

The Impacts of Capital Structure on Bank Performance:

A Case Study of Iraqi Private Banks

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ABSTRACT

Purpose: This study studies the effect of capital structure on the performance of some Iraqi private banks. Six banks based in Iraq namely: Babylon Bank, Investment Bank, Credit Bank, Commercial Bank, Sharq Al-Awsat Bank, and Baghdad Bank were selected for the present study over the period 2005 to 2015. **Methodology:** Annual reports of these banks were studied and relevant ratios were calculated. The variables that were identified as independent for capital structure were total debt to capital, bank size and asset growth, while return on assets and return on equity were considered to be dependent variables for bank performance. The panel Least Square model has been used to examine the impact of capital structure on bank performance. **Findings:** Outcomes indicate that none of the independent variables has a significant impact on return on assets (ROA), while total debt to capital (TDC) has a positive impact on return on equity (ROE). **Recommendation:** based on this result, Iraqi banks should keep sufficient amount of capital to avoid any financial risks and increase the probability of survival.

KEY WORDS: Asset Growth, Bank, Bank Performance, Capital Structure, Private Banks

1. INTRODUCTION

Recently, there has been an increase in the number of banks in Iraq and Kurdistan region particularly and other countries in general. According to the department of research in central bank of Iraq in 2005, there are 57 banks working in Iraq. The system of the banking structure in Iraq is divided into four groups, such as public banks,

private banks, Islamic banks, and foreign banks. Banks play a vital role in economic development in different countries and they help individuals to convert their short-term savings into long term investments. However, it is undeniable fact that banks in Iraq and Kurdistan region still play an important role in economic growth due to a number of factors, such as political, cultural, and environmental factors. It should be noted that a crucial area in any bank is financing, because banks cannot

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survive without capital and these capitals come from different sources, such as debts and equity.

Muhammad et al. (2014), Pinto et al. (2017), Mouna et al. (2017), Musah (2017), Mehar (2018) and Rahman et al. (2019) believe that an important decision in each financial institution is capital structure. For instance, Tanni (2013) believes that a major topic in finance nowadays is capital structure. Maduane and Tsarai (2016) consider capital structure a crucial element of profitability in South Africa banks. Furthermore, Muzaffar et al. (2013) explain that debt and equity are capital structure. Similarly, Zaroki and Rouhi (2015) believe that capital structure consists of debt and shareholder's equity. Market share and the probability for survival of banks will be increased by capital, and performance of medium and large banks will increase as well during banking crisis (Berger and Bouwman, 2013). In this regard, Pinto et al. (2017) reveal that financial performance might be affected by capital structure in the research on twenty-one banks in India over a period of five years. Interestingly, Pandey (2010 cited in Adesina et al. (2015) consider that the stock holder's return and risk can be affected by the structure of capital.

2. THE PURPOSE OF THE STUDY

The present study aims to find the influence of capital structure on bank performance of the six Iraqi private banks, namely Bank of Baghdad, Investment Bank of Iraq, Babylon Bank, Credit Bank of Iraq, Commercial Bank of Iraq, and Sharq Al-Awsat Bank over the period from 2005 to 2015.

3. LITERATURE REVIEW

Many studies have been conducted to investigate the influence of capital structure on bank performance in various countries. Some authors found a positive link between capital structure and bank performance, while others found negative relationship. Oyedokun et al. (2018) believe that there is a significant and non-significant impact of capital structure on variables of performance and they suggest that firms must use the strategy of balanced capital structure to increase the value of the firms. Furthermore, Pinto and Quadras (2016), Hashim and Hassan (2017), Pinto et al. (2017) and Das and Swain (2018) conclude that capital structure has an impact on bank performance. For example, Tanni (2013) conducted a study on twelve Jordanian commercial banks to find effects of capital structure on bank performance and he found out that there is a positive impact of bank performance on total debt. Moreover, Zafer et al. (2016) conducted a study on 25 Pakistani banks and stated that

determinants of capital structure are positively linked with bank performance. Similarly, Zaroki and Rouhi (2015) indicated that capital structure has a positive impact on earnings per share and has a negative consequence on ROA. However, they believed that it has no important influence on ROE.

