Capital Structure Determinants and Financial Performance Analytical Study in Saudi Arabia Market 2004-2009

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ABSTRACT

Finance Scholars argue that developed market firms performance are affected by leverage, but little is empirically known about such implications in emerging economies such as Saudi Arabia. Moreover, little is empirically known about the relationship between capital structure determinants and financial performance in developed markets as well as the emerging ones. The results show that there is no relationship between capital structure determinants, leverage ratio and ROE. In addition, there is no relationship between some of the capital structure determinants (Tangibility & Risk) and ROA. This is basically due to the nature of the economy in Saudi Arabia which prevents debt and interest because of the Quranic law of economics (Shari'ah principle) which prohibited activities or elements such as usury (riba).

JEL Classification: G10; G30; G32.

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1. INTRDUCTION

Modigliani and Miller 1958 (MM-1958) argue that capital structure is irrelevant in determining firm value. Jensen and Meckling 1976 on the other hand, demonstrate that the amount of leverage in a firm's capital structure affects the agency conflicts between managers and shareholders which therefore affect firm performance. However, empirical evidence regarding this relationship is contradictory and mixed; while a positive relationship between leverage level and firm performance had been documented in some studies (Kyereboah-Coleman, A. 2007, Al Mutairi, M. & Hasan, H. 2010), other studies (such as Gleason, K., Mathur, B. & Mathur, I. 2000, Abor., J. 2007, Tian, G. & Zeitun, R. 2007, Rao, N., Al-Yahyaee, K. & Syed, L. 2007, Ai-ling Pan , L. 2009, Cheng Chen, H. 2009) indicated that there is a negative relationship between leverage level and firm performance

Given that the literature examining the performance implications of capital structure choices is immense in developed markets, little is empirically known about such implications in emerging economies such as Saudi Arabia. Furthermore, little is empirically known about the relationship between capital structure determinants and financial performance.

In consequence, the problem of this study argues that the capital structure determinants affect financial performance in developing countries represented by Saudi Arabia firms. Accordingly, the main objectives of the paper are: test the impact of determinates of the capital structure on the financial performance, design a model which measure the financial performance in Saudi Arabia, and test the effect of leverage on the financial performance.

The main contribution of this paper is that it is the first one that investigates the effect of capital structure determinants on financial performance in developing countries represented by Saudi Arabia.

This paper is organized into five sections; section two will detail the literature review. Section three describes the methodology and section four will report the results. Finally, in section five we will present our conclusion.

2. LITERATURE REVIEW

For the last two decades, there has been much research in determinants of capital structure and the effect of capital structure on financial performance. Few research concentrate on the relationship between determinants of capital structure and financial performance. Krishnan, V.& Moyer.. R. 1997, find that both financial performance and capital structure are influenced by the country of origin. Specifically, it is found that Hong Kong corporations have significantly higher returns on equity and invested capital than corporations from the other countries (Malaysia, Singapore, and Korea). From their side, Eriotis, N., Frangouli, Z. & Ventoura-Neokosmides, Z. 1999, conclude that firms which prefer to finance their investment activities through self-finance are more profitable than firms which finance investment through borrowed capital; and that) firms prefer competing with each other than cooperating; finally they conclude that firms use their investment in fixed assets as a strategic variable to affect profitability. Furthermore, Chingfu,, C. 1999 shows that sixteen out of seventeen proposed variables have significant prediction power on capital structure, the long-term debt and short-term debt denominated by market value of equity are significant indicators of capital structure. It is found in this paper that strong contemporaneous response of management compensation on firm performance exists, large firms have lower pay-performance sensitivity relative to small firms, and firms with convertible debt have higher pay-to-performance sensitivity than that of those without convertible debt.

To highlight this issue more, Gleason, K., Mathur, B. & Mathur, I. 2000 show that capital structure influences financial performance. A negative relationship between capital structure and performance suggests that agency issues may lead to use of higher than appropriate levels of debt in the capital structure, thereby producing lower performance. Moreover, Kakani,R., Saha, B. & Reddy, V. 2001 find that size, marketing expenditure, and international diversification had a positive relation with a firm's market valuation. Apart from these firm attributes that reflect either operating parameters of firms or 'strategic choice' of firm managers, they also find that a firm's ownership composition, particularly the level of equity ownership by Domestic Financial Institutions and Dispersed Public Shareholders, and the leverage of the firm were important factors affecting its financial performance.

Neri, M. 2002 from his side find an interesting result which implies that the agency costs, the level of firm's tangibility and the ownership structure play a fundamental role in financing decision. Unexpectedly, the tax rate, which has been extensively considered as one of the main determinant in financing decision, it is not statistically significant to the current

model and it appears to be an irrelevant factor in financial policy. Phillips, P. & Sipahioglu, M. 2004, on the other hand, reveal no significant relationship between the level of debt found in the capital structure and financial performance. These results are consistent with Modigliani and Miller's theorem.

