial leverage. It is found from the analysis that the Asset turnover ratio has a negative (β value is -.138) relationship with the debt-equity ratio and also it is statistically significant (p = .000). So, empirically this hypothesis found strong acceptance and we conclude that the Asset turnover ratio which is proxy for asset efficiency is negatively and significantly associated with financial leverage. This also found support from the Trade-off theory.

Hypothesis **H10** states that Ownership structure is negatively associated with financial leverage.

It is found from the analysis that ownership structure has a negative (β value is -.076) relationship with debt-equity ratio and also it is statistically significant (p = .003). So, empirically this hypothesis found strong acceptance and we conclude that ownership structure which is proxy by the percentage of shareholding held by promoters is negatively and significantly associated with financial leverage. This also found support from the Agency cost theory and pecking order theory.

Hypothesis **H11** states that Age or life of the firm is positively associated with financial leverage. It is found from the analysis that Age or life of the firm has a positive (β value is .058) relationship with debt-equity ratio and also it is statistically significant (p = .026). So, empirically this hypothesis found strong acceptance and we conclude that the Age of the firm is positively and significantly associated with financial leverage. This also supports the capital market theory that age or number of years since the incorporation of the company implies better credibility and reputation in the market (Muritala 2012).

From testing of hypothesis **H12,** it has been concluded that the application of financial leverage (debt-equity mix) across different Indian manufacturing industries is statistically and significantly different.

From testing of hypothesis **H13,** it has been concluded that determinant of financial leverage is industry-specific (macro factor) characteristics.

## Summary and conclusion

This paper studies the key determinants of capital structure for Indian manufacturing firms and various theory implications, i.e. trade-off vs pecking order are more applicable in the current Indian manufacturing sector scenario. It was empirically found that the firm's size, age, asset tangibility, asset efficiency, profitability, Tobin's Q, business risk, and ownership structure are statistically significantly correlated with the firm financial leverage or key determinants of capital structure in the Indian manufacturing sector. Also, other variables like debt service capacity and sales growth are empirically found to be insignificant to determine the capital structure of the Indian manufacturing sector. It is also found that financial leverage is industry-specific (macro factor) characteristics and different Indian manufacturing industries are applying capital mix in different ways. There are no single theory implications, i.e. trade-off theory, pecking order theory, agency theory, bankruptcy theory, and capital market theory which can explain the capital structure nature of the Indian manufacturing sector and it is rather a mix of all the theories. The research findings would further boost the capital structure literature and are significant for the Indian manufacturing firm's decisions as it involves the most current stats and covers the period of post-subprime crisis from the year 2008-2019. Besides, analytical results will assist managers in making effective decisions about optimal capital structure.

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## List of Tables

**TABLE 1: Sample Classification**

| Industry | No. of companies | % of the total sample | No. of selected Cases |
|---|---|---|---|
| **Automobile & ancillaries** | **10** | **11%** | **109** |
| **Chemicals** | **5** | **5%** | **55** |
| **Cement** | **4** | **4%** | **44** |
| **Food, sugar & beverage** | **11** | **12%** | **118** |
| **Metals & Mining** | **10** | **11%** | **110** |
| **Pharmaceuticals** | **5** | **5%** | **55** |
| **Textiles** | **5** | **5%** | **55** |
| **Tires** | **6** | **7%** | **66** |
| **Paints** | **5** | **5%** | **55** |
| **Paper & Plastics** | **5** | **5%** | **55** |
| **Construction, Real estate & Infrastructure** | **6** | **7%** | **66** |
| **Capital Goods/Machinery** | **4** | **4%** | **44** |
| **Power** | **5** | **5%** | **55** |
| **Electrical & Electronics** | **5** | **5%** | **55** |
| **Oil & Gas** | **6** | **7%** | **66** |
| Total Sample | 92 | 100% | 1008 |

**TABLE 2: Determinants of capital structure with their measures, relationships of previous empirical studies and relationship established by this study**

| Variables | Measure | The relationship established by previous studies | The relationship established by this study | Theory |
|---|---|---|---|---|
| **Tangibility** | **Fixed Assets/ Total Assets** | + | + & ** | TOT/AT |
| **Debt service capacity** | **EBIT/Interest** | - | - | TOT |
| **Sales growth** | **% change in sales over year-to-year basis** | + | + | AT |
| **Tobin's Q** | $\frac{(\text{Market Capitalisation} + \text{Book Value of D})}{\text{Total Assets}}$ | + | + & ** | CMT |
| **Asset** | **Net sales/Total assets** | - | - & ** | TOT |

| | | | | |
|---|---|---|---|---|
| **turnover ratio** | | | | |
| **Return on asset** | **Profit after tax/Total assets** | - | - & ** | POT/TOT |
| **Age** | **No of years since the incorporation of company** | + | + & ** | |
| **Return on equity** | **Profit after tax/Net worth** | - | - & ** | POT/AT |
| **Ownership** | **% of shareholding held by promoters** | - | - & ** | AT/POT |
| **Firm Size** | **Natural logarithm of total assets** | + | - & ** | TOT |
| **Business Risk** | **The standard deviation of EBIT** | - | + & ** | AT/BT |

**+/- Positively and negatively associated respectively with leverage**
**** .Significant at the 0.01 level (2-tailed).**
TOT = Trade-off theory; POT = Pecking order theory; AT = Agency theory; BT = Bankruptcy theory; CMT = Capital market theory

