Full Length Article Open Access

# Relationship between Capital Structure and Profitability: Dual Banking Perspective

**Mudassir Zaman[1], Shakir Ullah[2], Arshad Ali[3]**

*[1] MS (Finance), Institute of Management Sciences, Hayatabad Peshawar*
*[2]Assistant Professor, Institute of Management Sciences, Hayatabad Peshawar*
*[3]Assistant Professor, Department of Management Studies, University of Malakand, KPK*

**ABSTRACT**

This study looks into the relationship between the capital structure and profitability of Islamic and conventional banks, listed on the Karachi Stock Exchange extracting data for 250 observations between 2006 and 2016 from their financial statements. The paper uses regression analysis to check the proposed relationship. We found a strong correlation between Debt-to-Equity (D/E) ratio and Return on Equity (ROA) in conventional banks while no significant relationship existed in Islamic banks. The findings can be explained in terms of the different deposit mechanisms employed by the two systems i.e. the conventional banking system considers all deposits as liabilities of the banks while on other hand Islamic banks only write the current accounts as a debt. The Modaraba-based deposit accounts of Islamic banks are considered as equity. This paper contributes theoretically to the current body of Islamic finance literature in Pakistan. On the practical side, the study suggests that Islamic banks can increase their savings deposits as they pose no risk and have equity-like features.

**Keywords:** Government support, Educational institutions support and Entrepreneurial culture

## 1. INTRODUCTION

Capital structure is the ratio between a company's debt and equity, which affects the net profits because of the tax benefits. Our study focuses on the banking sector of Pakistan to show the impact of debt level on the profitability of the banks. Financial institutions are the epicenters of all economies (Hernandez and Menon 2019, Shair, Sun et al. 2019). Capital structure is highly related to conventional as well as Islamic banks as they are mostly dependent upon capital regulations (Chen, Hang et al. 2019, Doku, Kpekpena et al. 2019, Graham and Harvey 2019, Tatoglu, Frynas et al. 2019). Pakistan has regularity support for Islamic and conventional banks and therefore the two systems

*Address of Correspondence*
*Shakir Ullah*
*shakir.ullah@imsciences.edu.pk*

*Article info*
*Received June 16,2019*
*Accepted March 28,2020*
*Published March 30,2020*

coexist ( Rizvi, Narayan, Sakti, and Syarifuddin, 2019). Islamic banking is growing very fast in Pakistan and in the entire world (Ullah, Jamali et al. 2014, Ullah, Harwood et al. 2018, Afaq, Raza et al. 2019). There are several differences between the two systems, but one key difference is that most of the Islamic banks' deposits, with the exception of current accounts, are considered as equity rather than a liability because Islamic banks cannot take interest-bearing deposits from customers (Al-Hunnayan 2020, Desai and Desai 2020). On the other hand, conventional banks consider all types of deposits as debt, a liability of the bank (Saiti, Ardo et al. 2019). Any interest paid out to the depositors of the conventional banks is an expense and eligible for earning tax benefits, which is not available to Islamic banks (Alam, Hamid et al. 2019). This research study is intended to find whether the capital of the two banking systems can affect their profitability. Data for this study were collected from twenty conventional banks and five Islamic banks, which are listed on the KSE between 2006 and 2016, representing 250 banking years of the observations.

Banks normally offer three types of deposit accounts to clients i.e. current, savings and fixed deposit accounts. In addition to these accounts, different certificate-bills and bonds are also offered to customers to fulfill their individual needs and risk appetite. The firms whose capital structures are made up of equity and debt are known as leveraged firms (Buallay, Cummings et al. 2019). In the banking sector, up to 80% debt finance and 20% equity finance is the norm. The debt is the most significant liability for a commercial bank because the same money is used for lending out to firms in order to earn revenues for the banks (Shawtari, Ariff et al. 2019). As leverage firms pay tax after paying interest expenses to clients, they receive a tax benefit for the interest expense paid out to depositors. In Pakistan leveraged firms such as conventional banks have a more debt finance as compared to Islamic banks, because Islamic banks' deposits are more like equity than debt. Islamic banks earn their revenues from trade-based and profit and loss based instruments (Nawaz 2019).