Investigating the US market, Berger, A. & di Patti., E. 2006, find that data on the US banking industry are consistent with corporate governance theory which predicts that leverage affects agency costs and thereby influences firm performance, and the results are statistically significant, economically significant, and robust. To give more insight, Berger, A. & di Patti., E. 2006, find that data on the US banking industry are consistent with corporate governance theory which predicts that leverage affects agency costs and thereby influences firm performance, and the results are statistically significant, economically significant, and robust.

Tackling the issue of microfinance institutions, Kyereboah-Coleman, A. 2007 finds that most of these institutions employ high leverage and finance their operations with long-term as against short-term debt. Also, highly leveraged microfinance institutions perform better by reaching out to more clientele, enjoy scale economies, and therefore are better able to deal with moral hazard and adverse selection, enhancing their ability to deal with risk. Moreover, Abor., J. 2007 indicates that capital structure influences financial performance, although not exclusively. By and large, the results indicate that capital structure, especially long-term and total debt ratios, negatively affect performance of SMEs. This suggests that agency issues may lead to SMEs pursuing very high debt policy, thus resulting in lower performance.

Tian, G. & Zeitun, R. 2007, on the other hand, show that a firm's capital structure had a significantly negative impact on the firm's performance measures, in both the accounting and market's measures. Focusing on one of the developing countries, Rao, N., Al-Yahyaee, K. & Syed, L. 2007 suggest that, contrary to the Trade-off Theory of capital structure, there is a negative association between the level of debt and financial performance. This can be attributed to the high cost of borrowing and the underdeveloped nature of the debt market in Oman. Furthermore, Bhabra, H., Liu, T. & Tirtiroglud.D. 2008, find that Chinese firms use little long-term debt, which is positively (negatively) related to firm size and tangibility (profitability and growth options). These results are robust to the degree of seasoning after the initial public offering and private versus State ownership. Although industry membership is important, the development and growth of the stock market did not affect the long-term debt ratios over the years. Highlighting the Asian economy more, Chou, R. & Lee, C. 2008 conclude that the non-financial industry's capital structure of Taiwan 50 and Taiwan Mid-Cap 100 is consistent with trade-off theory, and the results are consistent with the hypothesis that the corporate performance is a nonlinear function of the capital structure.

Boodhoo, R. 2008 from his side, implies that the agency costs, tax rate, capital expenditures and the ownership structure play a fundamental role in financing decision. Unexpectedly, performance and tangibility, which have been extensively considered as important determinants in financing decision, are not statistically significant. Furthermore, Boodhoo provides additional support to the hypothesis of the existence of an optimal debt ratio, which balances the tax deductions gains from high leverage with the additional expenses that it implies, namely the cost of servicing the debt, and all the costs related to the increased risk of financial distress and bankruptcy.

Discussing the capital structure and corporate performance, El-Sayed Ebaid,I. 2009 reveals that capital structure choice decision, in general terms, has a weak-to-no impact on firm's performance, while Salehi, M. & Biglar, K. 2009 demonstrate that capital structure influences financial performance in Tehran Stock Exchange (TSE). The significance of the

influence of capital structure on performance respectively is belonged to measures of adjusted value, market value and book value. Ai-ling Pan, L. 2009, indicates that there exists a nonlinear inverse U shape relationship between capital structure and corporate performance, there also exists the same relationship between investment expenditure and corporate performance; corporate performance has a significantly negative influence on capital structure. Cheng Chen, H. 2009, concludes that Zhejiang family owned listed firms' debt financing is negatively correlated to corporate performance, current debt and long term debt both show a significant negative correlation to corporate performance, selection of debt financing has no significant relation to corporate performance. Finally, Al Mutairi, M. & Hasan, H. 2010 found that both capital structure and dividend policy significantly and positively influence firm value. They suggested that ownership structure impacts capital structure and dividend policy, which in turn affects firm value.

3. METHODOLOGY

This study uses ordinary least squares OLS multiple regression to test the effect of five capital structure factors (tangibility, liquidity, business risk (BR), , growth rate, and firm size) on firstly Return on Assets ROA, and on secondly Return on Equity ROE. Finally, we use OLS simple regression to test the effect of leverage on again Return on Assets ROA, and Return on Equity ROE.