**TABLE 3: Descriptive statistics of all the selected firms**

| Descriptive Statistics of all the selected firms | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variables | N | Mean | Std. Error of Mean | Median | Std. Deviation | Minimum | Maximum |
| D/E | **1008** | **1.01** | **0.10** | **0.49** | **3.07** | **-6.48** | **40.07** |
| Tangibility | **1008** | **0.37** | **0.01** | **0.36** | **0.20** | **0.00** | **0.94** |
| DSCR | **1008** | **237.62** | **93.01** | **5.49** | **2953.07** | **-7.66** | **88222.87** |
| Growth | **1008** | **0.15** | **0.02** | **0.11** | **0.50** | **-0.82** | **11.98** |
| Tobin's Q | **1008** | **2.29** | **0.11** | **1.21** | **3.52** | **0.00** | **38.36** |
| Asset Turnover | **1008** | **1.03** | **0.03** | **0.84** | **0.85** | **0.00** | **8.44** |
| ROA | **1008** | **0.07** | **0.00** | **0.06** | **0.07** | **-0.27** | **0.38** |
| AGE | **1008** | **47.31** | **0.84** | **43.00** | **26.62** | **1.00** | **140.00** |
| ROE | **1008** | **0.13** | **0.02** | **0.14** | **0.48** | **-9.61** | **6.81** |
| Ownership | **1008** | **0.56** | **0.01** | **0.55** | **0.16** | **0.17** | **1.00** |
| Size | **1008** | **8.82** | **0.05** | **8.58** | **1.68** | **4.95** | **13.56** |
| Risk | **1008** | **1177.51** | **71.58** | **233.30** | **2272.74** | **12.56** | **13056.36** |