A number of authors use large samples in their studies while others use small ones. For instance, Meles et al. (2016) used a large sample of US commercial banks and found that intellectual capital positively affects financial performance. Likewise, Voung et al. (2017) examined the impact of capital structure on firms financial performance

of 739 large UK companies listed in London Stock Exchange over the period 2006 to 2015. Interestingly, they found that financial performance is negatively linked with long term liabilities. However, short term debts are not linked with liabilities. Similarly, Jaworski and Czerwonka (2018) found a positive link between long term debt and profitability. Furthermore, Tanni (2013) has found an affirmative association between capital structure and bank performance in the research conducted on 12 commercial banks listed on Amman stock exchange. Moreover, Ordinary Least Square (OLS) was used by Adesina et al. (2015) for ten Nigerian listed banks in NSE over a period of eight years and showed a positive relationship between them. In the same way, Salawu and Awolowo (2009) investigated the impact of listed firms in Nigeria for the period of 1990 to 2004 and found a positive correlation between them. Anarfo et al. (2015) and Nikoo (2015) believed that capital structure is positively related to profitability for the listed banks in GSE from the period of 2007 to 2013. Similarly, Goyal (2013) reached the same relationship between profitability and short-term debt. Moreover, Muzaffar et al. (2013) found a positive link between elements of capital structure and bank performance.

On the other hand, a significant number of authors found an adverse impact between capital structure and bank performance. Dehghanzadeh and Zeraatgari (2013 cited in Zaroki and Rouhi, 2015) in study conducted on 193 corporations listed in (TSE) for a period of six years and found that the ratio of ROA and capital structure have a significantly negative relationship. More interestingly, Anarfo (2015) used unit root test on a sample of thirty-seven Sub-Saharan countries over a period of six years in order to examine the relationship between capital structure and bank performance and found the same relationship. It is interesting to note that, Muhammad et al. (2014) believed that debt to asset is negatively affecting on corporate performance, while debt to equity is opposite to firm performance. It could be noted that in any bank there is short and long periods of debt. Moreover, short term debt might not be good for a

bank because of their short periods. Musah (2017) believes that commercial banks in Ghana should depend on other financial sources and not just depend on short deposits because profitability could be increased by focusing on long term debts in a sample of twenty three banks over six years.

Mouna et al. (2017) examined the influence of capital structure on companies' performance in 53 Moroccan firms over the period 2014 to 2016. The study noticed that debt ratio has negative effect on ROA, debt equity ratio has a negative impact on ROE, and size is positively linked with ROE. However, in a recent study conducted on 10 firms listed in Dhaka stock exchange from the period of 2013 to 2017 by Rahman et al. (2019) who found that debt ratio and equity ratio have positive impact on ROA, while they found that debt to equity has negative impact on ROA.

It can be clearly seen that in various countries authors obtained roughly the same results and found the same association between capital structure and bank performance. A graphic example is provided by Akeem et al. (2014), in an article about effects of capital structure on firm's performance, found a negative link between them in Nigerian manufacturing companies for the period of 2003 to 2012. Similarly, Vatavu (2015) analyzed 196 Romanian companies over a period of eight years and deduced that firms' performance might be higher when they avoid debt and focus on equity. Interestingly, Gohar et al. (2016) have found a negative relationship between them for banks listed on Karachi stock exchange during five years from 2009 to 2013. Finally, Abbadi and Abu-Rub (2012) believed that leverage has a negative influence on bank profits in their study. Having reviewed the literature about this topic, it is noted that there are still a few studies conducted on the impact of capital structure and bank performance.

