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IMPACT OF CAPITAL STRUCTURE ON ISLAMIC AND NON-ISLAMIC INSTITUTIONS OF PAKISTAN

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ABSTRACT

The prime purpose of this study is to analyze the capital structure impact on the performance of Islamic and non-Islamic financial institutes of Pakistan during the time of 2006-2013. To examine this impact, the researchers investigate empirically what are the outcomes of capital ratio on profitability indicator (EFCROE) of Shariah compliant financial firms as well as interest-based financial firms separately. The estimation technique generalized method of moments has been used for the proposed model. Both models verify the negative association of capital ratio with the efficiency of financial institutions. The lower equity with higher leverage becomes the cause of mitigating the agency cost of the firm and good performance as well. Hence, both models confirm the presence of agency cost theory in the financial sector of Pakistan. However, this effect in the Islamic financial sector is insignificant because of the small magnitude of the Islamic financial sector. The results suggest that managers should increase their debt financial instruments and lessen their equity financing to enhance their performance and the State Bank of Pakistan should take valid and sound steps to promote Islamic financial services in Pakistan

1. INTRODUCTION

Globally, the Islamic financial services industry is growing speedily for almost forty years. Global Islamic Finance Report 2019 expressed; industry's total assets have been registered US$ 2.591 trillion with a growth rate of 6.58% at the end of 2018. Islamic Finance Country Index (IFCI) 2019 reported that the rank of Pakistan was ten at global ranking as compared to seven in 2018. However, Islamic and non-Islamic financial firms perform similar functions as financial intermediaries, but the distinguishing feature of the former is to prohibit the interest (Riba) and other non-Islamic financial services. Both firms use debt to equity funding to fulfill the deficit spending and utilization of surplus spending of individuals and institutions. The debt and equity combination to overcome the deficit spending in an organization is called capital structure (CS).

Saad (2010) explains the funds of an institution are dependent upon the combination of debt and equity or some other blend of securities. Islamic financial firms also utilize leverage and sharing financing with their customers to generate the capital structure. The foundation of this financial structure is profit-loss sharing because interest-based financial tools are prohibited under Islamic jurisprudence. As the importance of capital structure decisions for long-term operations as well as the growth of institutions is cleared. Moreover, these decisions also have an impact on the performance of financial and non-financial institutions. Lintner (1956); Hirshleifer (1958) and Modigliani & Miller (1958) initially examined the relationship between a firm's performance and capital structure. Modigliani & Miller (1958) indicates the irrelevance of the market value of the company with capital structure.

Kereboah-Coleman (2008) precedes the trade-off amid the ratio of debt-to-equity to accomplish a company's proficiency and sanctioning the exterior cash flow levies. Companies employ executives to bring about their corporate competently. The main incentive of this agency is to augment shares value as well as the efficiency of the institution, but it remains unsuccessful because managers chase their interests. Agency costs of financial companies may be huge,

and the role of CS of the firms in the economy is imperative because they offer credit to other sectors of the economy for diffusing the effects of monetary policy combined with economic solidarity. So, the business connection among financial and other sectors of the economy and reversal of CS choices in the field of financial sector attracted Berger & di Patti, (2006) to hypothesize the occurrence and effects of agency costs in the finance sector. Pratomo & Ismail, (2007) empirically tested the influence of CS and efficiency of Islamic banks of Malaysia, their findings related to the existence of agency cost theory. Berger & di Patti (2006), Pratheepkanth (2011), Siddiqui & Shoaib (2011), Chinaemerem & Anthony (2012), Taani (2013), Ahmad T. (2014), Musah, A., Gakpetor, E. D. (2017), Ganiyu, Y. O., Adelopo I., Rodionova Y., Samuel, O. L. (2019) and Anh, N. T., Thao, T. T. P. (2019) analyzed whether the performance of financial and non-financial firms may be affected by capital ratio.

However, a comparative study to investigate the capital structure influence on profit efficiency of Pakistani Shariah compliant financial and non-Shariah complaint financial firms is the neglected part yet. This gap was tried to cover by examining the capital ratio impact on the ROE (efficiency indicator) of Shari'ah non-Shari'ah complaint financial firms registered in the Karachi Stock Exchange. We examine that higher leverage associates with the higher efficiency of institutions. To test this hypothesis, panel data has been used per annum financial statements of Shariah and non-Shariah complaint financial firms registered in Karachi Stock Exchange for the years of 2006 to 2013. We use the GMM estimator to overcome the endogeneity problem of our empirical model. Some controlled variables have also been included in the model to examine the relationship with efficiency indicator EFCROE, such as size, market concentration, risk, and loan of the firm.