Part one of this section describes data selection and data collection. Part two describes the model and measurement of variables. In part three, we illustrate the statistical techniques

3.1 Data Selection and Data Collection

This study examines yearly data relating to Saudi Arabia non-financial firms, the data ranges from 2004 to 2009. It is herein is collected from Saudi Arabia stock market website (Tadawul). Over the study period (2004-2009) we collect the available data relating to non financial sector companies in Saudi Arabia stock market. The number of those companies is 27. However, using a panel data we get 162 observations (6 years by 27 companies) the issue which enrich our database.

3.2 The Models:

The equation of the first model is

$$ROA = \alpha + \beta_i \text{ Tang} + \beta_j \text{ Risk} + \beta_k \text{ Size} + \beta_m \text{ Liquid} + \beta_n \text{ Growth} + \acute{\varepsilon}_i$$

Where:

Return on Assets ROA= Net Income / Total Assets
Tang: fixed Assets Ratio = Fixed Assets /   Total Assets
Risk: the standard deviation of Return on Assets
Liquidity: Current Ratio = Current Assets / Current Liabilities
Size: Natural Logarithm of the total assets
Growth: Growth Ratio = Market Value per Share / Book Value per share

The equation of the second model is

ROE = α + $β_i$ Tang + $β_j$ Risk + $β_k$ Size + $β_m$ Liquid + $β_n$ Growth + $έ_i$

Where:
return on Equity ROE = Net Income / Shareholders Equity

The equation of the third model is

ROA = α + $β_i$ Lev + $έ_i$

Where
Leverage Ratio: Total Debt / Total Assets

The equation of the fourth model is

ROE = α + $β_i$ Lev + $έ_i$

3.3 Stastistical Techniques

Ordinary Least Squares is a mathematical approach used for prediction, the objective from this analysis is developing a statistical model to predict the dependent variable from the values of the independent variables. Also it is used to find if the independent variables have a significant effect on the dependent variable.

4. EMPIRICAL RESULTS

Normality tests (Table 1):

- The skewness for the dependent variable and all the independent variables are different from zero which means that they do not have normal distribution. The skewness for ROA is near to zero but their kurtosis is different from three.
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- The Kurtosis for the dependent variable and all the independent variables are different from three which means that they do not have normal distribution. The kurtosis for risk are near three but their skewness are different from zero.

- The graphs in appendix no 1 prove evidence that the distribution of all the variables is not normal.

Table No 1

		ROA	ROE	Lev	Tan	Liq	Risk	Size	Growth
N	Valid	162	162	162	162	162	162	162	162
	Missing	0	0	0	0	0	0	0	0
Mean		0.1002	1.9141	0.2694	0.4858	2.9202	0.0381	21.1952	3.9864
Std. Deviation		0.1144	6.5729	0.1679	0.1894	3.3427	0.0330	1.9095	3.0877
Skewness		-0.1072	3.7778	0.8548	-0.4793	7.1328	1.6316	0.5430	1.5491
Kurtosis		-0.0873	14.0310	-0.1816	-0.5204	71.0224	2.9417	1.5671	3.2781

As shown in table no 2; the correlation matrix between the variables indicates that there is insignificant correlation between several variables among them ROA and tangibility, risk, and liquidity on the one hand, and ROE and leverage, tangibility, liquidity, risk, size and growth on the other. Nevertheless, the table also shows that there is significant correlation at 95% confidence level between tangibility and liquidity, and significant correlation at 99% confidence level between ROA and leverage, size and growth as well as tangibility and size.

Table no 2

		Roa	Roe	Lev	Tan	Liq	Risk	Size	Growth
Roa	Pearson Correlation	1	.186(*)	-.207(**)	0.118	0.113	-0.035	.278(**)	.250(**)
	Sig. (2-tailed)		0.018	0.008	0.134	0.152	0.662	0	0.001
Roe	Pearson Correlation		1	0.066	0.031	-0.014	0.04	-0.008	0.134
	Sig. (2-tailed)			0.404	0.696	0.864	0.612	0.922	0.089
Lev	Pearson Correlation			1	.279(**)	-.269(**)	-0.082	.537(**)	-0.012
	Sig. (2-tailed)				0	0.001	0.302	0	0.883
Tan	Pearson Correlation				1	-.179(*)	-0.125	.245(**)	0.004
	Sig. (2-tailed)					0.023	0.114	0.002	0.955
Liq	Pearson Correlation					1	0.054	-0.033	-0.116
	Sig. (2-tailed)						0.493	0.673	0.142
Risk	Pearson Correlation						1	-0.098	0.107
	Sig. (2-tailed)							0.216	0.175
Size	Pearson Correlation							1	-0.033
	Sig. (2-tailed)								0.672
Growth	Pearson Correlation								1
	Sig. (2-tailed)								
	N	162	162	162	162	162	162	162	162
*	Correlation is significant at the 0.05 level (2-tailed).								
**	Correlation is significant at the 0.01 level (2-tailed).								