**TABLE 4: Summary variables of all the selected industries**

| Summary of Variables of all the selected industries |
|---|

| Industry | | D/E | Tangibility | DSCR | Growth | Tobin's Q | Asset Turnover | ROA | AGE | ROE | Ownership | Size | Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automobile & ancillaries | N | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 | 109 |
| | Mean | 0.51 | 0.34 | 324.51 | 0.17 | 3.44 | 1.42 | 0.10 | 37.90 | 0.19 | 0.59 | 8.47 | 1535.01 |
| | Median | 0.17 | 0.35 | 15.62 | 0.13 | 2.46 | 1.29 | 0.09 | 33.00 | 0.18 | 0.60 | 8.72 | 366.85 |
| | S.D. | 0.91 | 0.12 | 1098.55 | 0.24 | 3.70 | 0.48 | 0.07 | 18.37 | 0.15 | 0.14 | 1.93 | 2548.15 |
| | S.E | 0.09 | 0.01 | 105.22 | 0.02 | 0.35 | 0.05 | 0.01 | 1.76 | 0.01 | 0.01 | 0.18 | 244.07 |
| | Max | 6.73 | 0.58 | 10115.11 | 1.52 | 22.97 | 2.62 | 0.26 | 74.00 | 0.65 | 0.75 | 12.71 | 8467.08 |
| | Min | 0.00 | 0.11 | -1.16 | -0.32 | 0.49 | 0.78 | -0.09 | 5.00 | -0.48 | 0.33 | 5.44 | 36.30 |
| Chemicals | N | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 |
| | Mean | 0.66 | 0.37 | 22.77 | 0.09 | 2.50 | 0.83 | 0.09 | 42.00 | 0.16 | 0.40 | 8.28 | 233.80 |
| | Median | 0.61 | 0.35 | 4.16 | 0.13 | 1.48 | 0.80 | 0.07 | 34.00 | 0.16 | 0.31 | 8.29 | 190.23 |
| | S.D. | 0.48 | 0.20 | 53.28 | 0.14 | 2.58 | 0.29 | 0.05 | 17.95 | 0.07 | 0.19 | 0.87 | 94.96 |
| | S.E | 0.06 | 0.03 | 7.18 | 0.02 | 0.35 | 0.04 | 0.01 | 2.42 | 0.01 | 0.03 | 0.12 | 12.80 |
| | Max | 1.61 | 0.72 | 218.76 | 0.27 | 11.79 | 1.38 | 0.22 | 80.00 | 0.31 | 0.71 | 9.56 | 418.74 |
| | Min | 0.00 | 0.08 | 1.62 | -0.56 | 0.66 | 0.24 | 0.02 | 24.00 | 0.03 | 0.17 | 6.69 | 168.50 |
| Cement | N | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 | 44.00 |
| | Mean | 0.49 | 0.49 | 9.82 | 0.12 | 1.43 | 0.71 | 0.06 | 36.75 | 0.13 | 0.60 | 9.19 | 498.25 |
| | Media | 0.42 | 0.60 | 6.94 | 0.09 | 1.54 | 0.70 | 0.06 | 19.00 | 0.12 | 0.63 | 8.96 | 306.41 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **n** | | | | | | | | | | | | |
| | **S.D.** | **0.41** | **0.19** | **7.90** | **0.15** | **0.64** | **0.13** | **0.04** | **34.24** | **0.07** | **0.06** | **0.83** | **445.56** |
| | **S.E** | **0.06** | **0.03** | **1.19** | **0.02** | **0.10** | **0.02** | **0.01** | **5.16** | **0.01** | **0.01** | **0.13** | **67.17** |
| | **Max** | **1.47** | **0.70** | **29.67** | **0.91** | **2.77** | **0.95** | **0.18** | **1000** | **0.31** | **0.67** | **11.07** | **1233.18** |
| | **Min** | **0.00** | **0.05** | **1.64** | **-0.04** | **0.27** | **0.49** | **0.01** | **9.00** | **0.03** | **0.46** | **7.63** | **146.99** |
| **Food, sugar & beverage** | **N** | **1180.00** | **118.00** | **118.00** | **118.00** | **118.00** | **118.00** | **1180.00** | **1180.00** | **1180.00** | **118.00** | **1180.00** | **118.00** |
| | **Mean** | **1.18** | **0.36** | **178.54** | **0.12** | **3.04** | **1.84** | **0.08** | **38.48** | **0.22** | **0.51** | **7.62** | **323.39** |
| | **Median** | **0.86** | **0.34** | **4.15** | **0.11** | **1.82** | **1.17** | **0.07** | **30.50** | **0.15** | **0.50** | **7.89** | **114.66** |
| | **S.D.** | **1.38** | **0.18** | **1069.93** | **0.20** | **3.72** | **1.67** | **0.08** | **24.32** | **0.28** | **0.14** | **1.00** | **550.36** |
| | **S.E** | **0.13** | **0.02** | **98.49** | **0.02** | **0.34** | **0.15** | **0.01** | **2.24** | **0.03** | **0.01** | **0.09** | **50.66** |
| | **Max** | **7.44** | **0.82** | **11168.31** | **1.45** | **20.69** | **8.44** | **0.34** | **86.00** | **1.42** | **0.75** | **9.79** | **1981.70** |
| | **Min** | **0.00** | **0.03** | **0.26** | **-0.35** | **0.00** | **0.45** | **-0.03** | **1.00** | **-0.23** | **0.26** | **5.39** | **12.56** |
| **Metals & Mining** | **N** | **1100.00** | **110.00** | **110.00** | **110.00** | **110.00** | **110.00** | **1100.00** | **1100.00** | **1100.00** | **110.00** | **1100.00** | **110.00** |
| | **Mean** | **2.42** | **0.45** | **96.16** | **0.24** | **3.22** | **0.62** | **0.07** | **44.70** | **0.09** | **0.59** | **9.82** | **1981.62** |
| | **Median** | **0.48** | **0.43** | **4.14** | **0.10** | **0.88** | **0.48** | **0.05** | **43.50** | **0.09** | **0.59** | **10.41** | **1614.90** |
| | **S.D.** | **8.08** | **0.21** | **318.04** | **1.17** | **7.95** | **0.50** | **0.08** | **24.39** | **0.26** | **0.21** | **1.72** | **1773.44** |
| | **S.E** | **0.77** | **0.02** | **30.32** | **0.11** | **0.76** | **0.05** | **0.01** | **2.33** | **0.02** | **0.02** | **0.16** | **169.09** |
| | **Max** | **40.07** | **0.94** | **2657.82** | **11.98** | **38.36** | **2.80** | **0.38** | **112.0** | **1.27** | **1.00** | **12.12** | **4733.20** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 0 | | | | |
| | Min | -6.48 | 0.01 | -7.66 | -0.67 | 0.05 | 0.12 | -0.07 | 13.00 | -1.97 | 0.31 | 5.83 | 79.29 |
| Pharmaceuticals | N | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 |
| | Mean | 0.25 | 0.32 | 133.31 | 0.15 | 3.47 | 0.75 | 0.13 | 39.20 | 0.20 | 0.51 | 8.71 | 639.48 |
