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Does Working Capital and Financial Structure Impact Profitability of Islamic and Conventional Banks Differently?

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Abstract

One of the essential factors for the financial growth of a country is a stable banking system. Over the past few years, Islamic banking industry of Pakistan has grown substantially. However, it faces many challenges regarding its financial stability. The present study attempts to examine the impact of working capital and financial structure on Pakistan banking sector profitability. The study used generalize least square (GLS) estimation analysis on 5 Islamic banks over the period 2006 to 2014 and 15 conventional banks from 2008 to 2014. Return on assets (ROA), return on equity (ROE) and net income (NI) are used as dependent variables. Working capital and proportion of funds provided by bank creditors are used as independent variables. Bank size, deposit ratio, gross domestic product (GDP) and inflation (CPI) are used as control variables to control heterogeneity and co-linearity among variables. Study found an increase in working capital results decrease in the profitability of Islamic and conventional banks. However, financial leverage has statistically significant positive impact on profitability of Islamic banks and vice versa for conventional banks.

Keywords: **f**inancial structure, working capital, Islamic banks, conventional banks, Profitability

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Introduction

Banking sector plays an important role in growth of financial system, but nowadays banking industry is facing many challenges, such as regulatory, liquidity and working capital requirements, that influence the banking industry significantly. These challenges demand prudent decisions to solve the problems, important for existence of any institution for their sustainable prolongation. Thus, not only bankruptcy risk maybe reduced but also the profitability of the banks may also be enhanced. There is conflict of interest between two groups; ones who provide funds to the banks (depositors/investors) and look forward to high profitability on their investments. Secondly, bank management which faces difficulties to manage the balance of liquidity to attain the higher profitability by overseeing and investigating financial leverage and working capital, and with deep contemplation to accomplish better results on the spending money. An organization, either profit oriented or not, regardless of its size and business nature requires critical measure of working capital (Mukhopadhyay, 2004).

Working capital is one of the most crucial factor for maintaining liquidity, profitability, and sustainable growth in the business (Gul et al., 2013). Raheman and Nasr (2007) recommended that organizations that manage their cash, inventories and accounts' receivables are able to build most from their resources. Moreover, Ricci and Vito (2000) stated that motivation behind working capital management is to deal with the company's present records to achieve financial harmony during profit (return) and loss (risk) phase. The working capital management is seen as one of the key mechanism to meet the short term objectives of an organization. Generally, working capital is measured by cash in hand, receivables, account payable and cash conversion cycle.

Financial structure defines the debt to equity formation of the organizations. Financial structure is ratio of total liabilities (short term and long term liabilities) over the company's shareholders equity. This ratio focuses on liabilities and equity and is effective to describe how organizational finances and operations are growing through various sources of funds (Modigliani & Miller, 1958). Shubita and Alsawalhah (2012) recommended that a firm with high profit depends excessively on equity as its main financing decision. Organizations must keep up an optimal level of working capital by overlooking few dynamic speculation opportunities and enduring fleeting liquidity crisis rather holding lower working capital. In contrast, if organizations hold working capital more than required, it will illustrate the company management inefficient and weaken to take benefit from short term investments (Nazir and Afza, 2009). Bagchi&Khamrui (2012) found positive association between the working capital and profitability of organization.

Deloof (2003) and Juan García-Teruel and Martinez-Solano (2007) opined that profitability of an organization, either estimated by return on equity (ROE) or return on asset (ROA), could be enhanced by the efficient management of working capital and optimized capital structure. The aforementioned researches are conducted in Western countries and the results may not be applicable to the banking sector and organizations of Pakistan. Therefore, the present study is conducted to investigate the impact of working capital and financial structure on profitability of Islamic and conventional banks in Pakistan. The study used number of internal and external factors to check their potential impact on Islamic and conventional banks' profitability which allows bank's management and regulatory bodies to steer these factors in their favor.

The paper is composed of five sections. Section 1 provides the significance and objective behind conducting the study. Section 2 provides a background of the existing research studies, relating bank profitability to its determinants that have been stated to formulate the current research hypothesis. Section 3 describes research methodology; data, variables and research method of the study. Section 4 presents findings of the study. Conclusion is offered in the final section.