Highlighting table 3, the adjusted R^2 is 14.9% which means that the independent variables explain 14.9% of the variations in the ROA but not all of it. This means that there are other variables which explain the dependent variable.

Furthermore, we can reject the main null hypothesis; there is no significant effect for all the variables on the ROA and accept the alternative hypothesis which indicate that there is significant effect for all the variables on the ROA. We based our rejection on the fact that P-value and F-statistics are less than 1% (1- confidence level (99%)), so it falls within the rejection area.

Regarding the other hypothesis, we cannot reject the null hypothesis which indicate that there is no significant effect for the tangibility on the ROA as the P-value is more than 10% (1-confidence level (90%)) which means that tangibility insignificantly affects the ROA.

Furthermore, we can reject the null hypothesis which indicates that there is no significant effect for the liquidity on the ROA, because the P-value is less than 5% (1-confidence level (95%)). The coefficient of the liquidity (independent variable) is 0.006 (significant at 5 percent). This means that liquidity significantly affects the ROA (positive relationship).

In addition, we cannot reject the null hypothesis which indicates that there is no significant effect for the risk on the ROA as the P-value is more than 10% (1-confidence level (90%)) meaning that the risk insignificantly affects the ROA.

Moreover, we can reject the null hypothesis which indicates that there is no significant effect for the size on the ROA as the P-value is less than 1% (1-confidence level(99%)). The coefficient of the size (independent variable) is 0.016 (significant at 1 percent). This means that size significantly affects the ROA (positive relationship).

Furthermore, we can reject the null hypothesis which indicates that there is no significant effect for the growth on the ROA as the P-value is less than 1% (1-confidence level (99%)). The coefficient of the growth (independent variable) is 0.010 (significant at 1 percent). This means that growth significantly affects the ROA (positive relationship).

On the other hand, variance inflation factors values are less than five, which means that even though there is correlation between the variables, still these correlations do not affect the regressions results. (Borenson & others 2004)

Moving to linearity test, the testing of the regression provide evidence that there is a linear relationship between each of the following independent variables tangibility, liquidity risk, size, growth and the dependent variable ROA. Although the Durbin Watson value is less than 2 which means that there is no autocorrelation between the residuals. In addition, we can notice that the residuals do not have patterns; finally the distribution of the residuals is normal. (Appendix no 2 shows the graphs).

Furthermore, the results show that there is no relationship between some of the capital structure determinants (Tangibility & Risk) and ROA. While its show that there is a positive relationship between the other determinants like (Liquidity, Size and Growth) and ROA. Tangibility, on the other hand, has no effect on financial performance because firms that develop a close relationship with their creditors need to provide less collateral in obtaining debt financing, because a close relationship can substitute for physical collateral.

Table 3 shows that size, growth and liquidity have the significant sign. As for the size factor, this gives us an indication that more assets employed in operation will lead to more production and therefore improve performance. The significance of growth, on the other hand, implies that there is a good future perspective and this certainly will be reflected in performance. Turning to liquidity, financial theories trade off between risk and profitability, as an over liquid economy; Saudi Arabia is more affected by risk rather than profitability.

Moving to table 4, the adjusted R2 is -1.2% which means that the independent variables do not explain any of the variations in the ROE. This indicates that there are other variables which explain the dependent variable.

Highlighting the hypothesis, we cannot reject the main null hypothesis which indicates there is no significant effect for all the variables on the ROE as the P-value and F-statistics are more than 10% (1- confidence level (90%)), so it falls within the accepting area.

Also, we cannot reject the null hypothesis which indicates that there is no significant effect for the tangibility on the ROE as the P-value is more than 10% (1-confidence level (90%)), meaning that the tangibility insignificantly affects the ROE.

Table No 3

	B	t value	P value	VIF
Model One				
Coefficients				
(Constant)	-0.320	-3.338	0.001	
tan	0.046	0.994	0.322	1.108
liq	0.006	2.290	0.023	1.050
risk	-0.132	-0.516	0.607	1.035
size	0.016	3.606	0.000	1.070
growth	0.010	3.832	0.000	1.028
Dependent Variable: roa			Durbin-Watson	0.770
R Square	0.176		F	6.648
Adjusted R Square	0.149		P value	0.000

In addition, we cannot reject the null hypothesis which indicates that there is no significant effect for the liquidity on the ROE as the P-value is more than 10% (1-confidence level (90%)). This means that liquidity insignificantly affects the ROE.

Finally, we cannot reject the null hypotheses which indicate that there is no significant effect for the risk on the ROE, there is no significant effect for the size on the ROE, and there is no significant effect for the growth on the ROE, as the P-value for these hypotheses are more than 10% (1-confidence level (90%)).

