

EVALUATING BANKS FINANCIAL PERFORMANCE USING FINANCIAL RATIOS: A CASE STUDY OF KUWAIT LOCAL COMMERCIAL BANKS

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Abstract:

This study investigates the effect of Leverage, Total deposit to total assets, Total loans to total assets, Retained earnings to total assets, and Tangible book value per share ratios on banks' financial performance for Return on Assets (ROA) as the dependent variable. The data were obtained from the financial statement (Income statement and Balance sheet) of the selected banks. The results were found by analyzing the financial ratios of five commercial banks in Al-Kuwait throughout five years (2013–2017). We used analytical methods which led us to the presented results. MANOVA and ANOVA analysis were used to show the difference between banks in their financial situation and performance, and then the panel regression model used to study relationships among variables. The Hausman test was applied to compare fixed and random effect models which were shown that the random effect model gives the better result. Our findings show that the independent variables "Total deposit" to "total assets" and "Retained earnings" to "total assets" have a strong significant impact on our dependent variable ROA. "Leverage" and "Total loans" to "total assets" have a less significant effect on the banks' financial performance (ROA) while Tangible book value per share does not affect the ROA.

Keywords: Bank financial performance, ROA, Financial ratios, MANOVA-ANOVA analysis, Panel regression, Hausman test.

JEL classification: G21, G24, G32.

1. Introduction

Profit is the primary goal of all commercial banks, and all their activities and strategies are designed to realise this objective. This study measures the profitability of banks using Return on Assets ratio. The determinants of banks' profitability can divide into two main factors such as internal and external factors (Al-Tamimi, 2010). Internal factors are affected by the banks' management policies and decisions, while external factors are the macroeconomic indicators, and they reflect the economic environment where banks work such as GDP, inflation rate, etc. (Mosko and Bozdo, 2016). Among these different internal factors, we chose five ratios: Leverage, Total deposit to total assets, Total loans to total assets, Retained earnings to total assets, and Tangible book value per share. The performance analysis was performed by using financial ratios to examine the relationships among ratios used and ROA to determine the differences in performances of commercial banks in Al-Kuwait. Many other researchers chose ROA as determinants of profitability of commercial banks such as Elsiefy (2013) employed ROA as a proxy measure of bank financial performance in Qatar. As well, Nimer, Warrd, and Omari (2013) applied the same method in studying the impact of liquidity on Jordanian Banks profitability through return on Assets.

So mainly, the study intends to identify the impact of five financial factors that affect the performance of five commercial banks in Al-Kuwait from 2013 to 2017 and to present a brief overview of the banking system in Kuwait.

The objectives of this study are

- to contribute to analysing five financial factors that have an impact on commercial bank performance in Al-Kuwait to use more efficiently way the bank's resources,
- to classify the commercial banks in Al-Kuwait by their financial characteristics as a guideline for future development and to assess their financial performance, also
- the study provides some indications for bank management, on which are the factors that determine bank performance.

My study is different from the earlier ones in two ways because the data used are recent. Moreover, however, there were a considerable number of empirical studies on bank performance around the world especially commercial banks but very little on bank performance of Al-Kuwait.

This paper has the following structure. Section 2 gives a brief overview of the current situation of Kuwait banking system, and reviews several important empirical studies and develops the research hypotheses considering the variables investigated. Section 3 describes the data and methods used. Section 4 reports and discusses the results obtained. Section 5 gives the conclusion.

1.1 A brief overview of the banking system in Kuwait

In Kuwait, financial institutions play an important and direct role in influencing the economy of the country, and banks there have a solid economic prospect supported by high oil prices, rapid expansion of retail banking, and rising stock exchange market. Furthermore, the Kuwaiti banking system is considered one of the strongest in the MENA (the Middle East and North Africa) region. The majority of Kuwait's domestic banking sector is owned by the institutional, government, and individual (families) shareholders (Al-Saidi and Al-Shammari, 2013). The number of the current banks in Kuwait is 23 (including five commercial banks, 5 Islamic banks, one specialised bank and 12 branches of foreign banks) and they are under the supervision of the Kuwait Central Bank.

However, it is worth noting that banks are essential actors of the stock exchange market and real estate which is very volatile by its nature and risk (Alam et al., 2018). Risk remains a real issue regarding loans and deposits in Kuwait banks sector. If we take the latest annual economic report of the Central Bank of Kuwait for the year 2017, we will see growth rates of performance and profitability of banks during the years 2017 and 2016. The combined balance sheet of all 23 banks amounted to about 63467.8 million dinars at the end of 2017 compared to 60444.5 million at the end of the previous year, thereby achieving growth rate of 5.0% and the value of 3023.4 million dinars during 2017, compared to growth rate of 3.1% and the value of 1830.4 million during 2016. (CBK 2017). Table 1 shows working Kuwait banks and date of establishment.