We use regression analysis, taking Return on Equity (ROE) and Return on Assets (ROA) as the dependent variables and the Debt-to-Equity (D/E) ratio, Asset Tangibility (TANG), Firm (SIZE) and availability of Growth Opportunities (GROW) as the predictor

variables. Our findings suggest that conventional banks debt employment is positively related to their profitability while that is not the case with Islamic banks.

The next section of the paper summarizes the most relevant literature on the subject followed by the research methodology employed in this paper. Then we move the analysis, findings and discussions. The last section concludes the paper.

## 2. LITERATURE REVIEW

Efficient business management has become extremely important in all respects (Acharya and Naqvi 2019, Cartea, Payne et al. 2019, Tan and Sousa 2019). The relationship between capital structure and profitability has been the focus of scholarly research for many years around the globe with some studies claiming positive correlations, some negative and others find no significant relationship between the two (Sivalingam and Kengatharan 2018). Deciding upon the share of debt and equity in the capital structure is vital for every bank as the performance of every bank is effected directly by such decisions (Ul QAYYUM, NOREEN et al. 2019). Rogova (2014) showed that financial structure extracted from capital structure which is used to organize and finance the firm is maintained by the firm equity and debts combination. Modigliani and Miller (1958) determined that firms benefit from employing debt only when there is a corporate income tax levied upon companies. They further asserted that in the absence of a corporate tax, leveraged and unleveraged firms will have the same profitability. Thus, the question of financing the organization is crucially important to both the fund providers and the managers in the current arena of corporate taxation. The wrong mix of finances employed severely affects the value and performance of the firm.

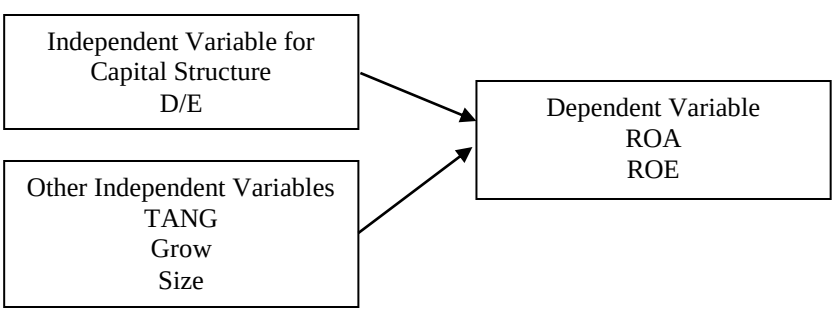
Ramadan and Ramadan (2015) studied the link in capital structure profitability. They found that performance is negatively related to the debt ratios. A similar study was conducted by Sivalingam and Kengatharan (2018) on commercial banks in Sri Lanka, which concluded that a similar relationship, negative, existed between capital structure and profitability. Numerous studies have supported similar results Pakistan (Khan 2012, Salteh, Ghanavati et al. 2012, Chang, Chen et al. 2014, Nikoo 2015, Siddik, Alam et al. 2017).

Onaolapo and Kajola (2010) termed capital structure as an important factor in all businesses. On the other side the impact of the decision regarding the capital structure employed, enables a company to deal with the competition. Firms clearly state in their strategic plan how they should deal with the appropriate level of debt and equity so as to maximize their value.

Berger and Bonaccorsi di Patti (2002) showed that leverage had an effect on the agency costs and had influenced firm performance. Agency theory approach suggested complex relationships between various types of securities and agency costs. They use indicator for profit efficiency of firm performance to measure agency costs. Corporate governance theory showed that leverage of any business firm affected agency costs (Berger and Bonaccorsi di Patti 2002). They clearly stated that the Central Bank is the same regulatory authority which play a very important role in the banking industries, but every organization setup is different from each other by corporate governance. Therefore, different issues can be generated by corporate governance rather than by any differences in regulation of the industry examined (Khaleequzzaman, Mansuri et al. 2019).

