Impact of Capital Structure on Firm's Financial Performance: An Analysis of Chemical Sector of Pakistan

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Abstract

This article has the intent to scrutinize the impact which capital structure (Financing decisions) have on the financial performance of firms. Data from annual audited reports of the 28 listed firms in Chemical sector of Pakistan at KSE (Karachi Stock Exchange) retrieved for the phase of 5 years (2009-2013). Correlation and Panel least square regression analysis put in use to investigate the tie-up between capital structure and financial performance of firms. The outcome of the statistical analysis made known that TDR and STDA has significant negative influence on the financial performance of firms evaluated by ROA. The relationship in between ROA and TIE is positive as well as significant. However, DER and LTDA have negative but insignificant influence on ROA.

Keywords: Capital Structure, Financial Performance (ROA), Chemical Sector, Pakistan

1. Introduction

The decisions link to the capital structure is critical for a firm due to its tie-up with financial performance. Capital structure is the strategy employed by a firm to finance its assets, growth and operations. Capital structure is the composite of total equity and total debt of firms. Firms can issue a number of securities to finance its assets however; appropriate combination of debt and equity (Optimal Capital Structure) is critical for a firm as it reduce the firm's cost of capital and maximize their market worth and stock price. Firms can even attain competitive advantage, if it has perfect capital structure. Several macro environmental and firm-specific factors influence the decisions of firm's capital structure. The country within which the particular firm operates also influences their capital structure as well as their financial performance (Krishnan & Moyer, 1997).

Whether firms capital structure affects the firm's financial performance or not, the empirical exploration on that momentous issue instigate after the Capital Structure irrelevance theory by MM. In 1958, Franco Modigliani and Merton H. Miller (M&M) made known their theory of capital structure (The Cost of Capital, Corporation Finance and the Theory of Investment). Within the set of some unrealistic and restrict presumptions, M&M disclose that firm's profitability is not rely on their capital structure. After this, enormous empirical investigations had conducted on that subject matter. Still there is no consensus in outcomes of these studies. Even capital structure theories such as Pecking order theory, Trade-off theory, Signaling theory etc. are contradicting.

Despite the number of theories and empirical studies, with regard to the capital structure, hitherto there is no mechanism to compute the perfect (Optimal) Capital Structure. The issuance of debt (both short term and long term) and equity securities rely on the specific firm's finance requirement, interval for which it is required, their financial position and security market of the country within which the firm operates. Culture of the nation is also the factor that directs the use of equity and debt in the company's Capital structure (Gleason et al. 2000).

The influence of Capital structure on the financial performance of the firms have made known in a number of empirical studies in developed nations of the world. Few investigations on that subject matter had conducted in the developing states of the world. In Pakistan, this matter had examined in few sectors. Still, the findings of these empirical examinations do not reveal consensus in between them. Some studies reveal the positive association while other reveals the negative. Hitherto no study had conducted on this issue in the Chemical Sector of Pakistan. This empirical research has the intent to investigate the relationship between firm's Capital structure and financial performance in Chemical sector of Pakistan.

Research Objectives

The objectives of this empirical research are:

1. To scrutinize the influence of debt level in the firm's capital structure on the financial performance (ROA)
2. To probe the degree of debt level and profitability level in the Chemical sector of Pakistan

Research Questions

1) What is the association between firm's debt and their financial performance in Chemical sector of Pakistan?
2) Are the correlation between Capital structure and financial performance (ROA) remarkable?

3) What is the magnitude of capital structure and ROA (Financial performance) in the Chemical sector of Pakistan?

Section 2 of this empirical study depicts the review of the existing literature on that subject matter. Section 3 explains the methodology of the article. This section describes the data analyzed, spell out the selected variables, sample size, hypothesis and the econometric model of the article. Next section portrays the data analysis and results. Then, the last section contains the concluding remarks.

2.   Literature Review

Capital structure (financial structure) is the paramount factor that has influence on the firm's performance. Capital structure is composed of different financing sources for a firm. Decisions' regarding the proportion of debt and equity are significant for a firm, as perfect capital structure minimize the WACC. By doing so, a firm can enhanced the wealth of their stockholders as well as value of the firm.

Sheikh & Wang, (2010) examine the financing behavior of textile firm's in Pakistan. Regression model analysis was employed to analyze the data for 75 listed textile firms in the duration of 2002-2007. The outcome disclose that amount of debt in capital structure negatively affect the profitability. Increase in the amount of debt in the capital structure of firms decrease the profitability as a repercussion (Ahmad, 2014; Memon et al. 2012).