Turning to the variance inflation factors values which are less than five meaning that even though there is correlation between the variables, still these correlations do not affect the regressions results. (Borenson & others 2004)

The linearity test of the regression, on the other hand, provides evidence that the relationship between each of the following independent variables; tangibility, liquidity, risk, size, growth and the dependent variable ROE is not linear. Although the Durbin Watson value is less than 2 which means that there is no autocorrelation between the residuals. Furthermore, we can notice that the residuals do have patterns; which means there is a possibility of non linear relationship. Finally the distribution of the residuals is not normal. (Appendix no 3 shows the graphs).

Finally, the results show that there is no relationship between capital structure determinants and ROE, the issue which is consistent with Modigliani and Miller 1958 (MM-1958), and contradict with Du Pont Analysis. Also, this contradicts with the concept of financial leverage. This can be explained by the fact that the specialty of Islamic economy in Saudi Arabia prevents debt and interest which mainly due to the Quranic law of economics (Shari'ah principle).

Table No 4

	B	t value	P value	VIF
Model Two				
Coefficients				
(Constant)	0.601	0.100	0.920	
tan	1.302	0.450	0.654	1.108
liq	0.013	0.079	0.937	1.050
risk	5.876	0.365	0.715	1.035
size	-0.033	-0.116	0.908	1.070
growth	0.279	1.631	0.105	1.028
Dependent Variable: roe			Durbin-Watson	0.453
R Square	0.020		F	0.633
Adjusted R Square	-0.012		P value	0.675

Moving to table 5, the adjusted R2 is 3.7% meaning that the independent variables explain 3.7% of the variations in the ROA but not all of it. This means that there are other variables which explain the dependent variable.

Highlighting the hypotheses which are related to this table, we can reject the main null hypothesis which indicate that there is no significant effect for leverage on the ROA and accept the alternative hypothesis which indicate that there is significant effect for leverage on the ROA as the P-value and F-statistics are less than 5% (1- confidence level (95%)), so it falls within the rejection area. This means that leverage significantly affects the ROA (negative relationship)

As for variance inflation factors values, they are less than five. This result indicates that even though there is correlation between the variables, still these correlations do not affect the regressions results. (Borenson & others 2004)

Regarding the linearity test of the regression provide evidence that there is a linear relationship between each of the following independent variable leverage and the dependent variable ROA. Although the Durbin Watson value is less than 2 which means there is not autocorrelation between the residuals, we can notice also that the residuals do not have patterns; which means there is a possibility of non linear relationship. Finally the distribution of the residuals is normal. (Appendix no 4 shows the graphs)

Finally, the results of table 5 show that there is negative relationship between leverage ratio and ROA. The negative impact for leverage on ROA due to the nature of Islamic economy where there is no tax shield from leverage. This attributed to the principle of Zaka'a (A concept in Islam which charged kind of tax according to the total asset not on performance).

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Table no 5

Model Three				
Coefficents				
	B	t value	Pvalue	VIF
(Constant)	0.138	8.262	0.000	
Lev	-0.141	-2.673	0.008	1.000
Dependent Variable: roa				
R Square	0.043			
Adjusted R Square	0.037			
Durbin-Watson	0.574			
F	7.145			
P value	0.008			

Turning to table 6, the adjusted R2 is -0.2% which means that the independent variables do not explain any of the variations in the ROE indicating that there are other variables which explain the dependent variable.

Focusing on the hypothesis issue, we cannot reject the main null hypothesis which indicates that there is no significant effect for all the variables on the ROE as the P-value and F-statistics are more than 10% (1- confidence level (90%)), so it falls within the accepting area.

The variance inflation factors values are again less than five meaning that even though there is correlation between the variables; still these correlations do not affect the regressions results (Borenson, et al., 2004). The linearity test of the regression, on the other hand, provides evidence that the relationship between each of the following independent variable leverage and the dependent variable ROE is not linear. Although the Durbin Watson value is less than 2 which means there is not autocorrelation between the residuals. In addition, we indicate that the residuals do not have patterns meaning that there is no possibility of non linear relationship. Finally the distribution of the residuals is not normal. (Appendix no 5 shows the graphs).

Table no 6

Model Four				
Coefficient				
	B	t value	P value	VIF
(Constant)	1.218	1.243	0.216	
Lev	2.584	0.837	0.404	1.000
Dependent Variable: roe				
R Square	0.004			
Adjusted R Square	-0.002			
Durbin-Watson	0.439			
F	0.700			
P value	0.404			

Moving to table 7, the ratio of the extremes values is low as the number of the high extreme for dependent and independent variables is ranging between 2 and 16 observations

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only, which is about 1% – 10%. Similarly, the number of the low extremes for ROA and ROE is 1 observation; about 1% of the total observations, while for the size is 2 observations, about 1% of the total observations. Therefore the effect of these extreme values on the results is weak because the ratio is low.