The finance managers want to maximize the wealth of the shareholder by considering the optimal use of a capital structure (Raza, Shah et al. 2019). Tudor (2012) examined the development of various debates on firm performance and capital structure in order to evaluate the intensity and direction of the research field. Any reason employed by any theory cannot be expected to make a vital emergence and acceptance (Shah, Rashid et al. 2019).

At comparatively low levels of leverage and debt, it increased the profitability and bank performance. Kochhar (1997) emphasized that the active role of financial management in generating better performance for a firm.



## 3. RESEARCH METHODOLOGY

We use regression analysis in this study. The list of variables used in this research has been extracted from the literature.

**Independent Variables**

D/E has been used as an independent variable in this study. Usually conventional banks have a greater proportion of debt because all deposits are considered as debts (Hameed, Naveed et al. 2019). On this other hand, Islamic banks have a comparatively lower level of debt because all deposits other than current accounts are dealt with as equity. Anwer and Habib (2019) examined that firm profitability increases with increasing debt; assuming that the agency costs remain intact. Therefore, we expect a negative relationship between firm profitability and D/E ratio. Hence, the following hypotheses emerge.

***$H_1$**: Capital structure should have an inverse effect on profitability*

Size of firm is another independent variable because it has an impact on firm performance examined that bigger firms carry the economies of scale and therefore have a positive effect on firm performance. Larger firms have easy access to cheaper debt because of their trustworthiness, which consequently increases firm performance (Hameed, Naveed et al. 2019). Therefore, this research assumes a positive relationship between the size of a firm and its profitability and hence the hypothesis:

***$H_2$**: Firm size should have a positive effect on its performance*

Literature suggests that the existence of growth opportunities increases a firm's financial performance, e.g. suggest that a firm's growth opportunities increase profits from the investment portfolio of an organization. The growth opportunities in Islamic banking are far better than those of conventional banking and that is probably one reason that several conventional banks have entered into the Islamic banking market in addition to the emergence of full-fledged Islamic banks. Therefore, this research also hypothesizes that growth opportunities will positively impact firm performance.

***$H_3$**: Growth opportunities should a positive effect on firm performance*

In the case of financial institutions, the amount of tangible assets is smaller as compared to manufacturing and some other non-financial firms (Anwer and Habib 2019). Most of the financial firms' tangible assets are in the form of buildings and fixtures. (Mackenzie 2007) argue that a firm with larger amount of tangible assets, which includes plant, property and equipment have easy access to debt because the same assets can be used as pledges (Rashid and Shah 2019). Furthermore, suggests that higher leverage leads to higher profitability. Firms with large investments in the tangible assets suffer smaller shocks from financial distress as compared to firms that rely on intangible assets. Therefore, a positive relationship can be assumed between tangible assets and firm performance.

***$H_4$**: Asset tangibility should have a positive relationship with firm performance*

**Dependent Variables**.

ROI is a measure of a firm's performance relative to its investment in assets (Rashid and Shah 2019). ROA has been taken as the dependent variable in this study. ROE is another profitability measure. It measures the return investors take on their investment in the firm. Therefore, this measure has been taken up as another dependent variable in this study.

**Sample Selection**

The financial statements were downloaded from the websites of the banks to extract data from. A total of 25 commercial banks (20 conventional and 5 Islamic), which are listed on the Karachi stock exchange were considered for this study. In arrangement to channel against lack of data availability, only 5 full-fledged Islamic banks. Data on the selected variables was extracted from 2006 to 2015.