Mirza & Javed, (2013) investigates the determinants of financial performance in Pakistan. Correlation and fixed effect model analysis was applied on the data of 60 firms within the interval of 2007-2011. The end results divulge that performance of the firm (ROE) is positively affected by DER, whereas negatively affected by LTDTA and STDTA. A comprehensive and prominent empirical study conducted by (Abor, 2005) on the firms listed at Ghana Stock Exchange disclose that STDTA and TDTA have a positive impact on ROE(profitability), whereas LTDTA has negative impact. The degree of equity in the capital structure is positively associated with profitability (ROA) of insurance firms in Pakistan while Leverage has negative relation with profitability (Malik, 2011).

Raheman et al. (2007) scrutinize the link between capital structure and profitability. The data from the 94 non financial firms for a phase of 6 years (1999-2004) was put in use. They employ the regression and correlation analysis and made known that equity and firm's size has positive, while leverage (Debt) has negative effect on the profitability of organizations. In a high-rank study accomplished by (TITMAN & WESSELS, 1988) on the issue of "The Determinants of Capital Structure Choice" disclosed that firm size has negative impact on STD ratio while Non-debt tax shield, Growth opportunities, earnings volatility and collateral value have no affect on the firm's debt ratio. Debt and firms size are positively linked with the profitability of firms and the profitability of firms also affected by the nature of their industry, in which they compete (Singapurwoko & Mustofa El-Wahid, 2011).

Khan et al. (2013) inspect the capital structure, financial performance and their effect on stock returns. After analyzing the data from 69 listed textile firms of Pakistan, they reveals that leverage, ROE, EPS, and Cash flow ratio have positive effect on the return of firm's stock. Capital structure of a textile firms in pakistan is positively linked with the wealth of stockholders (Stock price) and performance of organizations (ROA, ROE and EPS) (Mujahid & Akhtar, 2014). San & Heng, (2011) critically investigates the relation between corporate performance and capital structure by using the data from construction sector of Malaysia. They disclose that EPS and debt to capital have negative link between them in large and small firms, while return on capital and debt to equity market value, EPS and long-term debt to capital have positive link particularly for large firms. In medium size firms, there is a positive relation between OM and LDCE (Long term debt to common equity). The volume of debt in capital structure of firms in Jordan has negative and remarkable effect on the performance of companies, when performance is evaluated both in accounting based (ROA) and market based (Tobin's Q) measures (Zeitun & Tian, 2007). Hijazi & Tariq, (2006) explores the determinants of capital structure in the Cement sector of pakistan. The outcome communicates that profitability and firm's size has a negative link with the leverage while there is positive association between tangibility, growth and leverage. The contemporary investigation conducted by (Amara & Aziz, 2014; Khanam et al. 2014) divulge the inverse relation on profitability (ROA, ROE) by the degree of debt in capital structure in the food sector of Pakistan. Financial leverage and profitability has a negative linkage in between them in the life insurance sector of Pakistan (Ahmed et al. 2010).

YUSUF et al. (2014) explore the capital structure and profitability within the context of Nigerian firms. They used correlation and regression to inspect the data of 10 nigerian firms in the period of 2000 to 2011. The end result disclose that ROE and Debt to equity has noteworthy relation while, ROE and DAR, ROA and DAR, and ROA and DER have trivial relation. The trivial relation between capital structure and financial performance (ROA, ROE & GPM) is also made known in the empirical study of (Ebaid, 2009). Specifically all the measures of capital structure (STD, LTD and TTD) had disclosed their trivial influence on GM (Gross Margin).

Tayyaba, (2013) scrutinize the leverage and their association with profitability of firms. Regression and correlation coefficient method was used on the data of 25 companies in the oil and gas sector of india. The outcome of this investigation is striking as it reveals that financial leverage has a positive effect on both ROE and ROA. The finding also claims that on accounting and market based measure, firms with high leverage have less risk. The performance (Market Efficiency or Q) of Palestinians banks is positively linked with the leverage (Abbadi & Abu-Rub, 2012).