| | Median | 0.20 | 0.32 | 31.23 | 0.14 | 3.13 | 0.70 | 0.11 | 31.00 | 0.18 | 0.47 | 9.04 | 575.17 |
| | S.D. | 0.29 | 0.08 | 351.03 | 0.17 | 1.88 | 0.20 | 0.06 | 21.55 | 0.09 | 0.19 | 1.09 | 353.48 |
| | S.E | 0.04 | 0.01 | 47.33 | 0.02 | 0.25 | 0.03 | 0.01 | 2.91 | 0.01 | 0.03 | 0.15 | 47.66 |
| | Max | 1.58 | 0.56 | 2257.04 | 0.83 | 9.97 | 1.26 | 0.29 | 84.00 | 0.41 | 0.75 | 9.89 | 1277.06 |
| | Min | 0.00 | 0.20 | 2.18 | -0.53 | 0.65 | 0.29 | 0.03 | 14.00 | 0.05 | 0.25 | 6.13 | 227.81 |
| Textiles | N | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 | 55.00 |
| | Mean | 1.87 | 0.36 | 7.27 | 0.11 | 1.48 | 0.66 | 0.04 | 83.00 | 0.17 | 0.45 | 8.67 | 407.84 |
| | Median | 0.97 | 0.37 | 1.95 | 0.09 | 1.25 | 0.69 | 0.03 | 83.00 | 0.08 | 0.44 | 8.55 | 366.29 |
| | S.D. | 3.37 | 0.11 | 10.57 | 0.18 | 0.71 | 0.16 | 0.05 | 31.30 | 0.93 | 0.12 | 0.68 | 287.32 |
| | S.E | 0.45 | 0.02 | 1.43 | 0.02 | 0.10 | 0.02 | 0.01 | 4.22 | 0.13 | 0.02 | 0.09 | 38.74 |
| | Max | 21.86 | 0.56 | 43.17 | 0.72 | 3.87 | 0.93 | 0.24 | 140.00 | 6.81 | 0.67 | 10.89 | 912.93 |
| | Min | 0.03 | 0.10 | -0.13 | -0.45 | 0.60 | 0.29 | -0.08 | 36.00 | -1.15 | 0.25 | 7.75 | 80.71 |
| Tires | N | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 | 66.00 |
| | Mean | 0.94 | 0.46 | 10.62 | 0.15 | 1.12 | 1.29 | 0.07 | 37.00 | 0.18 | 0.45 | 8.24 | 371.88 |
| | Median | 0.66 | 0.48 | 5.98 | 0.12 | 1.04 | 1.31 | 0.07 | 35.50 | 0.19 | 0.47 | 8.44 | 286.71 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **S.D.** | **0.73** | **0.09** | **18.36** | **0.27** | **0.63** | **0.39** | **0.04** | **18.72** | **0.10** | **0.10** | **0.90** | **294.31** |
| | **S.E** | **0.09** | **0.01** | **2.26** | **0.03** | **0.08** | **0.05** | **0.01** | **2.30** | **0.01** | **0.01** | **0.11** | **36.23** |
| | **Max** | **2.99** | **0.59** | **117.72** | **1.95** | **3.65** | **2.37** | **0.21** | **68.00** | **0.47** | **0.58** | **9.81** | **987.79** |
| | **Min** | **0.14** | **0.25** | **0.40** | **-0.49** | **0.35** | **0.60** | **-0.02** | **10.00** | **-0.03** | **0.27** | **5.66** | **80.94** |
| **Paints** | **N** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** |
| | **Mean** | **0.32** | **0.27** | **794.76** | **0.11** | **4.14** | **1.36** | **0.11** | **85.20** | **0.19** | **0.65** | **7.48** | **268.83** |
| | **Median** | **0.04** | **0.29** | **50.30** | **0.12** | **3.47** | **1.40** | **0.11** | **90.00** | **0.21** | **0.69** | **7.63** | **207.88** |
| | **S.D.** | **0.57** | **0.09** | **3347.01** | **0.14** | **2.97** | **0.35** | **0.07** | **19.02** | **0.15** | **0.09** | **1.03** | **293.06** |
| | **S.E** | **0.08** | **0.01** | **451.31** | **0.02** | **0.40** | **0.05** | **0.01** | **2.57** | **0.02** | **0.01** | **0.14** | **39.52** |
| | **Max** | **2.21** | **0.47** | **19852.14** | **0.81** | **10.88** | **2.06** | **0.27** | **117.00** | **0.50** | **0.76** | **9.48** | **827.49** |
| | **Min** | **0.00** | **0.10** | **-2.73** | **-0.23** | **0.68** | **0.50** | **-0.14** | **55.00** | **-0.38** | **0.50** | **5.21** | **32.52** |
| **Paper & Plastics** | **N** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** |
| | **Mean** | **1.81** | **0.63** | **3.47** | **0.10** | **0.70** | **0.61** | **0.03** | **54.20** | **-0.22** | **0.45** | **7.75** | **130.23** |
| | **Median** | **1.17** | **0.65** | **2.18** | **0.08** | **0.67** | **0.62** | **0.03** | **56.00** | **0.09** | **0.43** | **7.91** | **126.39** |
| | **S.D.** | **3.79** | **0.11** | **4.14** | **0.19** | **0.16** | **0.27** | **0.06** | **11.60** | **1.65** | **0.08** | **0.56** | **56.67** |
| | **S.E** | **0.51** | **0.01** | **0.56** | **0.03** | **0.02** | **0.04** | **0.01** | **1.56** | **0.22** | **0.01** | **0.08** | **7.64** |
| | **Max** | **25.83** | **0.79** | **20.44** | **0.70** | **1.15** | **1.16** | **0.17** | **74.00** | **0.27** | **0.57** | **8.64** | **232.70** |
| | **Min** | **0.06** | **0.34** | **-1.96** | **-0.61** | **0.37** | **0.05** | **-0.18** | **30.00** | **-9.61** | **0.25** | **6.61** | **73.34** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Construction, Real estate & Infrastructure** | **N** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** |
| | **Mean** | **1.23** | **0.11** | **64.49** | **0.15** | **1.20** | **0.54** | **0.02** | **53.33** | **0.06** | **0.64** | **8.86** | **190.96** |
| | **Median** | **0.82** | **0.11** | **1.54** | **0.05** | **0.83** | **0.63** | **0.02** | **52.50** | **0.07** | **0.68** | **9.03** | **130.50** |
| | **S.D.** | **1.08** | **0.10** | **320.09** | **0.44** | **0.94** | **0.38** | **0.06** | **29.20** | **0.23** | **0.17** | **1.09** | **152.60** |
| | **S.E** | **0.13** | **0.01** | **39.40** | **0.05** | **0.12** | **0.05** | **0.01** | **3.59** | **0.03** | **0.02** | **0.13** | **18.78** |
| | **Max** | **4.00** | **0.38** | **2379.43** | **2.33** | **4.66** | **1.17** | **0.14** | **95.00** | **0.35** | **0.90** | **10.53** | **520.54** |