The remaining sections of research are: Section 2 for literature review, Section 3 covers data and methodology, Section 4 contain results and discussion, Section 5 presents conclusion, and Section 6 limitations and implications for future research

2. LITERATURE REVIEW

Various studies have analyzed the cause-and-effect relation between CS and the performance of institutions working in both financial and non-financial sectors. Several types of research show that a lower level of equity becomes a cause to enhance a company's efficiency. So, the most favorable capital structure can be reflected by the minimal agency costs with high leverage, it is also useful to alleviate administrative contradictions between shareholders and directors of the firm. Jensen & Meckling (1976), Berger & Mester (1997), Berger & di Patti (2006) and Boodhoo (2009), Nyor & Yunusa (2016) empirically tested that capital ratio (shareholder's funds to total assets) was inversely and insignificantly related to the operational performance of the firm. On the contrary, Ahmad T. (2014), Oladeji *et al.* (2015), Nguyen & Nguyen (2015), Ahmad & Mohsin (2016) found a negative link between leverage and a firm's performance whereas Anh, N. T., Thao, T. T. P. (2019) examined negative and significant effect of debt financing on ROE in the linear model, but ROE presented adverse U-shaped relation with a non-linear model. However, the empirical results of Musah, A., Gakpetor, E. D. (2017) showed that the total debt to capital ratio is positively and insignificantly related to profitability. Ganiyu, Y. O., Adelopo I., Rodionova Y., Samuel, O. L. (2019), with a moderate combination of debt and equity funding, capital structure associates significantly with firm performance, but with excessive use of debt financing, it turns to non-monotonic relation, which negatively affects the performance of a firm.

Prior empirical studies show diversified relations between size and a firm's performance. The size of a firm is positively related to CS (Smirlock, 1985), and (Akhavein, J. Swamy, P. Taubman, S., 1997). Short (1979) explored that the financial stability of banks associated with the size of banks since the larger the size of a bank, the lower will be average cost and greater the profitability as well. Pratomo & Ismail (2007) analyzed that the Malaysian Islamic banks' performance was adversely affected by the size of a bank. Whereas some further researches empirically got positive relation between size and company's performance (Oladeji, Toluope, Ikpefan, & Olokoyo, 2015), (Musah, A., Gakpetor, E. D., 2017) and (Anh, N. T., Thao, T. T. P., 2019). The market concentration may grow with the efficiency of the bank (firm) larger the bank size, higher the market concentration and market share, higher the profit level, and lower level of average cost. Firms use the latest production techniques and managerial skills to mitigate the average cost of production and can obtain greater market shares, consequently they achieve higher concentration levels and greater profitability (Smirlock, 1985). If firms are ready to accept a higher level of risk in their business, they can attain greater profit and accordingly better performance of their work.

Berger & di Patti (2006), Siddiqui & Shoaib (2011), Chapra & Khan (2000) argued that Shariah compliant financial firms have to confront some specific risks as they use particular financial products i.e., profit-loss sharing services and sales-based debt-creating functions, and interest-free credit management techniques. While using the products and services they may handle some contradictions regarding fiqh opinions and obstacles of managerial and administrative skills to practice different derivatives. Pratomo & Ismail (2007) investigated that greater profit efficiency of banks has been incorporated with riskier banks, moreover, a *loan* may refer to as a total loan by comprising loans for consumption purposes, loans for business dealings and real estate motives as well and the results showed the insignificant adverse relation of total loans with banking efficiency, he found these results by using ordinary least square, fixed and random effects techniques. Siddiqui & Shoaib (2011) explored significant direct relations between ROE and loan by working with pooled data and the EGLS technique.

3. DATA AND METHODOLOGY

The annual panel data of conventional (23 conventional banks, five foreign banks seven investment banks, and seven development finance institutions) and Shari'ah compliant financial firms (five Islamic banks, ten Islamic Banking branches, and 16 mudarabah companies) has been used for empirical analysis. Annual Financial Reports of State Bank of Pakistan along with annual consolidated financial reports of firms for the time of 2006-2013 have been used to collect the data.