Table no 7

	N	Mean	Std. Deviation	Missing		No. of Extremes(a)	
	Count	Percent	Low	High	Count	Percent	Low
ROA	162.000	0.100	0.114	0	0	1	0
ROE	162.000	1.914	6.573	0	0	1	12
lev	162.000	0.269	0.168	0	0	0	2
tan	162.000	0.486	0.189	0	0	0	0
liq	162.000	2.920	3.343	0	0	0	13
risk	162.000	0.038	0.033	0	0	0	10
size	162.000	21.195	1.910	0	0	2	16
growth	162.000	3.986	3.088	0	0	0	7

5. CONCLUSION AND RECOMMENDATIONS

The relationship between capital structure and performance is one of the main topics in corporate finance. Finance Scholars (such as Jensen and Meckling 1976) argue that developed market firms performance are affected by leverage, but little is empirically known about such implications in emerging economies such as Saudi Arabia. Furthermore, little is empirically known about the relationship between capital structure determinants and financial performance in developed as well as emerging markets.

The results show that there is no relationship between capital structure determinants and ROE on the one hand, and between leverage ratio and ROE on the other. In addition, the results indicate that there is no relationship between some of the capital structure determinants (Tangibility & Risk) and ROA, while there is positive relationship between other determinants such as (Liquidity, Size and Growth) and ROA. Finally, the results declare that there is negative relationship between leverage ratio and ROA.

Several points can be highlighted based on these results; in particular, the nature of the Islamic economy in Saudi Arabia prevents debt and interest because of the Quranic law of economics (Shari'ah principle). Based on the Shari'ah principle, transactions taking place in the capital market should be free from prohibited activities or elements such as usury (riba).

Moreover, the negative impact for leverage on ROA is mainly due to the specialty of the Islamic Economy which calls for no tax shield from leverage because of Zaka'a (A concept in Islam which charged kind of tax according to the total asset not on performance). Tangibility has no effect on financial performance as the close relationship can substitute for physical collateral. Finally, it is worth mentioning that our results were affected by the nature of Saudi Arabia economy which contains a huge degree of liquidity, availability of assets and good future perspectives. In this context, the main implication is that policy will need to pay attention to design financial instruments which are consistent with Islamic Laws and contain the leverage characteristics (low cost, tax shield). Furthermore, a more attention should be given on increasing the level of financial leverage in Saudi Arabia Firms to increase growth opportunities, and on exploiting the low cost of the debt in light of the financial resources

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availability. As a continuation of this study, further research should be carried out using other determinants as the adjusted R square in our model is low.

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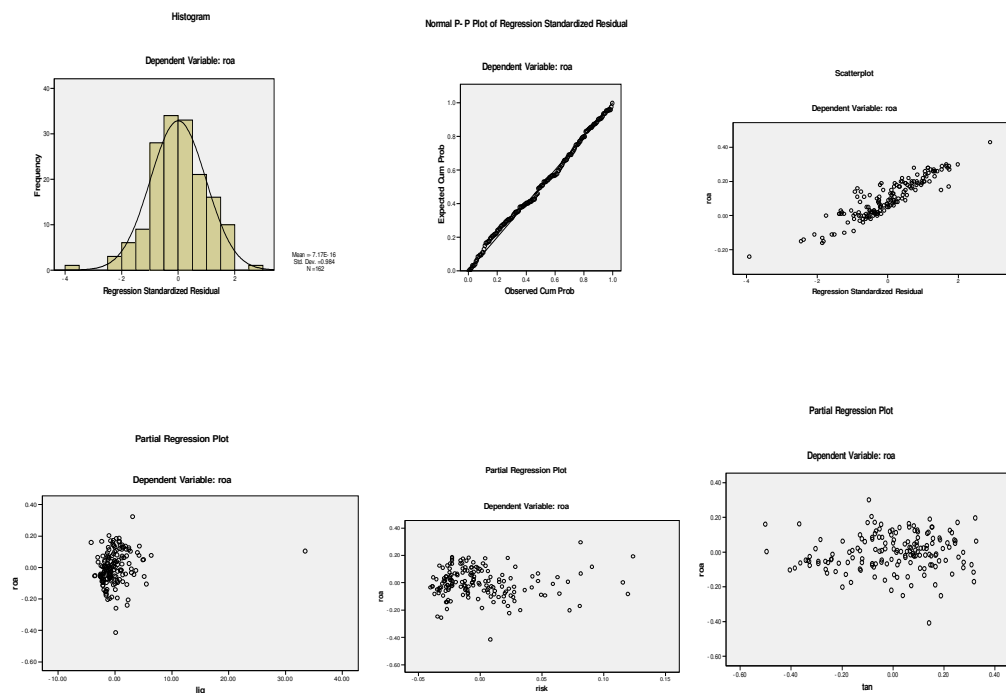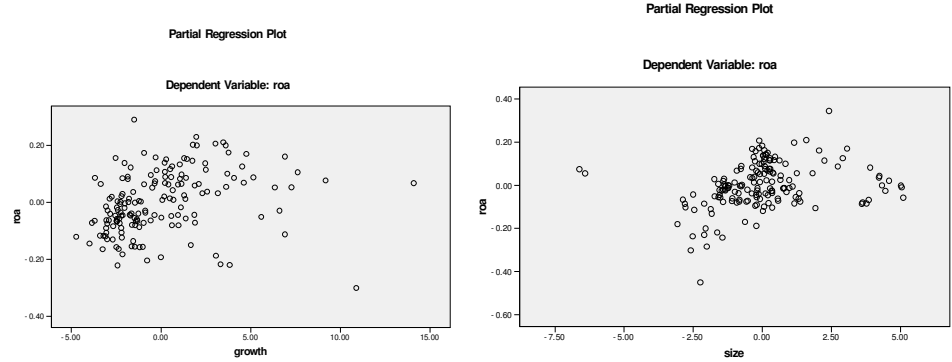
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Appendix No 1