| | **Min** | **0.00** | **0.00** | **0.00** | **-0.65** | **0.32** | **0.02** | **-0.27** | **13.00** | **-1.52** | **0.28** | **6.52** | **86.32** |
| **Capital Goods/Machinery** | **N** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** | **44.00** |
| | **Mean** | **0.34** | **0.20** | **25.31** | **0.06** | **1.72** | **0.60** | **0.05** | **45.25** | **0.12** | **0.66** | **9.55** | **1469.83** |
| | **Median** | **0.20** | **0.14** | **5.75** | **0.04** | **1.74** | **0.62** | **0.04** | **50.00** | **0.11** | **0.65** | **9.02** | **920.53** |
| | **S.D.** | **0.39** | **0.19** | **54.16** | **0.15** | **1.10** | **0.33** | **0.04** | **18.45** | **0.09** | **0.10** | **1.07** | **1565.90** |
| | **S.E** | **0.06** | **0.03** | **8.16** | **0.02** | **0.17** | **0.05** | **0.01** | **2.78** | **0.01** | **0.01** | **0.16** | **236.07** |
| | **Max** | **1.19** | **0.75** | **208.64** | **0.38** | **4.33** | **1.18** | **0.12** | **70.00** | **0.30** | **0.81** | **11.20** | **3920.88** |
| | **Min** | **0.00** | **0.05** | **-2.31** | **-0.31** | **0.00** | **0.11** | **-0.02** | **11.00** | **-0.04** | **0.52** | **8.34** | **117.40** |
| **Power** | **N** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** |
| | **Mean** | **0.92** | **0.50** | **4.12** | **0.24** | **1.11** | **0.18** | **0.04** | **43.40** | **0.08** | **0.67** | **10.95** | **1862.85** |
| | **Median** | **0.65** | **0.65** | **3.40** | **0.09** | **0.98** | **0.13** | **0.04** | **36.00** | **0.10** | **0.75** | **10.88** | **669.35** |
| | **S.D.** | **0.72** | **0.31** | **2.73** | **0.96** | **0.42** | **0.14** | **0.03** | **27.40** | **0.07** | **0.19** | **0.91** | **1964.41** |
| | **S.E** | **0.10** | **0.04** | **0.37** | **0.13** | **0.06** | **0.02** | **0.00** | **3.69** | **0.01** | **0.03** | **0.12** | **264.88** |
| | **Ma** | **2.4** | **0.89** | **11.4** | **6.1** | **2.5** | **0.45** | **0.0** | **10** | **0.1** | **0.90** | **12.** | **548** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **x** | **8** | | **5** | **7** | **4** | | **8** | **0.00** | **7** | | **58** | **3.67** |
| | **Min** | **0.00** | **0.00** | **0.00** | **-0.82** | **0.35** | **0.00** | **-0.08** | **14.00** | **-0.24** | **0.31** | **9.54** | **296.38** |
| **Electrical & Electronics** | **N** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** | **55.00** |
| | **Mean** | **0.26** | **0.25** | **165.89** | **0.24** | **2.34** | **1.34** | **0.10** | **44.80** | **0.17** | **0.57** | **7.52** | **168.03** |
| | **Median** | **0.08** | **0.24** | **22.91** | **0.14** | **1.95** | **1.39** | **0.11** | **33.00** | **0.18** | **0.60** | **7.88** | **188.37** |
| | **S.D.** | **0.33** | **0.11** | **412.90** | **0.54** | **1.56** | **0.29** | **0.06** | **22.67** | **0.10** | **0.07** | **1.10** | **99.75** |
| | **S.E** | **0.04** | **0.02** | **55.67** | **0.07** | **0.21** | **0.04** | **0.01** | **3.06** | **0.01** | **0.01** | **0.15** | **13.45** |
| | **Max** | **1.46** | **0.49** | **2571.39** | **3.98** | **6.73** | **1.77** | **0.18** | **81.00** | **0.38** | **0.75** | **9.01** | **306.98** |
| | **Min** | **0.00** | **0.06** | **-1.51** | **-0.08** | **0.15** | **0.46** | **-0.04** | **16.00** | **-0.14** | **0.46** | **4.95** | **25.22** |
| **Oil & Gas** | **N** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** | **66.00** |
| | **Mean** | **0.68** | **0.47** | **1572.12** | **0.10** | **0.98** | **1.56** | **0.06** | **45.17** | **0.15** | **0.58** | **11.73** | **6600.34** |
| | **Median** | **0.50** | **0.47** | **12.24** | **0.10** | **0.93** | **1.28** | **0.06** | **48.00** | **0.13** | **0.55** | **11.72** | **4807.96** |
| | **S.D.** | **0.62** | **0.10** | **10897.11** | **0.14** | **0.34** | **0.97** | **0.03** | **16.22** | **0.06** | **0.10** | **0.82** | **4380.39** |
| | **S.E** | **0.08** | **0.01** | **1341.34** | **0.02** | **0.04** | **0.12** | **0.00** | **2.00** | **0.01** | **0.01** | **0.10** | **539.19** |
| | **Max** | **2.36** | **0.69** | **88222.87** | **0.39** | **1.90** | **3.59** | **0.15** | **67.00** | **0.31** | **0.80** | **13.56** | **13056.36** |
| | **Min** | **0.00** | **0.27** | **1.41** | **-0.26** | **0.53** | **0.29** | **0.01** | **16.00** | **0.05** | **0.45** | **10.15** | **1592.23** |
| **Total** | **N** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** | **1008** |
| | **Mean** | **1.01** | **0.37** | **237.62** | **0.15** | **2.29** | **1.03** | **0.07** | **47.31** | **0.13** | **0.56** | **8.82** | **1177.51** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Median | 0.49 | 0.36 | 5.49 | 0.11 | 1.21 | 0.84 | 0.06 | 43.00 | 0.14 | 0.55 | 8.58 | 233.30 |
| | S.D. | 3.07 | 0.20 | 2953.07 | 0.50 | 3.52 | 0.85 | 0.07 | 26.62 | 0.48 | 0.16 | 1.68 | 2272.74 |
| | S.E | 0.10 | 0.01 | 93.01 | 0.02 | 0.11 | 0.03 | 0.00 | 0.84 | 0.02 | 0.01 | 0.05 | 71.58 |
| | Max | 40.07 | 0.94 | 88222.87 | 11.98 | 38.36 | 8.44 | 0.38 | 1400.00 | 6.81 | 1.00 | 13.56 | 13056.36 |
| | Min | -6.48 | 0.00 | -7.66 | -0.82 | 0.00 | 0.00 | -0.27 | 1.00 | -9.61 | 0.17 | 4.95 | 12.56 |