2. Literature Review

Working capital and financial structure are the central components of corporate finance as they are significantly important for the business development and imperative to financial wellbeing of small as well as large organizations (Nyamao, Patrick, Martin, Odondo, &Simeyo, 2012). Moreover, working capital management lies in efficient assets and current liabilities treatment so that it maintains strategic detachment from undue interests to assure the returns (Mehmet &Eda, 2009). Earlier studies suggested that working capital management enhances the profitability of the firms (Deloof, 2003; Mathuva, 2009; Bagchi&Khamrui, 2012). In contrast, many studies found negative relationship between the profitability and working capital management (Juan García-Teruel& Martinez-Solano, 2007; Raheman& Nasr, 2007; Raza, Bashir, Latif, Shah & Ahmed, 2015).

Now a days, working capital management and financial structure have been considered as the focal issues in the financial administration by the official/chiefs (Haider et al., 2011; Lamberson, 1995). Harris (2005) observed that working capital management and financial structure is a basic way of guaranteeing firm capacity in short term to subsidize the disparity between a product and customer. Filbeck and Krueger (2005) scrutinized that keeping up an ideal parity among all working capital segments is the significant goal of working capital administration. The success of an entity vigorously depends on the financial administration ability to proficiently deal with working capital and financial structure.

Bashir (2003) investigated the determinants of profitability in 14 Islamic banks of 8 nations (UAE, Egypt, Kuwait, Jordan, Bahrain, Sudan, Qatar and Turkey) for the period 1993-1998 via ROA and ROE. The OLS regression reported that high capital-to-asset and loan-to-asset ratios lead to higher profitability. The regression results also found that taxes affect the bank profitability negatively. Hadi (2004) examined the impact of accounting ratios on the profitability of the firms traded on the Kuwait exchange market. The study chooses the banking sector because of its large market capitalization in the Kuwaiti economy. Eight banks were selected as a sample for the period 1997 to 1999 with total of 24 observations. ROA, ROE and earnings assets ratio (EAR) were used as a proxy for measuring profitability. The study findings revealed that accounting information has been very useful for the analysts and shareholders as all financial variables (size, total deposits, working capital and leverage) have positive association to the profitability.

Al-Tamimi (2005) studied the determinants of UAE banks'profitability from 1987-2002 and found that banks'portfolio and size have statistically significant impact on performance and profitability (ROA and ROE). Filbeck and Krueger (2005) emphasized that the success of any business depends deeply on its ability to effectively and efficiently managing the working capital, say account receivables, inventory and payables. Singh and Sharma (2006) measured influence of corporate financial fundamental factors on profitability of the Bombay Stock Exchange listed companies for financial year 2001 to 2005. Multiple regression analysis utilized to confirm the relationship and found that all variables, that is, earnings (EPS), dividend coverage (DCR), financial structure (D/E ratio), total deposits (TD), book value ratio (PBS) and firm size (TA) have positive and significant association with the profitability.

Athanasoglou, Delis and Staikouras (2006) measured the selected determinants effect on banks profitability in the South Eastern European (SEE) region from 1998 to 2002 period. The study found positive relationship of concentration and inflation on the bank profitability, whereas banks' profits are not significantly affected by real GDP fluctuations. Atrill (2006) found that numerous small scale entities are dire at dealing with working capital requirements. Berger and Bouwman (2013) found that mismanagement in working capital often caused by the owner's inability to manage it efficiently, considering it as one of the greatest challenge that small and medium enterprises face.

Faridl (2007) investigated the relationship of financial structure and total size to profitability partially as well as simultaneously from 2005 to 2007. The findings show that;(a) simultaneously, all independent variables have significant and positive association to the profitability, (b) partially, only financial structure has the direct relationship with the profitability measure. Wum, Hsiu-Ling, Chen, Chien-Hsun, Shiu, Fang-Ying (2007) investigated the impact of bank's age, bank's size, financial

change, the level of monetization, non-interest ratio, extent of capitalization level and GDP per capita on the profitability of 14 Chinese banks from 1996-2004. The results showed that higher levels of financial change will result into better ROA for banks. The results exhibited a negative impact of per capita GDP and a longer bank existence on the ROA. A study by García-Teruel and Martinez-Solano (2007) underlined that organizations can generate returns by decreasing their number of days of inventory receivable and by achieving the optimal capital structure accordingly, affirmed to the finding of Deloof (2003).