Salehi & Biglar, (2009) examine the link between Performance and Capital structure of 117 listed firm of Iran. The end result disclosed that debt have an inverse linkage with performance and profitability of firms. In an empirical investigation carried out in Sri Lanka By (Pratheepkanth, 2011) on that issue unveil that financial performance (ROA, Net profit and ROI) of companies is negatively related with the Capital structure. Ahmad et al. (2012) investigate the capital structure affect on firm performance. The data used were extracted from the 58 listed firms in the consumer and industrial sector of Malaysia. The findings reveals that Short term debt and long term debt has noteworthy link with profitability measures such as ROA while remarkable positive tie-up was unveiled between ROE and LTD. The volume of debt in the Capital structure of firms have a inverse tie-up with their performance (Hasan et al. 2014). They put on view that ROA is negatively affected by debts of all levels, while EPS has negative relationship with debts (LTDTA & TDTA) except with STDTA.

Rafiq et al. (2008) evaluate the Determinants of Capital Structure in the Chemical sector of Pakistan. Data of 26 firms was used over the term of 12 years (1993-2004). The outcome, after applying the panel regression analysis communicate that profitability has a negative linkage with the leverage, whereas positive association was unveiled between leverage and size, tangibility, growth and income variation. The link between growth, profitability and leverage was negative while link between size, tangibility and leverage was uncovered positive in the listed firms of pakistan (Shah & Khan, 2007).

Gul et al. (2012) investigate the relationship between firm performance and corporate governance. Pooled least square method was used to inspect the data of 50 firms of textile sector listed at KSE. The outcome made known the negative influence of TDTA(leverage) on the performance of firms. Masnoon & Saeed, (2014) scrutinize the determinants of capital structure within the context of automobile sector of Pakistan. The data from 10 listed firms in the period of 2008 to 2012 was crucially investigated. The final result disclose that capital structure has negative link with size, growth, tangibility and profitability whereas positive association was uncovered with the variability in firm's earnings. The negative link was explored between debt (SDA, LDA & DA) and ROE (Profitability) in the listed firms of Jordan (Shubita & alsawalhah, 2012).

Gill & Mathur, (2011) inspect the factors that affect the leverage of firms. The data used were retrieved from the 166 firms listed at the toronto stock exchange in the span of 2008 to 2012. The end result made known that leverage has positive impact on firm in the service sector while negatively associated with the firms in the manufacturing sector. The outcome of an investigation in India by (Goyal, 2013) disclose the positive association between short term debt and profitability while negative link was discovered between profitability and long term debt. A critical examination in the engineering sector of pakistan made known that ROA and ROE negatively effected by debts of all levels whereas the performance of firms evaluated in term of Tobin's Q has positive link with LTDTA (Khan, 2012).

Quang & Xin, (2014) scrutinize the impact of ownership structure and financing decisions on the performance of firms. The findings exposed the negative correlation between performance (ROE & ROA) of the firms and financing decisions (SDA, LDA & TDA) in Vietnam. In a well attended empirical examination conducted by (HUANG & SONG, 2006) in China on the data of 1200 firms for 10 years (1994-2003) made known the negative tie-up in between ROA (profitability) and leverage. The efficiency of firms escalated with increase in the degree of leverage of firms and financing decisions are not influenced by sorts of ownership (Margaritis & Psillaki, 2010).

Umar et al. (2012) examine the impact that capital structure have on financial performance on the data of 100 top firms in Pakistan for 4 years (2006-2009). The outcome displayed that capital structure (CLTA, LTLTA, & TLTA) inversely affect the profitability (EBIT, EPS & ROA). Whereas positive link was revealed between ROE and LTDTA. In the empirical study of (Patel & Bhatt, 2013) the negative association between profitability and debts was unveiled while the linkage was positive in between equity and profitability. Measures of financial performance such as ROE and ROA had negatively affected by their capital structure to a large extent (Mwangi et al. 2014).

These are the findings of some empirical investigation on that particular subject matter. These findings clearly disclose that there in no harmony in their results. To end this, the outcome of these examinations provide us the foundation to develop the Methodology section.

3.   Research Methodology

The intent of this paper is to investigate the influence of capital structure or financing decisions on firm's financial performance in Chemical sector of Pakistan over the span of 5 years (2009-2013).

3.1 Data and Analysis Methods

The secondary data has employed in this empirical study to investigate the impact of financing decisions (Capital structure) on the financial performance of listed firms in Chemical sector of Pakistan. The data has retrieved from the Annual audited reports of listed firms and Balance sheet analysis, issued by State bank of Pakistan. The data that use in this article is of 5-year span from 2009-2013. The considerable values of data have calculated with the financial amounts in the annual audited reports. Several statistical analysis such as, Descriptive statistics, Correlation analysis and Panel least square regression analysis methods are used.