**TABLE 5: Mean variables of all the selected industries from year 2008-2009 to 2018-2019**

| Report | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | | | | | | | | | | | | |
| Industry | D/E | Tangibility | DSCR | Growth | Tobin's Q | Asset Turnover | ROA | AGE | ROE | Ownership | Size | Risk |
| Automobile & ancillaries | .51 | .34 | 324.51 | .17 | 3.44 | 1.42 | .10 | 37.90 | .19 | .59 | 8.47 | 1535.01 |
| Chemicals | .66 | .37 | 22.77 | .09 | 2.50 | .83 | .09 | 42.00 | .16 | .40 | 8.28 | 233.80 |
| Cement | .49 | .49 | 9.82 | .12 | 1.43 | .71 | .06 | 36.75 | .13 | .60 | 9.19 | 498.25 |
| Food, sugar & beverage | 1.18 | .36 | 178.54 | .12 | 3.04 | 1.84 | .08 | 38.48 | .22 | .51 | 7.62 | 323.39 |
| Metals & Mining | 2.42 | .45 | 96.16 | .24 | 3.22 | .62 | .07 | 44.70 | .09 | .59 | 9.82 | 1981.62 |
| Pharmaceuticals | .25 | .32 | 133.31 | .15 | 3.47 | .75 | .13 | 39.20 | .20 | .51 | 8.71 | 639.48 |
| Textiles | 1.87 | .36 | 7.27 | .11 | 1.48 | .66 | .04 | 83.00 | .17 | .45 | 8.67 | 407.84 |
| Tires | .94 | .46 | 10.62 | .15 | 1.12 | 1.29 | .07 | 37.00 | .18 | .45 | 8.24 | 371.88 |
| Paints | .32 | .27 | 794.76 | .11 | 4.14 | 1.36 | .11 | 85.20 | .19 | .65 | 7.48 | 268.83 |
| Paper & Plastics | 1.81 | .63 | 3.47 | .10 | .70 | .61 | .03 | 54.20 | -.22 | .45 | 7.75 | 130.23 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Construction, Real estate & Infrastructure** | **1.23** | **.11** | **64.49** | **.15** | **1.20** | **.54** | .02 | **53.33** | **.06** | **.64** | **8.86** | **190.96** |
| **Capital Goods/Machinery** | **.34** | **.20** | **25.31** | .06 | **1.72** | **.60** | **.05** | **45.25** | **.12** | **.66** | **9.55** | **1469.83** |
| **Power** | **.92** | **.50** | **4.12** | .24 | **1.11** | .18 | **.04** | **43.40** | **.08** | .67 | **10.95** | **1862.85** |
| **Electrical & Electronics** | **.26** | **.25** | **165.89** | .24 | **2.34** | **1.34** | **.10** | **44.80** | **.17** | **.57** | **7.52** | **168.03** |
| **Oil & Gas** | **.68** | **.47** | 1572.12 | **.10** | **.98** | **1.56** | **.06** | **45.17** | **.15** | **.58** | 11.73 | 6600.34 |
| Total | 1.01 | .37 | 237.62 | .15 | 2.29 | 1.03 | .07 | 47.31 | .13 | .56 | 8.82 | 1177.51 |