4. METHODOLOGY

The population of this study is the banking sector of Iraq. The structure of the banking system in Iraq is divided into four main groups including: public banks, private banks, Islamic banks and foreign banks. The sample of the study is six private banks which are selected according to the availability of their annual reports. Secondary data was collected from annual reports of these banks for the current study. Their annual reports are available on the Iraqi stock exchange site. Moreover, this study is based on time series data for a period of 11 years from 2005 to 2015. E-views 8 statistical software was used for data analysis. The data was analyzed through descriptive statistics, correlation and regression. Panel least square (PLS) estimation of data method is

used to obtain main results of the capital structure impact on bank performance. Moreover, Hausman test is utilized in order to assess whether or not the random effect specification is consistent and unbiased. Bank performance has been selected as a dependent variable through ROA and ROE, while capital structure was used as independent variable through BS, AG and TDC. The models for this study and variables have been used as follows:

4.1 Dependent Variable

$$\text{Return on Assets} = \text{Net income} \div \text{total assets}$$

$$\text{Return on Equity} = \text{Net income} \div \text{total equity or capital}$$

4.2 In Dependent Variables

$$\text{Total debt to capital (TDC)} = \text{total debt} \div \text{total capital}$$

$$\text{Bank size (BS)} = \text{Total assets}$$

$$\text{Asset growth (AG)} = \text{current assets} - \text{last year assets} \div \text{last year assets}$$

4.3 Models

Authors such as, Goyal (2013), Anafo, et al. (2015), Zafar et al. (2016) and Zaroki and Rouhi (2016) have used the same model.

$$ROA = \alpha + \beta_1 BS + \beta_2 AG + \beta_3 TDC + U_i$$

$$ROE = \alpha + \beta_1 BS + \beta_2 AG + \beta_3 TDC + U_i$$

Where:

$$ROA = \text{Return on Assets}$$

$$ROE = \text{Return on Equity}$$

$$TDC = \text{Total debt to capital}$$

$$BS = \text{Bank size}$$

$$AG = \text{Asset growth}$$

$$\alpha: \text{the constant}, \beta: \text{the regression coefficient}$$

5. FINDINGS AND ANALYSIS

Bank performance is represented by two accounting ratios, namely return on equity (ROE) and return on assets (ROA). The descriptive statistics illustrates that the average ROE in the sample is 22.5% with a standard deviation of 45.39% and the average ROA is 4.77% with a standard deviation of 8.83% (Table 1).

TABLE 1
Descriptive Statistics

	ROE	ROA	TDC	AG	BS
Mean	0.2253	0.0477	4.2304	0.8026	287,000,000,000
Median	0.1153	0.0284	2.2317	0.1292	209,000,000,000
Maximum	2.9559	0.6185	35.1587	10.9417	2,080,000,000,000
Minimum	0.0121	0.0021	0.0641	-0.9988	55,173,435

Std.Dev.	0.4539	0.0883	5.9148	2.5166	390,000,000,000
Skewness	4.4858	5.0630	3.4190	3.0042	2.8643
Kurtosis	24.4368	30.5215	15.8280	10.8620	13.2485
Jarque-Bera	1,485	2,365	581	269	379
Probability	0.0000	0.0000	0.0000	0.0000	0.0000
Observations	66	66	66	66	66

There are 6 banks and 11 years for each bank. Hence, there are 66 observations for all variables. The variables are not normally distributed according to the indicators of skewness, kurtosis and the Jarque-Bera test. However, this is normal for financial variables as normality can be expected to be observed only in very large samples.

Preliminary analysis of the relationship between capital structure and profitability measures is provided in Table 2. The correlations matrix also provides evidence of potential multicollinearity issues among the independent variables.

TABLE 2
Correlation Table

	ROE	ROA	TDC	AG	BS
ROE	1.00	0.71	0.47	0.19	0.03
ROA	0.71	1.00	-0.01	-0.15	-0.12
TDC	0.47	-0.01	1.00	0.34	0.10
AG	0.19	-0.15	0.34	1.00	0.57
BS	0.03	-0.12	0.10	0.57	1.00

As it is evident in the above table, the strongest correlation is observed between ROE and ROA, the two profitability measures, but they are used in separate regressions. The independent variables are not strongly correlated; hence, there is no significant problem of multicollinearity and there is no need to omit any of the variables.