3.2 Variables

Following are the variables employed in that research:

i.   Independent Variables: (Capital Structure)
1) Total Debt ratio (TDR) =Total debt/Total assets= (Total assets-Total equity)/Total assets
2) Debt to equity ratio= Total debt/ Total equity
3) Times interest earned ratio(TIE)=EBIT/Interest
4) Short Term Debt to total Assets (STDA) = Short Term Debt / Total Assets
5) Long Term Debt to total Assets (LTDA) = Long Term Debt / Total Assets

ii. Dependent Variable: (Financial Performance)
1) Return on assets (ROA) =net income after tax/Total assets or Earnings after tax/Total assets.

iii. Control Variable:

Prior empirical studies on that issue made known the size of firm has an association with firm financial performance, as larger the firm size less the cost of issuing debt and equity will be. Secure and steady stream of cash flows of larger firms leads to the lowest degree of bankruptcy cost and large firms attain the economies of scale, which may affect the findings of the research. Several measures of firm size had employed in the precursory studies such as Common logarithm and Natural logarithm of total assets and sales of the firms; however, we use the logarithm of total assets as the proxy of firm size. Common logarithm of total assets was also employed by (Ebaid, 2009) and (Umar et al. 2012).

Firm size (SIZE) = Logarithm of total assets of a firm

3.3 Econometric Model

Regression models used to scrutinize the relationship in between capital structure and financial performance are as follow:

$$ROA_{I,t}=\beta_0 + \beta_1 TDR_{i,t} + \beta_2 SIZE_{i,t} + \varepsilon_{i,t} \qquad (1)$$
$$ROA_{I,t}=\beta_0 + \beta_1 DER_{i,t} + \beta_2 SIZE_{i,t} + \varepsilon_{i,t} \qquad (2)$$
$$ROA_{I,t}=\beta_0 + \beta_1 STDA_{i,t} + \beta_2 SIZE_{i,t} + \varepsilon_{i,t} \qquad (3)$$
$$ROA_{I,t}=\beta_0 + \beta_1 LTDA_{i,t} + \beta_2 SIZE_{i,t} + \varepsilon_{i,t} \qquad (4)$$
$$ROA_{I,t}=\beta_0 + \beta_1 TIE_{i,t} + \beta_2 SIZE_{i,t} + \varepsilon_{i,t} \qquad (5)$$

Where,

ROA=return on assets

TDR= Total debt ratio

DER= Debt to equity ratio

STDA= Short term debt to total assets

LTDA= Long term debt to total assets

TIE= Time interest earned ratio

SIZE= Firms size (Logarithm of total assets)

t=time

ε=error term

I=firms

3.4 Hypothesis

The hypotheses to demonstrate the impact of capital structure on financial performance are as follow:

H_{1a}: TDR and ROA have significant negative relation

H_{1b}: DER and ROA have significant negative relation

H_{1c}: STDA and ROA have significant negative relation

H_{1d}: LTDA and ROA have significant negative relation

H_{1e}: TIE and ROA have significant positive relation

3.5 Population For Research

The total populations on which this study is to be conduct include all the firms listed at Karachi stock exchange in the chemical sector of Pakistan.

3.6 Sample For Empirical Study

The initial sample for that research contains the 34 listed firms in chemical sector at Karachi stock exchange. However, non-availability and insufficiency of data impede the sample size to 28 listed firms in Chemical sector of Pakistan.

4.   Empirical Results

4.1 Descriptive Statistics Analysis

Table 1 depicts the outcome of descriptive statistics for the variables of this empirical study. During the span of this study, the financial performance of listed firms evaluated with ROA have the mean value of 0.0410, median of 0.0451 and standard deviation of 0.1921. it communictes that on average firms earn 4.10% ROA. These numbers reveals the below par performance of firms in that particular sector. The unsatisfactory performance of these firms are impute with the several factors e.g. un-acceptable political, economical and law & order environment in Pakistan.