**Model**

The multiple regression model was used to measure the impact of the D/E, the tangibility of assets (TANG) and growth opportunity (GROW) on the banks' performance measured in terms of ROA (return on assets) and ROE (return on equity) ROE.

$$ROA = \alpha + \beta_1 (D/E) + \beta_2 (TANG) + \beta_1 (SIZE) + \beta_1 (GROW) + Ei$$

$$ROE = \alpha + \beta_1 (D/E) + \beta_2 (TANG) + \beta_1 (SIZE) + {}_{\beta 1} (GROW) + Ei$$

## 4. RESULTS AND DISCUSSION

Gretel Pooled OLS was used on the models of multiple regression using panel data, where all the observations in OLS regression were pooled and it was assumed that the coefficients were the same for all the banks. The two models were run three times i) once for conventional banks only, ii) the second time for Islamic banks only and iii) the third time for conventional and Islamic banks together. The results have been summarized below.

### 4.1. Capital Structure and Profitability of Conventional Banks

Pooled OLS regression was run on the two models using 200 observations consisting of conventional banks. This included 20 cross-sectional units and the length of the time-series was 10 years. The dependent variables are ROA and ROE. The results of the test are given in the second and third column of Table 1 below.

**Table 1.Pooled OLS Regression Analysis**

| | Conventional Banks | | Islamic Banks | | Islamic & Conventional | |
|---|---|---|---|---|---|---|
| **Variables** | **ROA** | **ROE** | **ROA** | **ROE** | **ROA** | **ROE** |
| D/E | .0013428*** | 0.298679** | -.00022 | 0.00809 | -0.041761*** | 0.010678 |
| TANG | -0.09773** | - | 0.03067 | 0.49210 | -0.1345295 | 0.302324* |
| SIZE | 0.00893*** | 0.12481*** | 0.0155 | 0.287** | 0.0102288*** | 0.3773373 |
| GROW | -0.025671 | 0.875674 | 0.0993 | -0.4367 | 0.04320398 | -0.426733 |
| P-value | 9.73e-05 | 6.49e-06 | 0.0425 | 2.90e-06 | 5.99e-06 | 3.84e-06 |
| R square | 0.395462 | 0.405363 | 0.4474 | 0.99230 | 0.3748535 | 0.9825340 |
| Adjusted | 0.234544 | 0.512365 | 0.3776 | 0.88762 | 0.356723 | 0.656728 |
| Durbin | 0.8652456 | 0.576828 | 0.9895 | 0.77367 | 0.5756743 | 0.645368 |

Table 1 presents a concise summary of the six tests that were run on the data. Column 2 and 3 show the results for conventional banks only, column 4 and 5 are for Islamic banks and column 6 and 7 are for the two systems combined.

The smaller p-values for ROA and ROE show that the output of Gretel Model is significant at 1%. The R-square values means the variance in the dependent variables can be explained by the independent variables.

**Interpretation-Conventional banks**: It can be seen from the results that a weak

and positive relationship is there between profitability measures D/E of the conventional banks and is significant at 1% level. Asset tangibility has a significant negative relationship with profitability while the availability of growth opportunities has no significant relationship with ROA and ROE. Therefore, our hypothesis (H1) is accepted while $H_2$ and $H_3$ are rejected. It proves that conventional banks become more profitable with the injection of additional debt.

**Interpretation of the Islamic banks**: Table 1 reveals that D/E has no impact, significant, on the Islamic Banks profitability and our hypothesis (H1) is therefore rejected. This can be explained by the equity nature of the deposits of Islamic banks (Rashid and Shah 2019). This is in line with what we found for conventional banks. However, Islamic banks' asset tangibility and size positively and significantly related to one measure of profitability i.e. ROE. We had similar results for the size and ROE for conventional banks, but asset tangibility of conventional banks was negatively correlated with profitability. This may mean that conventional banks have overgrown in size which is impairing their profitability while Islamic banks still have a window to expand further (Al-Hunnayan 2020).

**Interpretation of the Islamic banks' combined**: When the two systems' data are analyzed together, we find that ROA has a significant and negative relation with D/E while the relationship with ROE is insignificant. This rejects our H1 for the combined data. Asset tangibility has a strong positive and significant relationship with ROE, however, the link with ROA is insignificant. It is also observed that firm size has a positive impact, significant, on the measures of profitability for the combined Islamic and conventional data. However, Growth opportunities have no significant impact in any case.