Sufian&Habibullah (2009) in their study focused on the internal and external factors influencing the profitability of banks in Thailand from 1999 to 2005. ROA and ROE were used as dependent variables. The study concluded that size, economic growth, and capitalization have positive impact on profitability whereas non-interest income, GDP, credit risk and overhead costs have negative relationship with profitability of banks. Mathuva (2009) also found negative relationship between profitability and average collection accounts, and additionally discovered negative net profit and working capital in Nairobi stock exchange using fixed and pooled OLS estimation techniques. This is similar to the earlier findings of Raheman and Nasr (2007), who also found negative significant relationship of firm's profitability and working capital in Pakistan.

Gill, Biger, and Mathur (2010) determined working capital relationship with the profitability of firms in New York stock exchange, USA. Their study discovered positive significant association between the profitability and working capital. However, Karaduman, Akbas, Ozsozgun, and Durer (2010) in Istanbul and Ding, Guariglia, and Knight (2013) in Vietnam found highly negative significant relationship of working capital and profitability. Michalski (2012) examined that an increase in receivables accounts level of an organization also increments the net working capital and the associated expenses of holding and overseeing receivables, thus leading to a diminishing organization profit and net revenue.

Ostadi&Monsef (2014) focused on the factors influencing the profitability of business banks in Iran. Dependent variable was profitability (ROE, ROA), and bank deposits, bank size, bank capital, liquidity concerns, and keeping money prerequisites were independent variables. Results showed that the impact of bank size and bank concentration on profitability were statistically significant. Ijaz, Akmal&Gillani (2015) investigated the influence of bank's internal factors on the profitability of Islamic banks in Pakistan during 2006 to 2013. ROA and ROE were used as a proxy for dependent variable (profitability). By using panel analysis technique, the estimated results showed that leverage ratio, operating efficiency, asset management, and bank size had positive and significant relationship to the profitability of Islamic banks.

To abridge, a review of the former writing on the relationship between working capital management, financial structure and profitability recommends that there are strong linkages among the profitability of banks and its internal and external factors as identified by several research studies. However, results varied significantly due to the environmental changes and data included in the analysis.

3. Hypothesis

H1: There is a negative relationship between working capital and profitability of Islamic and conventional banks.

H2: There is a direct significant relationship between financial structure and profitability of Islamic and conventional banks.

4. Methodology and Data Collection

The population of this study is Islamic and conventional banks of Pakistan. The sample is a balanced panel dataset of 5 Islamic banks covering a time period 2006 to 2014 and 15 conventional banks covering a time period 2008 to 2014, consisting 45 observations for Islamic banks and 105 observations for conventional banks respectively. Some of the conventional banks are excluded from the sample due to missing relevant information. A total of 7 internal variables and 2 external variables are used for the research study on annual basis. An advantage of using panel data is that more observations on the explanatory variables are available (Hsiao, 2007). This helps in overcoming the inherent multicollinearity which probably exists among the independent variables. The data on internal variables is collected from annual reports of selected banks, whereas data on external variables is collected from the World Bank (www.worldbank.org/).

ROA and ROE are the largely pertained ratios used to measure financial performance or profitability (Naceur&Goaied, 2001; Sufian&Habibullah, 2009). The profitability of banks is measured from three dimensions, that is; ROA, NI and ROE. Internal explanatory variables include working capital, financial structure, bank size and deposits, whereas external explanatory variables are GDP and CPI taken for the study. The study analyzes the data through Generalize Least Square (GLS) with the help of STATA software to test the relationship between dependent and independent variables. Sufian&Habibullah (2009) argued that to avoid heteroskedasticity and biasness in the data, one must use control variables and GLS model to resolve such problems in the data set.