Table 1

Descriptive Statistics

Variable	ROA	TDR	DER	STDA	LTDA	TIE	SIZE
Mean	0.041008	0.604165	1.799714	0.388164	0.226235	219.3336	8.096863
Median	0.045100	0.591550	1.354250	0.301350	0.162250	2.530500	8.022400
Maximum	0.462500	1.777700	13.64640	1.648600	0.695500	37577.35	10.65460
Minimum	-1.213800	0.000000	-3.309300	0.000000	0.000000	-10100.00	0.000000
Std. Dev.	0.192137	0.325054	2.507283	0.324497	0.200093	3295.478	1.451925
Observations	140	140	140	140	140	140	140

The TDR have the mean value of 0.6041, median of 0.5915 and SD of 0.3250. It depicts that firms on average have 60.41% debt in their total capital structure. In short, firms usually in that specific sector are highly leverage. DER have the mean value of 1.7997, median of 1.3542 and SD of 2.5072. This portray that degree of debt is 1.7997 as compared to the equity and debt level fluctuate between firms to a great extent. This end result depicts that major financing source of firms in that sector is debt and firms are highly financial leveraged.

STDA have average figure of 0.3881, median of 0.3013 and SD of 0.3244. These outcome reveal that on average 38.81 % financing of firms arise from short term debt. Out of total debt, short term debt covers the substantial portion of financiang of total assets. This is because of the actuality that debt market in pakistan is under-developed and firms enormously reckon on short term bank loans as LTD have exorbitant cost in developing nations like Pakistan. STDA has the maximum value of 1.6486. At the first sight, it seems to be out of question however it is viable if total equity of firms is negative. LTDA have mean value of 0.2262 while SD of 0.20. It explicitly reveals that 22.62 % financing of total assets associated with long term financing. In pakistan, bond market is not fully advanced which is the hinderance in the usage of LTD as financing for firms.

TIE (Interest coverage ratio) have the mean value of 218.7716 with the SD of 3295.523. The mean value portray that firms are 218 times secured to pay their financial cost but in actuality this is not the case. With the SD of 3295.523, it communicated that some firms are secure while majority are not secure to pay their finance cost. Non-payment of finance cost (Obligation) leads toward the bankruptcy.

Table 2 Correlation Analysis

Correlation Probability	ROA	TDR	DER	STDA	LTDA	TIE	SIZE
ROA	1.000000						

TDR	-0.433829***	1.000000					
	0.0000	-----					
DER	-0.016587	0.095853	1.000000				
	0.8458	0.2599	-----				
STDA	-0.350980***	0.819044***	-0.282088	1.000000			
	0.0000	0.0000	0.0007	-----			
LTDA	-0.087991	0.299935***	0.620429	-0.268300	1.000000		
	0.3012	0.0003	0.0000	0.0014	-----		
TIE	0.144664*	-0.157356*	-0.061269	-0.109040	-0.082254	1.000000	
	0.0881	0.0633	0.4721	0.1997	0.3340	-----	
SIZE	-0.065932	0.007944	0.192407	-0.166890	0.199592	0.123738	1.000000
	0.4389	0.9258	0.0228	0.0487	0.0181	0.1452	-----

*** Significance level 0.01**, **** Significance level 0.05**,** and * Significance level 0.1

4.2 Correlation Analysis
Table 2 displays the findings of correlation analysis of the variables of this article. The correlation between ROA and TDR is -0.4338 at the significant level of 1 %, which shows that there is a significant and negative association in between them. The correlation between ROA and DER is -0.0165, which depicts the negative association between these two variables however this tie-up is not significant. The correlation of ROA with STDA is -0.3509 at 1% level of sifnificance, which disclose the negative as well as significant linkage. ROA has negative correlation of value -0.0879 with LTDA, but the interdependence between these two variables is not significant. TIE and ROA has positive correlation as displayed in the table 2 have the value of 0.1447. ROA and size of the firm has negative association having the value of -0.0659 but for all that this association is no significant.

4.3 Regression Analysis
The outcome of Panel least square regression analysis are depict in table 3 and table 4. Panel least square regression analysis is employed to inspect the influence of Capital structure (Independent variables) on the financial performance (Dependent variable).The outcome of the Model 1 reveals that the coefficient of TDR is -0.2561 and have the probability of 0.0000 (Significance level 1%). These findings communicate that TDR have negative and significant impact on financial performance (ROA). With the increase in degree of debt, ROA (Financial perfermance) decrease as a repurcussion in that specific sector. It is because of the restricted covenants and high cost of debt especially in developing economies like Pakistan where debt market is under-developed. This particular outcome also authenticate H_{1a} hypothesis of the article. Similar findings are also made known in the empirical study of (Quang & Xin, 2014; Hasan et al. 2014; Umar et al. 2012; Khan, 2012; Zeitun & Tian, 2007; Ebaid, 2009; Gul et al. 2012) and (HUANG & SONG, 2006).