## 5. CONCLUSION

This study examines the relationship between capital structure and profitability of Islamic and conventional banks in Pakistan. We find a positive relationship between conventional banks' debt-to-Equity ratios with ROA and no relationship in Islamic bank between debts to equity with ROA. This could be because the banking system employs

all types of deposits as a debt of the customers that keep up the base of liability of the bank while on the other hand, Islamic banks only use the current account to keep up the base of liability of the bank. It could be inferred from the findings Islamic banks should rather increase their equity base by raising more deposits or equity while conventional banks are better of with more deposits that are treated as a liability. The research adds to the existing literature on Islamic banks' capital structure and financial performance especially in the Pakistani market where there is a dearth of literature on the subject. The practical implications of the study portray that Islamic banks needs to make more efficient use of their Modaraba deposits in order to increase financial performance. Further research could be conducted to use more recent data and including more Islamic financial institutions. One can also compare the phenomenon in Pakistan with other countries that have a strong base for Islamic finance e.g. Malaysia.

## REFERENCES

*Acharya, V. and H. Naqvi (2019). "On reaching for yield and the coexistence of bubbles and negative bubbles." Journal of Financial Intermediation 38: 1-10*

*Afaq, M., et al. (2019). "A comparative study of operational efficiency of Pakistani and Malaysian islamic banks: Data envelopment analysis approach." Asian Economic and Financial Review 9(5): 559-580.*

*Al-Hunnayan, S. H. (2020). "The capital structure decisions of Islamic banks in the GCC." Journal of Islamic Accounting and Business Research.*

*Alam, N., et al. (2019). "Does competition make banks riskier in dual banking system?" Borsa Istanbul Review 19: S34-S43.*

*Anwer, Z. and F. Habib (2019). "Re-visiting Current Debate on Sharı 'ah Position of Derivatives." Journal of Islamic Business and Management 9(1): 64-83.*

*Berger, A. N. and E. Bonaccorsi di Patti (2002). "Capital Structure and firm performance." A new approach to testing agency theory and application to the banking industry.*

*Buallay, A., et al. (2019). "Intellectual capital efficiency and bank's performance." Pacific Accounting Review.*

*Cartea, Á., et al. (2019). "Ultra-fast activity and intraday market quality." Journal of Banking & Finance 99: 157-181.*

*Chang, C., et al. (2014). "What are the reliably important determinants of capital structure in China?" Pacific-Basin Finance Journal 30: 87-113.*

*Chen, Z., et al. (2019). "Corporate Social (Ir) Responsibility and Corporate Hypocrisy." Business Ethics Quarterly.*

*Desai, J. and R. Desai (2020). "Capital Structure and Profitability: Correlation study for Bank NIFTY." Our Heritage 68(22): 16-21.*

*Doku, J. N., et al. (2019). "Capital Structure and Bank Performance: Empirical Evidence from Ghana." African Development Review 31(1): 15-27.*

*Graham, I. B.-D. J. R. and C. R. Harvey (2019). "Managerial miscalibration." Quarterly Journal of Economics 128(4): 1547-1584.*

*Hameed, N., et al. (2019). "How Financial Leverage Differs Between Conventional and Islamic Banks: A Dynamic Model Perspective of Banking Sector in Pakistan." Journal of Islamic Business and Management 9(2): 272-293.*

*Hernandez, E. and A. Menon (2019). "Corporate Strategy and Network Change." Academy of management review(ja).*

*Khaleequzzaman, M., et al. (2019). "An Empirical Study of Sharı 'ah Legitimacy of Islamic Banking Operations in Pakistan." Journal of Islamic Business and Management 9(2): 294-313.*

*Khan, A. G. (2012). "The relationship of capital structure decisions with firm performance: A study of the engineering sector of Pakistan." International Journal of Accounting and Financial Reporting 2(1): 245-262.*

*Kochhar, R. (1997). "Strategic assets, capital structure, and firm performance." Journal of Financial and Strategic decisions 10(3): 23-36.*