Table 1
Definitions and Notations of the Variables

Variable	Symbol	Measure	Reference
Return on Assets	ROA	Operating Income / Total Assets	Bashir, 2003; Wum et al. 2007; Sufian&Habibullah, 2009; Ostadi&Monsef, 2014; Ijaz et al., 2015
Return on Equity	ROE	Operating Income / Total Equity	Deloof, 2003; Bashir, 2003; Hadi, 2004; Al-Tamimi, 2005; Olson &Zoubi, 2011
Net Income	NI	Total Income – (Cost of Goods Sold + Expenses - Taxes)	Uddin, 2009; Sufiyan&Habibullah, 2009
Working Capital	WC	Current Assets – Current Liabilities	Raheman& Nasr, 2007; Danuletiu, 2010; Mohamad&Saad, 2010; Valahzaghard &Taherinejhad, 2012; Enqvist, Graham, & Nikkinen, 2014; Farhadi et al., 2015
Financial Structure	D/E	Proportionof fundsprovidedbycorporate creditors	Harris, 2005; Singh and Sharma, 2006; Raheman& Nasr, 2007
Banks Size	TA	Log of total assets	Goddard, Molyneux & Wilson, 2004; Wum et al., 2007; Flamini, Schumacher & McDonald, 2009
Total Deposits	TD	Totalamount received by the bank in form of current/saving accounts	Ostadi&Monsef, 2014, Ijaz et al., 2015
Gross Domestic Product	GDP	Annual GPD	Wum et al., 2007; Kosmidou&Zopunidis, 2008; Mehmet
Consumer Price	CPI	Annual CPI	Deloof, 2003; Gul, Irshad &

The research model of the study is as follows

$$\sum_{3}^{K} Perf_{it} = \beta_0 + \beta_1(WC)_{it} + \beta_2(\frac{D}{E})_{it} + \sum_{3}^{L} X_{it} + \varepsilon_i + \mu_t$$

Where

i denotes banks,

t denotes number of years,

Prof represents profitability variables,

WC represent working capital,

D/E represents the debt to equity ratio,

X represents the set of control variables (banks size, total deposits, GDP, CPI),

ε and μ represents the error term

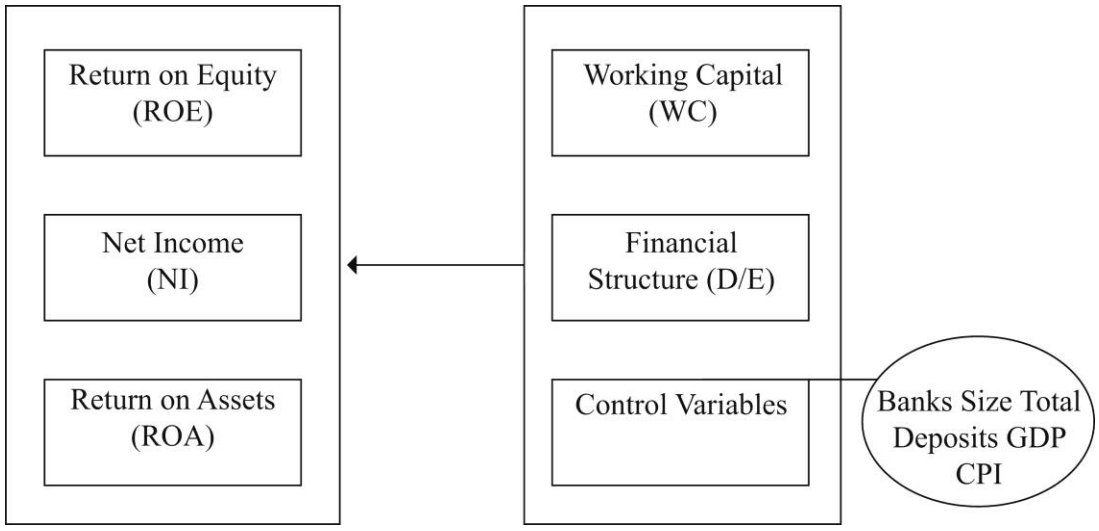

*Figure 1.*Research Framework

5. Results and Discussion

5.1. Descriptive Statistics

Table 2 explains the descriptive statistics of all the dependent and independent variables. The value of mean depicts the average of the given variables taken for the study. Standard error is the average dispersion inherent in large number of samples. The volatility in the data set is measured through the standard deviation. A small