The findinds of regression Model 2 disclose that, DER has the coefficient of -0.0003, with t-value of -0.0466 and p value of 0.9629 (p>0.05). This portray the negative and insignificant influence of DER on ROA. This conclusion invalidate the H_{1b} hypothesis of our empicial investigation.

The statistical results of Model 3 reveals the coefficient of STDA is -0.2204 alongwith the t-value of -4.6314 and probability of 0.0000. This outcome exhibit that STDA have strong negative affect on ROA. It convey that if short term debt is used as a source of financing for firm's assets, the financial performance

evaluated by ROA decreased. The rational behind this outcome is the poor economic conditions and underutilization of financial resources. It demonstrate the use of debt in this specific sector for financing their assets have an adverse effect on firms profitability . Our hypotheses H_{1c} is accepted with the statistical outcome of this research and communicate the negative link between ROA and STDA.

The statistical results of Model 4 made known the value of coefficient of LTDA is -0.0748, along with the 0.3705 value of probability. This result proclaim the negative as well as insignificant affect of LTDA on ROA. In developing economies like Pakistan minimal amount of Long term debt is used as a financing source. Less degree of long term debt in their capital structure is the rationale behind the insignificant effect of LTDA on financial performance. The effective utilization of debt leads to the boost in fnancial performance and vice versa. The above mentioned statistical outcome reject the hypothesis H_{1d} of the research. The conclusion of some empirical researches such as (Shubita & alsawalhah, 2012; Khan, 2012; Hasan et al. 2014; Quang & Xin, 2014; Ebaid, 2009) also reveals the negative affect of STDA and LTDA on financial performance of firms.

The statistical results of Model 5 divulge that TIE has the coefficient of 9.05E-06 and probability of 0.0697 (10% significance level), which communicate the strong positive affect of TIE on ROA. It demonstrate that the firms that are financially secured to pay their finance cost also have sound degree of profiability. Previous empical studies such as (Ahmad, 2014) also reveals the positive influence of TIE on financial performance (ROE). This repurcussion validate our hypothesis H_{1e}.

The value of R-square reveals the degree at which independent variables explain the dependent variable. The value of F-statistics demonstrate the actuality of the regression model. Table 4 and table 5 also disclose that control variable (Firm size) has negative affect on firm performance in all regression models, however their influence is not remarkable (Insignificant) in all instances.

5. Conclusion

This research has the purpose to investigate the influence of firms capital structure on fiancial performance as evaluated with ROA. Five variables such as TDR (Total debt to total assets), DER (Debt to equity), STDA (Short term debt to total assets), LTDA (Long term assets to total assets) and TIE(Times interest earned) are employed to assess the capital structure, whereas ROA is used as the measure of financial performance. Firm size is also used as a control variable so as to control the affect of firm size. Data of 28 listed chemical firms at KSE (Karachi stock exchange) for the span of 5 years (2009-2013) is critically analyzed. With the utilization of Panel Least Square regression analysis, the end result divulge tha TDR and STDA have negative significant influence on firm performance, While TIE have remarkable positive influence on ROA, which is employed as the proxy of financial performance. DER and LTDA affect the ROA positively, though the influence of these to variables are not significant. To end this, the financing decisions or capital structure has an impact on the profitability of firms.

Table 3
Regression Model Results

Variable	Performance (ROA)		
	Model 1	Model 2	Model 3
Constant (Intercept)	26.2715	11.1376	26.3817
TDR	-0.2561(0.0000)***		
DER		-0.0003(0.9629)	
STDA			-0.2204(0.0000)***
SIZE	-0.0082(0.4172)	-0.0086(0.4546)	-0.0169(0.1135)
R^2	0.1921	0.0043	0.1391
F	16.2889	0.3001	11.0709
Prob. (F)	0.0000	0.7411	0.0000

*** Significance level 0.01**, **** Significance level 0.05, and ***** Significance level 0.1

Table 4
Regression Model Results

Variable	Performance (ROA) Model 4	Model 5
Constant (Intercept)	11.1916	13.0245
LTDA	-0.0748(0.3705)	
TIE		9.05E-06(0.0697)*
SIZE	-0.0066(0.5624)	-0.01126(0.3176)
R^2	0.0101	0.0280
F	0.7044	1.9779
Prob. (F)	0.4961	0.1422

*** Significance level 0.01, ****** Significance level 0.05, and * Significance level 0.1

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