Test of the Normality Histogram
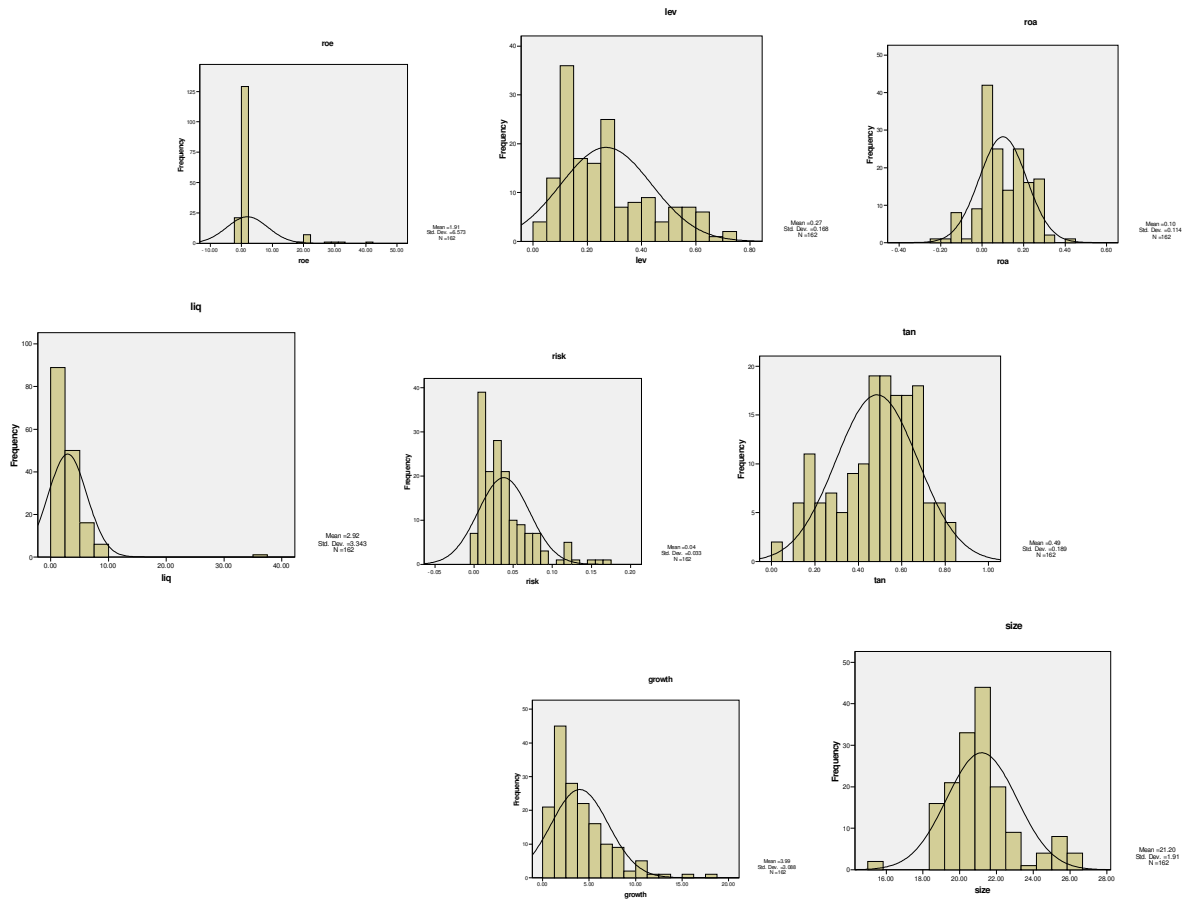
Appendix No 2
Test the linearity of the ROA Model