**TABLE 6: ANOVA of all the variables of financial leverage for selected industries**

| ANOVA Table | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Sum of Squares | df | Mean Square | F | Sig. |
| D/E * Industry | Between Groups | (Combined) | 462.143 | 14 | 33.010 | 3.625 | .000 |
| | Within Groups | | 9043.006 | 993 | 9.107 | | |
| | Total | | 9505.149 | 1007 | | | |
| Tangibility * Industry | Between Groups | (Combined) | 14.388 | 14 | 1.028 | 40.134 | .000 |
| | Within Groups | | 25.427 | 993 | .026 | | |
| | Total | | 39.815 | 1007 | | | |
| DSCR * Industry | Between Groups | (Combined) | 160044991.221 | 14 | 11431785.087 | 1.317 | .190 |
| | Within Groups | | 8621615542.706 | 993 | 8682392.289 | | |
| | Total | | 8781660533.927 | 1007 | | | |
| Growth * Industry | Between Groups | (Combined) | 3.117 | 14 | .223 | .876 | .585 |
| | Within Groups | | 252.250 | 993 | .254 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | | 255.367 | 1007 | | | |
| Tobin's Q * Industry | Between Groups | (Combined) | 1154.312 | 14 | 82.451 | 7.223 | .000 |
| | Within Groups | | 11334.821 | 993 | 11.415 | | |
| | Total | | 12489.133 | 1007 | | | |
| Asset Turnover * Industry | Between Groups | (Combined) | 238.717 | 14 | 17.051 | 34.815 | .000 |
| | Within Groups | | 486.332 | 993 | .490 | | |
| | Total | | 725.049 | 1007 | | | |
| ROA * Industry | Between Groups | (Combined) | .841 | 14 | .060 | 16.472 | .000 |
| | Within Groups | | 3.621 | 993 | .004 | | |
| | Total | | 4.462 | 1007 | | | |
| AGE * Industry | Between Groups | (Combined) | 192388.619 | 14 | 13742.044 | 26.175 | .000 |
| | Within Groups | | 521325.189 | 993 | 525.000 | | |
| | Total | | 713713.809 | 1007 | | | |
| ROE * Industry | Between Groups | (Combined) | 9.891 | 14 | .707 | 3.188 | .000 |
| | Within Groups | | 220.103 | 993 | .222 | | |
| | Total | | 229.995 | 1007 | | | |
| Ownership * Industry | Between Groups | (Combined) | 6.116 | 14 | .437 | 21.041 | .000 |
| | Within Groups | | 20.617 | 993 | .021 | | |
| | Total | | 26.733 | 1007 | | | |
| Size * Industry | Between Groups | (Combined) | 1427.656 | 14 | 101.975 | 72.150 | .000 |
| | Within Groups | | 1403.484 | 993 | 1.413 | | |
| | Total | | 2831.140 | 1007 | | | |
| Risk * Industry | Between Groups | (Combined) | 2528244305.503 | 14 | 180588878.965 | 67.081 | .000 |
| | Within Groups | | 2673252454.312 | 993 | 2692097.134 | | |
| | Total | | 5201496759.815 | 1007 | | | |

**TABLE 7: Correlation among financial variables and their significance**

| Correlations | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Size | Tangibility | DSCR | Growth | Tobin's Q | Asset Turnover | ROA | D/E | AGE | ROE | Ownership | Risk |
| Size | Pearson Correlation | 1 | .152** | .051 | -.005 | -.024 | -.252** | -.072* | .017 | .075* | -.009 | -.032 | .702** |
| | Sig. (2-tailed) | | .000 | .103 | .880 | .442 | .000 | .022 | .596 | .017 | .772 | .313 | .000 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| Tangibility | Pearson Correlation | .152** | 1 | .028 | -.009 | -.126** | -.076* | -.105** | .059 | -.200** | -.065* | -.080* | .193** |
| | Sig. (2-tailed) | .000 | | .380 | .771 | .000 | .016 | .001 | .063 | .000 | .039 | .011 | .000 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| DSCR | Pearson Correlation | .051 | .028 | 1 | -.011 | .022 | -.005 | .077* | -.019 | -.017 | .017 | .052 | .051 |
| | Sig. (2-tailed) | .103 | .380 | | .721 | .488 | .882 | .014 | .546 | .581 | .580 | .101 | .106 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| Growth | Pearson Correlation | -.005 | -.009 | -.011 | 1 | -.011 | -.011 | -.011 | -.010 | -.090** | .022 | .036 | .008 |
| | Sig. (2-tailed) | .880 | .771 | .721 | | .731 | .734 | .720 | .751 | .004 | .491 | .248 | .790 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| Tobin's Q | Pearson Correlation | -.024 | -.126** | .022 | -.011 | 1 | .163** | .476** | .496** | -.001 | .115** | .160** | -.050 |
| | Sig. (2-tailed) | .442 | .000 | .488 | .731 | | .000 | .000 | .000 | .982 | .000 | .000 | .114 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| Asset Turnover | Pearson Correlation | -.252** | -.076* | -.005 | -.011 | .163** | 1 | .244** | -.074* | .001 | .146** | -.101** | -.012 |
| | Sig. (2-tailed) | .000 | .016 | .882 | .734 | .000 | | .000 | .019 | .977 | .000 | .001 | .712 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| ROA | Pearson Correlation | -.072* | -.105** | .077* | -.011 | .476** | .244** | 1 | -.042 | -.117** | .420** | .092** | -.005 |
| | Sig. (2-tailed) | .022 | .001 | .014 | .720 | .000 | .000 | | .179 | .000 | .000 | .003 | .870 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| D/E | Pearson Correlation | .017 | .059 | -.019 | -.010 | .496** | -.074* | -.042 | 1 | .075* | -.188** | .003 | .029 |
| | Sig. (2-tailed) | .596 | .063 | .546 | .751 | .000 | .019 | .179 | | .018 | .000 | .927 | .352 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| AGE | Pearson Correlation | .075* | -.200** | -.017 | -.090** | -.001 | .001 | -.117** | .075* | 1 | -.018 | -.194** | -.005 |
| | Sig. (2-tailed) | .017 | .000 | .581 | .004 | .982 | .977 | .000 | .018 | | .574 | .000 | .880 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| ROE | Pearson Correlation | -.009 | -.065* | .017 | .022 | .115** | .146** | .420** | -.188** | -.018 | 1 | .061 | .022 |
| | Sig. (2-tailed) | .772 | .039 | .580 | .491 | .000 | .000 | .000 | .000 | .574 | | .054 | .484 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| Ownership | Pearson Correlation | -.032 | -.080* | .052 | .036 | .160** | -.101** | .092** | .003 | -.194** | .061 | 1 | .017 |
| | Sig. (2-tailed) | .313 | .011 | .101 | .248 | .000 | .001 | .003 | .927 | .000 | .054 | | .582 |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| Risk | Pearson Correlation | .702** | .193** | .051 | .008 | -.050 | -.012 | -.005 | .029 | -.005 | .022 | .017 | 1 |
| | Sig. (2-tailed) | .000 | .000 | .106 | .790 | .114 | .712 | .870 | .352 | .880 | .484 | .582 | |
| | N | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 | 1008 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | | | | | | | | |
| *. Correlation is significant at the 0.05 level (2-tailed). | | | | | | | | | | | | | |