Multiple indicators of efficiency are exercised to gauge the profitability and efficiency of firms. The dependent variable of the research is, return on equity (ROE) as an efficiency indicator. Abor (2005), Amjed (2007), Pratomo & Ismail (2007), Siddiqui & Shoaib (2011), Musah, A., Gakpetor, E. D. (2017), Anh, N. T., Thao, T. T. P. (2019), Ganiyu, Y. O., Adelopo I., Rodionova Y., Samuel, O. L. (2019) have also practiced examining the ROE as an efficiency indicator. Several measures may be used to calculate leverage ratio, whereas examinees have worked with 'total equity to total asset' to compute leverage followed by (Berger & di Patti, 2006), (Pratomo & Ismail, 2007), and (Siddiqui & Shoaib, 2011). (Smirlock, 1985), Burger & Humphrey (1997), Akhavein, Swamy, & Taubman (1997), Goddard, Molyneux, & J. (2004), (Musah, A., Gakpetor, E. D., 2017) and (Anh, N. T., Thao, T. T. P., 2019) have measured the institution size with the natural log of Total Assets (TA) and they observed direct relation, however (Pratomo & Ismail, 2007) analyzed non-positive connection of firm size with its performance.

The frequently practiced indicator to compute the market concentration is the Herfindahl-Hirschman Index (HHI). HHI calculation method is, to take a square of the market share of each enmity firm of the market, and the formula is used: $HHI = \sum_{i=0}^{n} s_i^2$ (Bikker, J. Haff, K., 2000). Market concentration presents the degree of monopoly/competition of a corporation. HHI is directly and significantly related to EFCROE (Pratomo & Ismail, 2007). As far as a bank's business capacity is based on its loans, the researchers have used gross advances to gauge the loan of banks. The bank's risk is presented by the standard deviation of return on equity (SDROE) during the spell (Pratomo & Ismail, 2007).

3.1. **Methodology**

The following empirical model has been used to investigate the impact of CS on the performance of Shariah and non-Shariah complaint financial firms. Prior, this model was used by (Pratomo & Ismail, 2007), (Siddiqui & Shoaib, 2011)) and (Hoffman, 2013) to check the CS impact on financial institutions.

$$EFCROE_{it} = \beta_o + \beta_1 CAP_{it} + \beta_2 SZ_{it} + \beta_3 HERF_{it} + \beta_4 LOAN_{it} + \beta_5 SDROE_{it} + \varepsilon_i$$

In the above-stated model, *i and t* denote the number of financial firms and years respectively. EFCROE (Return on Equity) is an efficiency indicator, it is a proxy to measure profitability/performance, as the dependent variable. Right side variables are independent variables. CAP stands for the capital ratio to measure leverage ratio it is a proxy to measure capital structure impact. Some controlled variables can affect the performance of financial institutions such as SZ is the size of the firm, the calculation of the natural log of total assets has been practiced for obtaining firm's size. HERF represents the Herfindahl Index, it is calculated by using total assets. The data of Gross Advances of firms has been collected to compute LOAN. SDROE depicts the standard deviation of Return on Equity to analyze the institution's risk.

We must have to confront the endogeneity problem in our study, owing to some independent variables in the empirical model such as CAP & SDROE, might be ascertained and determined instantaneously by left-hand side variable EFROE, so it might be possible the existence of some autocorrelated errors and causality amid regressors and regress and of the regression model. Since, to overcome this problem we require some instrumental variables, Arellano & Bond (1990) established an efficient IV estimator structure of random effect models for adjustment of exogenous/independent variables to overcome endogeneity problems of econometric regression models. Whenever the residual term is associated with the regressors' distributions, the instrumental variables (IV) estimation may be practiced (Anh, N. T., Thao, T. T. P., 2019).

Generalized Method of Moments (GMM) is considered the extended form of IV estimation and can utilize for further diagnostic tests such as overidentification, heteroscedasticity, and endogeneity. In recent times, GMM is used to control these issues of regression models. The consistency and efficiency of GMM estimates are not affected by the presence of heteroscedasticity. So, to control the endogeneity problem of the model the researchers of this study have worked with the GMM estimation technique followed by (Hoffman, 2013) to deal with the variables of potential endogeneity (CAP, defined as equity over total assets and SDROE). Ganiyu, Y. O., Adelopo I., Rodionova Y., Samuel, O. L. (2019), utilized the GMM estimation methodology because the lag value of the dependent variable was included as a regressor in the model.