A panel regression is used to estimate the effect of the capital structure on bank performance. They can be specified with fixed or random effects and both fixed and random effects account for unobservable characteristics of banks. According to Pei et al. (2017) and Arteaga-Molina, and Rodriguez-Poo (2017) the fixed effect specification accounts for unobservable factors by introducing dummy variables for each bank, but this increases the number of parameters that have to be estimated and also consumes degrees of freedom. The random effect specification proposes a different and more efficient approach by introducing a second constant term that will take into account variability of unobservable factors across banks. Even though the second method would produce more effective coefficients, the random effect specification does not always provide consistent coefficients (Cizek and Lei, 2017). For this reason, the Hausman test is used in order to assess whether or not the

random effect specification is unbiased and consistent (Hahn et al., 2011 and Chen et al., 2018). The null hypothesis of the Hausman test is that the random effect regression should be preferred. Table 3 provides the output from the ROE regressions with fixed and random effects.

TABLE 3
Panel Regression Analysis: ROE as the Dependent Variable

	Fixed Effects	Random Effects
C	0.0751 (0.0762)	0.0837 (0.0857)
TDC	0.0322*** (0.0093)	0.0336*** (0.0092)
AG	0.0117 (0.0290)	0.0120 (0.0270)
BS	0.0000 (0.0000)	0.0000 (0.0000)
R-squared	0.304	0.2191
F-statistic	3.1118***	5.7983***
Durbin Watson test	2.3318	2.1136
Hausman test	1.9697	
p-value (Hausman)	0.5787	

* significant at 10%

** significant at 5%

*** significant at 1%

Standard Errors (SE) are in brackets

Both, the fixed and random effect regressions, provide more or less similar outcomes but the Hausman test selects the random effect specification. The random effect regression has an R-squared of 0.219, which means that the chosen independent variables explain about 21.9% of the variations in ROE. The F-statistic is significant at 1%, which means that the chosen model is better than the intercept only model. Total debt to capital (TDC) is found to produce a statistically significant positive effect on ROE, whereas other independent variables are not found to be statistically significant. The Durbin-Watson statistic shows that there is no strong serial correlation in the residuals. Table 4 provides the results of the regressions with ROA as the dependent variable:

TABLE 4
Panel Regression Analysis: ROA as the Dependent Variable

	Fixed Effects	Random Effects
C	0.0445** (0.0168)	0.0508*** (0.0174)
TDC	0.0004 (0.0020)	0.0006 (0.0020)

AG	-0.0081 (0.0064)	-0.0052 (0.0058)
BS	0.0000 (0.0000)	0.0000 (0.0000)
R-squared	0.1076	0.0235
F-statistic	0.859	0.4971
Durbin Watson test	2.1488	2.0287
Hausman test	2.065	
p-value (Hausman)	0.5591	

* significant at 10%

** significant at 5%

*** significant at 1%

Standard Errors (SE) are in brackets

The random effect specification again was found to be superior according to the Hausman test. However, the ROA regression with random effects has a rather low R-squared, which shows that only 2.35% of the variations in ROA can be explained by the chosen independent variables. Moreover, the ROA regressions show that none of the independent variables has a statistically significant impact on ROA.

6. CONCLUSION

To sum up, this research has investigated the impact of capital structure on the bank performance of 6 Iraqi private banks over the period from 2005 to 2015. It is an undeniable fact that decisions related to capital structure are important factors for successful banks in Iraq. However, little is known about the Iraqi banking system. An exciting and valuable result of this research is that, TDC produces a statistically significant positive impact on ROE, while other independent variables were not. Surprisingly, the result of this study is not in line with the results of Zaroki and Rouhi (2015) who believes that capital structure has no influence on ROE, while positive impact was found between TDC and ROE. Moreover, this study also concluded that independent variables such as total debt to capital, bank size, and asset growth have no impact on ROA and this result is not in line with Salawu and Awolowo (2009), Goyal (2013), Muzaffer et al. (2013), Anarfo et al. (2015), Nikoo (2015), and Dehghanzadeh and Zeraatgari (2013 cited in Zaroki and Rouhi, 2015). Depending on the above findings, any increase in the total debt to capital will increase ROE for the banks. Therefore, Iraqi banks should favor more security and confidence in order to attract more clients or more savers for gaining more proceeds and be safe at the same time. It might be a good idea for Iraqi banks to keep sufficient amount of capital to avoid any financial risks and to increase the probability of survival.

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