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Appendix No 3

Test the linearity of ROE Model
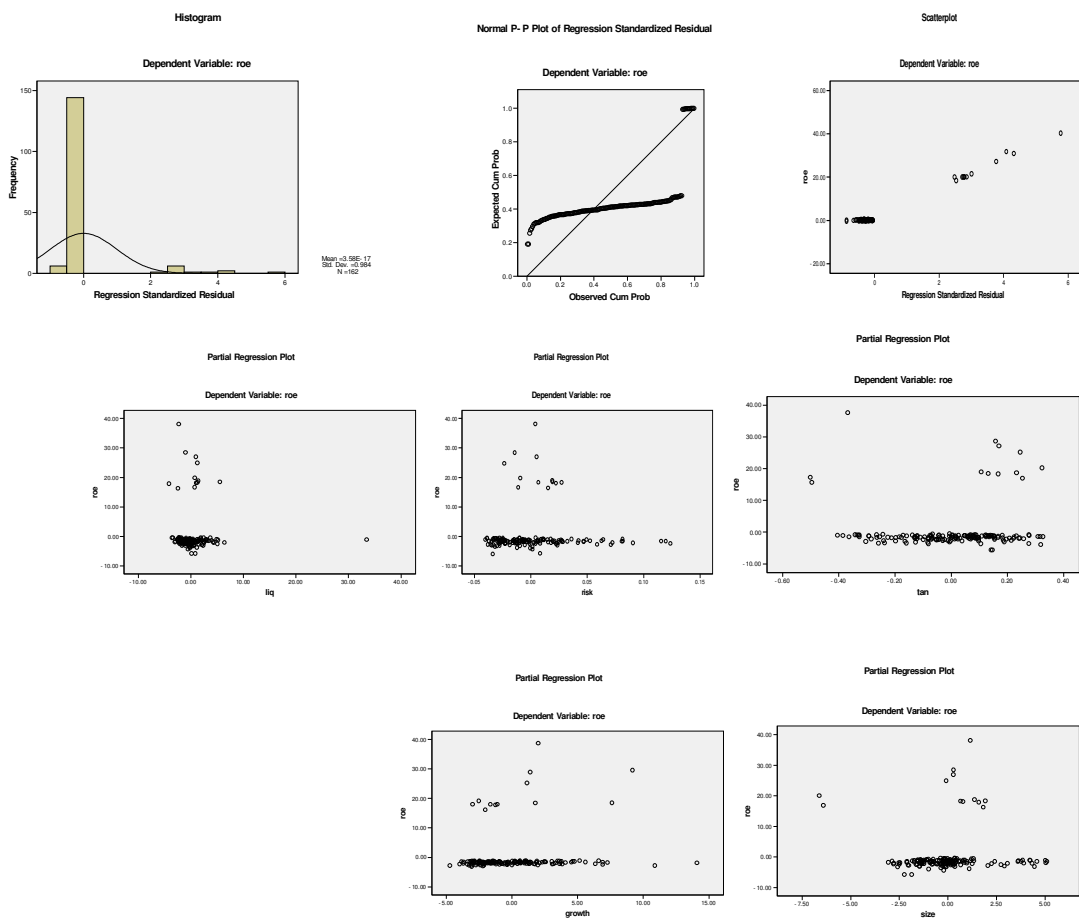
Appendix no 4
Test of linearity for ROA with Leverage

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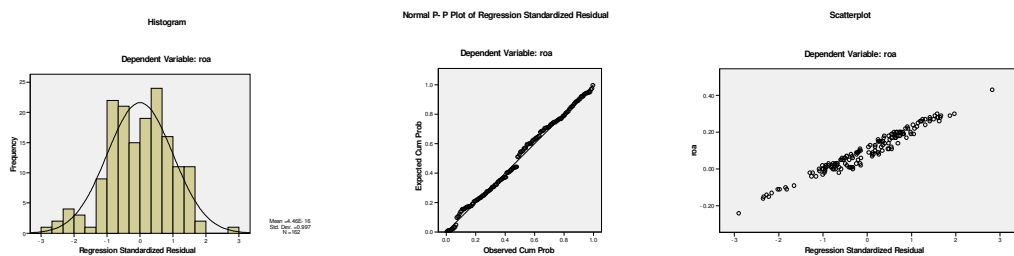
Appendix no 5
Test of linearity for ROE with Leverage