4. RESULTS AND DISCUSSIONS

4.1. Shari'ah Complaint Financial Firms

The validity of model specification has been tested with Sargan (1958), and Hasen (1982). The purpose of these tests is, to check the correlation between IV and residual. The autoregressive model's AR (1), (AR)2 observe the dependency of regress and on its past values and residual term, so it may work to check the first and second-order serial correlation of the estimated model.

Table 1. Shariah Complaint Financial firms

Variables	*Coefficients*	*Standard Errors*	*P* > | *z* |	
$EFCROE_{t-1}$	0.242*	0.42	0.002	
CAP	-0.032	0.003	0.331	
SZ	1.15	1.99	0.57	
HERF	0.48**	0.29	0.010	
LOAN	6.74**	3.48	0.05	
SDROE	1.48*	0.72	0.04	
Con	-119.7	44.5	0.008	
Observations	Prob > chi^2	Arellano-Bond test for AR (1) P-Value	Arellano-Bond test for AR (2) P-Value	Sargan test of over restrictions
124	0.002	0.83	0.68	0.93

* **denotes significance at level 5, 10%.

Table 1 presents the estimated results of Shari'ah-compliant financial firms; the null hypothesis of the Arellano-Bond AR test displays valid instruments because above-average P-Values of AR (1) test (0.83) and AR (2) test (0.68) can demonstrate the validity of instruments. Moreover, IV is exogenous and not correlated with residual term according to the null hypothesis of the Sargan test, because its probability value (P-Value) is noticeably high (0.93). Furthermore "prob> $chi^2 = 0.002$" shows model is overall significant.

The inferences of coefficients show that EFCROE is absolutely and significantly related to its lagged indicator $EFCROC_{t-1.}$ The capital ratio coefficient is not directly related to the performance indicator, this adverse relationship explains the cost of agency theory, lower the level of equity financing approaches to the higher-level organizational performance, this result is incorporated with the studies of Berger and di Patti (2006), Pratomo and Ismail (2007), Akintoye (2008), Boodhoo (2009) and Pratheepkanth (2011) and Chinaemerem & Anthony (2012). However, the capital ratio of Shari'ah-compliant financial firms is insignificantly related to EFCROE the reason for insignificancy is, the number of Islamic Banks and Islamic Banking Branches, and other Islamic financial firms is relatively less than the number of non-Shari'ah complaint financial firms. Furthermore, the mudarabah companies and Islamic banking branches of Pakistan are having no prominent equity-capital contribution to the Islamic financial sector of Pakistan, thus it does not have a significant effect on the overall Pakistani financial sector. EFCROE and the size of the bank (SZ) are directly and insignificantly related to each other.

Smirlock, (1985) and Akhavein, Swamy, & Taubman, (1997) found a positive effect of firm size on a firm's efficiency indicator whereas Pratomo & Ismail, (2007) have found adverse impact, their results about size and firm's performance are negative and significant. Herfindahl Index (HERF) has been used to analyze the market concentration for measuring the competition status of institutions, its impact on EFCROE is positive and significant at a 10% level of significance, it is consistent with the efficient-structure hypothesis it expresses that efficient firm can grow more and improve its performance. The positive relationship between HERF and EFCROE was also incorporated with the results of Smirlock (1985). LOAN estimator is directly related to the performance of Shari'ah-compliant financial firms at 10% level of significance, it is coherent with (Siddiqui & Shoaib, 2011) their results show the positive impact on loan and efficiency indicator, however (Pratomo & Ismail, 2007) estimations depict significant and direct relation between LOAN and EFCROE. The results of the relationship between LOAN and efficiency indicators may vary because multiple proxies can use to measure total loans. The risk measurement proxy for the financial sector is the standard deviation of return on equity (SDROE), which positively and significantly relates to EFCROE, it shows that higher profitability is associated with higher risk. Siddiqui & Shoaib (2011), Berger & di Patti, (2006), and Pratomo & Ismail (2007) studies also show high-risk approaches to the high level of institutional efficiency.