**TABLE 8: Correlation among financial variables**

| | D/E | Size | Tangibility | DSCR | Growth | Tobin's Q | Asset Turnover | ROA | AGE | ROE | Ownership | Risk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **D/E** | **1.000** | | | | | | | | | | | |
| **Size** | **0.017** | **1.000** | | | | | | | | | | |
| **Tangibility** | **0.058** | **0.153** | **1.000** | | | | | | | | | |
| **DSCR** | **-0.019** | **0.051** | **0.028** | **1.000** | | | | | | | | |
| **Growth** | **-0.010** | **-0.005** | **-0.009** | **-0.011** | **1.000** | | | | | | | |
| **Tobin's Q** | **0.496** | **-0.024** | **-0.126** | **0.022** | **-0.011** | **1.000** | | | | | | |
| **Asset Turnover** | **-0.074** | **-0.252** | **-0.076** | **-0.005** | **-0.011** | **0.163** | **1.000** | | | | | |
| **ROA** | **-0.044** | **-0.072** | **-0.106** | **0.078** | **-0.012** | **0.474** | **0.244** | **1.000** | | | | |
| **AGE** | **0.075** | **0.075** | **-0.200** | **-0.017** | **-0.090** | **-0.001** | **0.001** | **-0.117** | **1.000** | | | |
| **ROE** | **-0.188** | **-0.009** | **-0.065** | **0.017** | **0.022** | **0.115** | **0.146** | **0.422** | **-0.018** | **1.000** | | |
| **Ownership** | **0.003** | **-0.032** | **-0.081** | **0.052** | **0.036** | **0.161** | **-0.101** | **0.094** | **-0.195** | **0.062** | **1.000** | |
| **Risk** | **0.029** | **0.702** | **0.194** | **0.051** | **0.008** | **-0.050** | **-0.012** | **-0.005** | **-0.005** | **0.022** | **0.017** | **1.000** |

**TABLE 9: Variables entered**

**Variables Entered/Removed[a]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | Risk, AGE, Asset Turnover, DSCR, Growth, ROE, Tobin's Q, Ownership, Tangibility, ROA, Size | . | Enter |

**a. Dependent Variable: D/E**
**b. All requested variables entered.**

**TABLE 10: Model Summary**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .632[a] | .400 | .393 | 2.39332 | .400 | 60.312 | 11 | 996 | .000 | .910 |

**a. Predictors: (Constant), Risk, AGE, Asset Turnover, DSCR, Growth, ROE, Tobin's Q, Ownership, Tangibility, ROA, Size**
**b. Dependent Variable: D/E**

**TABLE 11: ANOVA of regression model**

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3800.095 | 11 | 345.463 | 60.312 | .000[b] |
| | Residual | 5705.054 | 996 | 5.728 | | |
| | Total | 9505.149 | 1007 | | | |

**a. Dependent Variable: D/E**
**b. Predictors: (Constant), Risk, AGE, Asset Turnover, DSCR, Growth, ROE, Tobin's Q, Ownership, Tangibility, ROA, Size**

**TABLE 12: Regression coefficient of multiple regression model**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | 3.243 | .741 | | 4.379 | .000 | | | | | |
| | Tangibility | 1.509 | .403 | .098 | 3.744 | .000 | .059 | .118 | .092 | .886 | 1.129 |
| | DSCR | -9.945E-006 | .000 | -.010 | -.387 | .699 | -.019 | -.012 | -.009 | .987 | 1.014 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Growth** | **.016** | **.151** | **.003** | **.104** | **.917** | **-.010** | **.003** | **.003** | **.989** | **1.011** |
| | **Tobin's Q** | **.602** | **.025** | **.690** | **23.965** | **.000** | **.496** | **.605** | **.588** | **.727** | **1.376** |
| | **Asset Turnover** | **-.500** | **.099** | **-.138** | **-5.033** | **.000** | **-.074** | **-.158** | **-.124** | **.802** | **1.247** |
| | **ROA** | **-12.429** | **1.459** | **-.269** | **-8.517** | **.000** | **-.042** | **-.261** | **-.209** | **.603** | **1.659** |
| | **AGE** | **.007** | **.003** | **.058** | **2.227** | **.026** | **.075** | **.070** | **.055** | **.877** | **1.140** |
| | **ROE** | **-.817** | **.176** | **-.127** | **-4.643** | **.000** | **-.188** | **-.146** | **-.114** | **.805** | **1.242** |
| | **Size** | **-.274** | **.068** | **-.150** | **-4.009** | **.000** | **.017** | **-.126** | **-.098** | **.433** | **2.308** |
| | **Ownership** | **-1.441** | **.490** | **-.076** | **-2.941** | **.003** | **.003** | **-.093** | **-.072** | **.893** | **1.120** |
| | **Risk** | **.000** | **.000** | **.152** | **4.185** | **.000** | **.029** | **.131** | **.103** | **.459** | **2.179** |
| **a. Dependent Variable: D/E** | | | | | | | | | | | |