value of standard deviation means that the data points lie close to the mean value. To overcome the issue of normality in banks size, GDP and CPI, the study takes logarithm of banks size (total assets), GDP and CPI after applying the Test of Normality. Last two columns show the minimum and maximum values of the variables taken for study. The significance level used for this study is 0.05 with confidence level of 95%.

Table 2
Descriptive Statistics

	Islamic Banks				**Conventional Banks**			
Variables	**Mean**	**Std. Dev**	**Min**	**Max**	**Mean**	**Std. Dev**	**Min**	**Max**
NI	0.36	1.45	-2.19	4.56	15.24	1.72	11.4	19.75
ROA	0.43	1.27	-1.84	7.63	1.83	4.5	-25.2	9.12
ROE	4.39	8.34	-9.93	28.18	11.72	105.99	-28.1	40.53
WC	15.58	1.23	12.2	18.46	16.33	1.8	12.21	20.7
D/E	7.5	5.16	0.09	17.77	11.2	12.25	0.04	66.78
TA	17.52	1.13	14.8	19.89	18.96	1.59	15.52	23.12
TD	0.57	0.25	0	1.29	0.96	1.09	0	6.24
Log GDP	26.54	1.73	25.54	29.78	25.62	0.06	25.54	25.74
Log CPI	4.56	0.29	4.08	4.95	4.68	0.2	4.34	4.95

5.2. Multi-Collinearity Analysis

Table 3 shows the multi-collinearity test of all the variables used in the study. The test indicates the absence of multi-collinearity problem among all the factors. This means that all the factors taken in to study have no interdependency on each other and are free from the issue of co-relation of explanatory variables. The results show that the data can be utilized for the regression because the problems do not exist among its variables. The rule of thumb of variance inflation factor (VIF) test states that VIF value should be less than 10 (Gujarati, 2003). As all the values of VIF are below 10 which mean we reject the null hypothesis and conclude that there is no multi-collinearity among explanatory variables.

Table 3
Variance Inflation Factor Test

Variable	Islamic Banks		Conventional Banks	
	Tolerance	VIF	Tolerance	VIF
NI	0.98	1.02	1.31	0.76
ROA	0.36	2.76	0.36	2.76
ROE	0.4	2.48	0.53	1.86
WC	0.67	1.48	0.63	1.56
D/E	0.57	1.73	1.15	0.86
TA	0.76	1.31	0.81	1.23
TD	0.81	1.23	0.7	1.41
Log GDP	0.8	1.25	0.73	1.35
Log CPI	1.32	0.75	1.24	0.8

5.3. Panel Data Analysis

Panel data provides more accurate inference of model parameters (Kiviet, 1995), controls impact of omitted variables (Heckman, Killingsworth and MaCurdy, 1981), generates more accurate predictions (Hsiao, 2003), and analyze non-stationary time series (Binder, Hsiao & Pesaran, 2005). After testing the co-relation test among variables, generalized least square (GLS) regression has been applied to check the influence of independent variables on dependent variable. The advantage of pooling is that more reliable estimates of the parameters in the model can be obtained. Table 4 and Table 5 represent the GLS regression results for all the three models for Islamic and conventional banks. The number of observations in each model is 45. The coefficient for each variable represents the positive or negative impact on the respective dependent variables, if variable is increased by 1 percent (or unit). Similarly, p-value indicates whether the independent variables have significant impact on the profitability (NI, ROA and ROE) at 1%, 5% and 10% significance level respectively.

5.4. Regression for Islamic Banks

Table 4 shows that there is a negative relationship of working capital, total deposits, GDP and CPI with the NI. However, NI found to be positively associated with financial structure (D/E ratio) and bank size. The findings also show that only bank size (Ali, Akhtar& Ahmed, 2011), total deposits (Chirwa, 2003) and CPI found to be statistically significant to NI. Moreover, working capital has negative but significant relationship with the ROA and ROE, similar to the earlier findings of Deloof (2003) and Raheman& Nasr (2007).