*Mackenzie, C. (2007). "Boards, Incentives and Corporate Social Responsibility: the case for a change of emphasis." Corporate Governance: An International Review 15(5): 935-943.*

*Modigliani, F. and M. Miller (1958). "The cost of capital, corporation finance and the theory of finance." American Economic Review 48(3): 291-297.*

*Nawaz, T. (2019). "Exploring the nexus between human capital, corporate governance and performance: Evidence from Islamic Banks." Journal of Business Ethics 157(2): 567-587.*

*Nikoo, S. F. (2015). "Impact of capital structure on banking performance: Evidence from Tehran Stock Exchange." International Research Journal of Applied and Basic Sciences 9(6): 923-927.*

*Onaolapo, A. A. and S. O. Kajola (2010). "Capital structure and firm performance: Evidence from Nigeria." European Journal of Economics, Finance and Administrative Sciences 25(1): 70-82.*

*Ramadan, Z. S. and I. Z. Ramadan (2015). "Capital structure and firm's performance of Jordanian manufacturing sector." International Journal of Economics and Finance 7(6): 279-284.*

*Rashid, A. and M. A. R. Shah (2019). "Do Bank Size and Liquidity Position Matter in the Monetary Policy Transmission Mechanism? Evidence from Islamic and Conventional Banks in Pakistan." Journal of Islamic Business and Management 9(2): 248-271.*

*Raza, S. A., et al. (2019). "Acceptance of mobile banking in Islamic banks: evidence from modified UTAUT model." Journal of Islamic Marketing.*

*Rogova, E. (2014). Dupont analysis of the efficiency and investment appeal of russian oil-extracting companies. 8th International Scientific Conference "Business and Management.*

*Saiti, B., et al. (2019). "Why non-Muslims subscribe to Islamic banking?" Qualitative Research in Financial Markets.*

*Salteh, H. M., et al. (2012). "Capital structure and firm performance; Evidence from Tehran Stock Exchange." International Proceedings of Economics Development & Research 43(1): 225-230.*

*Shah, M. R., et al. (2019). Determinants of Financial Leverage in Islamic Banks. Islamic Finance, Risk-Sharing and Macroeconomic Stability, Springer: 121-149.*

*Shair, F., et al. (2019). "Impacts of risk and competition on the profitability of banks: Empirical evidence from Pakistan." PloS one 14(11).*

*Shawtari, F. A., et al. (2019). "Efficiency and bank margins: a comparative analysis of Islamic and conventional banks in Yemen." Journal of Islamic Accounting and Business Research*

*Siddik, M., et al. (2017). "Impacts of capital structure on performance of banks in a developing economy: Evidence from Bangladesh." International journal of financial studies 5(2): 13.*

*Sivalingam, L. and L. Kengatharan (2018). "Capital structure and financial performance: A study on commercial banks in Sri Lanka." Asian Economic and Financial Review 8(5): 586-598.*

*Tan, Q. and C. M. Sousa (2019). "Why poor performance is not enough for a foreign exit: The importance of innovation capability and international experience." Management International Review 59(3): 465-498.*

*Tatoglu, E., et al. (2019). "Why do emerging market firms engage in voluntary environmental management practices? A strategic choice perspective." British Journal of Management.*

*Tudor, D. (2012). Korea: The impossible country: South Korea's amazing rise from the ashes: The inside story of an economic, political and cultural phenomenon, Tuttle Publishing.*

*Ul QAYYUM, N., et al. (2019). "Impact of Capital Structure on Profitability: A Comparative Study of Islamic and Conventional Banks of Pakistan." The Journal of Asian Finance, Economics and Business (JAFEB) 6(4): 65-74.*

*Ullah, S., et al. (2018). "'Fatwa repositioning': the hidden struggle for Shari'a compliance within Islamic financial institutions." Journal of Business Ethics 149(4): 895-917.*

*Ullah, S., et al. (2014). "Socially responsible investment: insights from Shari'a departments in Islamic financial institutions." Business Ethics: A European Review 23(2): 218-233.*