4.2. Non-Shari'ah complaint financial firms:

Empirical results of Shari'ah-compliant financial firms have been presented above, now estimation results of non-Shari'ah complaint financial firms are as follows:

Table 2: Non-Shari'ah complaint financial firms

Variables	*Coefficients*	*Standard Errors*	*P > | z |*	
$EFCROE_{t-1}$	0.252*	.063	0.000	
CAP	-0.334*	.125	0.008	
SZ	0.740*	0.340	0.030	
HERF	-0.331	0.243	0.173	
LOAN	-1.578**	0.812	0.052	
SDROE	0.453*	0.199	0.023	
Con	100.63	215.71	0.641	
Observations	Prob > chi^2	Arellano-Bond test for AR (1) P-Value	Arellano-Bond test for AR (2) P-Value	Sargan test of over restrictions
190	0.000	0.000	0.773	0.943

* ** denotes significance at level 5 10%

Table 2 presents the estimated results of non-Shari'ah complaint financial firms; the null hypothesis of the Arellano-Bond AR test displays valid instruments because P-Values of AR (2) test (0.773) is above average, so we can accept the null hypothesis about instrument validity. Moreover, IV is exogenous and not correlated with residual term according to the null hypothesis of the Sargan test, because its probability value (P-Value) is noticeably high (0.943), so the null hypothesis of the exogeneity of instruments can accept. Moreover, overall model significance can be proved by "prob> $chi^2 = 0.000$".

The inferences of coefficients show that EFCROE is positively and significantly related to its lagged indicator $EFCROC_{t-1}$. The capital ratio coefficient is not directly related to the performance indicator, this adverse relationship explains the cost of agency theory, lower the level of equity financing approaches to the higher-level organizational performance, this result is incorporated with the studies of Berger and di Patti (2006), Pratomo and Ismail (2007), Akintoye (2008), Boodhoo (2009) and Pratheepkanth (2011) and Chinaemerem & Anthony (2012). EFCROE and the size of the bank (SZ) are directly and significantly related to each other. Smirlock, (1985) and Akhavein, Swamy, & Taubman, (1997) found a positive effect of firm size on a firm's efficiency indicator whereas Pratomo & Ismail, (2007) have found adverse impact, their results about size and firm's performance are negative and significant. Herfindahl Index (HERF) has been used to analyze the market concentration for measuring the competition status of institutions, it is adversely and insignificantly related to efficiency indicator. It is not matching with the efficient-structure hypothesis. The result is opposite to the inferences of (Smirlock, 1985). The impact of the LOAN coefficient on financial firms' performance is significantly negative at a 10% level of significance, the result of Pratomo & Ismail (2007) is coherent with the result of this study, nonetheless (Siddiqui & Shoaib, 2011) findings are opposite. The risk measurement proxy for the financial sector is the standard deviation of return on equity (SDROE), positively as well as significantly relates to EFCROE, it shows that higher profitability is associated with higher risk. Siddiqui & Shoaib (2011), Berger & di Patti, (2006), and Pratomo & Ismail (2007) studies also show high-risk approaches to the high level of institutional efficiency.

5. Conclusion

In this research work, the examinees want to analyze the performance of Shari'ah-compliant financial firms and Non-Shari'ah complaint financial firms of Pakistan with the decisions of capital structure from 2006 to 2013. The final objective of this research is to compare the results of both the financial sectors of Pakistan. With the help of the Generalized Method of Moments (GMM) estimation technique, the empirical models are separately estimated for both sectors. As the capital ratio is negatively related to EFCROE shows the results may explain the agency cost theory of capital structure in both financial sectors of Pakistan. However, this inference is insignificant for Shari'ah-compliant financial firms whereas significant for Non-Shari'ah complaint financial firms. Estimations show that overall, capital structure decisions significantly affect the performance of financial institutions.

6. LIMITATIONS AND IMPLICATION FOR FUTURE RESEARCH

The results of this work can be worthwhile for Non-Shari'ah complaint financial firms and Shariah compliant financial firms to understand that they can minimize their agency cost with low equity and high leverage. The insignificant effect of capital structure on the performance of Shariah-compliant financial firms depicts the vast opportunities for interest-free debt financing securities, bonds, and debentures since it may help to diminish agency costs and develop the Islamic financial market in Pakistan. Because capital structure decisions and the firm's performance are empirically tested. However, someone can investigate the impact of some external factors (tax policy of the government, inflation rate, capital market condition, market rate of return) on the firm's performance. Moreover, the data of Pakistani takaful companies, conventional leasing companies, and insurance companies can be used in further researches.

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