Table 4
GLS Regression for Islamic Banks

Variable	NI	ROA	ROE
WC	-0.01	-0.04***	-0.03***
D/E	0.22	0.00***	0.06***
TA	4.81***	0.12***	0.02***
TD	-6.44***	-0.08***	-0.25***
Log GDP	-0.03	-0.00**	-0.01**
Log CPI	-12.36***	-0.47***	-0.22***
Constant	-8.67	0.70***	0.25***

* 0.05 significance level ** 0.01 significance level *** 0.001 significance level

Similarly, financial structure and bank size have statistically positive relationship with the ROA and ROE. These outcomes are similar to the work of Bae, Kang, & Wang (2011), Ruan, Tian, & Ma (2011) and Saeedi&Mahmoodi (2011). Thus, it indicates that larger the size of banks, higher the investment of the bank, which ultimately increases the return (profit) of the banks. Total deposits are negatively significant with all profitability measures. It illustrates that when the deposits increase, the profitability of the Islamic banks will decrease. In addition, GDP and CPI also show negatively significant (Sufian&Habibullah, 2009) relationship with the profitability of Islamic banks.

5.6. Regression for Conventional Banks

Table 5 depicts the relationship between working capital, financial structure and other control (internal/external) variables with the profitability measures of conventional banks. The findings show that the variable of working capital has positive relationship with NI but it is not statistically significant. Moreover, working capital was found to be negative and statistically significant with the profitability indicators of ROA and ROE, similar with the findings of Falope&Ajilore (2009)**.** Financial structure (D/E) has negative significant relationship with all three measures of profitability, supported by the earlier research of Cheng (2009) but contradicted to the findings of Wum, Hsiu-Ling, Chen, Chien-Hsun, Shiu, Fang-Ying (2007)**.** This indicates that an increase in bank's financial structure, results in decrease of profitability in conventional banks. It means companies with higher level of debt, are usually perceived to be doing risky investments, possibly affecting wealth transfer from debt holders to shareholders.

Similarly, the study found positive relationship of bank size (total assets) with all profitability measures. In addition, total deposits and CPI show positive relation with the three models; however they are only statistically significant with NI. GDP impact statistically significantly and negatively on NI, but found to be positive

insignificant association with ROA and ROE. This is also supported by Athanasoglou, Delis and Staikouras (2006).

Table 5
GLS Regression for Conventional Banks

Variable	NI	ROA	ROE
WC	0	-0.16***	-0.01
D/E	-0.01**	-0.04***	-0.00*
TA	1.19***	0.25*	0.03***
TD	0.69***	0.34	0
Log GDP	-1.65**	1.11	0.05
Log CPI	0.25	1.27	0.05
Constant	32.63**	-23.29	0.97

* 0.05 significance level ** 0.01 significance level *** 0.001 significance level

6. Conclusion

Financial officials of corporations regularly distinguish that working capital management and financial structure is very important for the banking profitability. This study was an attempt to understand that to what extent working capital and capital structure affect banking profitability of Islamic and Conventional banks in Pakistan. The study found that working capital has negative and statistically significant relationship with the profitability in both Islamic and conventional banks, in line with the findings of Falope&Ajilore (2009) and Raheman& Nasr (2007). On the contrary, debt to equity ratio is negatively related with profitability measures of conventional banks, supports the argument of Mesquita& Lara (2003), who indicate that long-term debts are generally more costly and henceforth bring about low profitability. However, debt equity ratio impacts positively and significantly on profitability of Islamic banks, is supported by earlier finding of Grossman & Hart (1986), who contend that larger amounts of debt in the association's capital structure will be connected with higher levels of profitability. These outcomes have potential approach suggestions for the regulators of Islamic and conventional banks and other financial organizations that might need to add an indigenous financial framework. Further research can be extended to explore the above findings and to include some other factors such as doubtful loans, reserves ratios, capital adequacy ratio, inflation, exchange rate, etc.

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