Table 1: Kuwait banks and date of establishment

| Local Kuwait Banks | | Arab & Foreign Banks |
|--|------------------------------------|--|
| Commercial | Islamic | |
| 1-National Bank of Kuwait (1952) | 7- Ahli United Bank (1971) | 12- Bank of Bahrain and Kuwait (1977) |
| 2- Gulf Bank of Kuwait (1960) | 8-Kuwait International Bank (1973) | 13- HSBC Bank Middle East Limited (2005) |
| 3- Commercial Bank Of Kuwait (1960) | 9- Kuwait Finance House (1977) | 14- BNP Paribas (2005) |
| 4- AlAhli Bank of Kuwait (1967) | 10-BoubyanBank (2004) | 15- National Bank of Abu Dhabi (2006) |
| 5-Industrial Bank of Kuwait,(government bank,1973) | 11-WarbaBank (2010) | 16- Citi Bank (2006) |
| 6- Burgan Bank (1977) | | 17- Qatar National Bank-QNB Kuwait (2007) |
| | | 18- Doha Bank (2008) |
| | | 19- Mashreq Bank (2009) |
| | | 20- Bank Muscat (2010) |
| | | 21- Al-Rajhi Banking & Investment Corporation (Al-Rajhi Bank) (2010) |
| | | 22- Union National Bank (2012) |
| | | 23- Industrial and Commercial Bank of China Limited (2014) |

Source: Authors own computation using data from Central Bank of Kuwait

2. Literature Review

Bank performance is the concept of how to use the bank capacity to make sustainable profitability (Bassegy et al., 2016). There are some indicators for evaluating the financial performance of banks by the financial measures. Accordingly, Khrawish (2011) mentioned that bank financial performance could measure by three different variables. First, the most important profitability ratio is the return on assets (ROA) which shows the ability of bank assets to achieve the profit. The second ratio is the return on equity (ROE), this ratio related to returns to shareholders' equity. The next one is the return on investment (ROI), this approach uses the invested capital to measure bank efficiency.

Reviewing the existing literature, we found that researchers have applied different approaches to measuring banks financial performance. One example is Etebari (2018) metrics which combined financial ratios analysis with benchmarking to measure performance against budget. Others used the net interest margin, returns on equity, invested capital, and many others. However, ROA is the essential ratio frequently used in the literature of measuring bank financial performance. Hassan and Bashir (2003) mentioned that ROA not only shows the profit earned of assets, but it also reflects the management's ability and efficiency to develop banks' investment resources to produce

higher profits. The European Central Bank (ECB, 2010) announced that a good performance measurement structure should cover more aspects of the performance than just profitability indicators.

Financial performance is measured through financial ratios taken from financial statements primarily the balance sheet and income statement. We can calculate different classes of financial ratios including liquidity, activity, leverage and equity ratios. Profitability ratios evaluate the efficiency of how the business resources were used to make a profit (Brigham and Houston, 2005).

In general terms, leverage is the ratio between the financial institution debt and equity. Pandey (2008) defines financial leverage as the existence of debt in a corporation's capital structure. Financial leverage includes the use of debt and preferred shares in addition to the owners' equity (Dare and Sola, 2010).

According to Abubakar (2015), if you look only at the total amount of loans made by a bank, it will not be beneficial, and it will be difficult to determine if a bank is over-leveraged. Managers overcome this problem by using the ratio of assets to capital on the bank's balance sheet, or another word its "leverage ratio". A higher leverage ratio indicates that the bank should use more debt to finance its assets relative to its total amount of borrowed funds. Among all the several financial factors that affect banks performance, the loans and the deposits are the primary factors of determining the bank profitability. Both loans and deposits are equally outstanding in the banking process like two sides of the same coin. Most previous studies found a positive relationship between loans and ROA, Peek and Rosengren (2002) write that Loans represent the primary earning asset at most banks. Amahalu Nestor (2017) also said there is a positive and statistically significant relationship between loan management and financial performance (ROA). While, Wang and Wang (2015) studied the loans influence from many aspects and more comprehensively, he said a high loans-to-assets ratio point to a fact that a bank is issuing more loans and making more income. On the other hand, a low loans-to-assets ratio means that the bank makes less income. However, we cannot deny the fact of a high loans-to-assets ratio puts the bank at high liquidity risk

Naceur and Goiaed (2001) after examining the factors of the Tunisian banks' performances during the period 1980-1995 found empirical evidence indicating that the best performing banks are those who maintained a high level of deposits relative to their assets. So this means increasing the ratio of total deposits to total assets will increase the funds achievable by the bank in different profitable ways such as lending and investments activities.

About loan and deposit ratios, Baharuddin and Azmi (2015) argue that the higher deposit ratio is more preferred than the loan ratio to improve bank profitability, while Naceur (2003) found that bank loans and interest margin have a positive effect on bank profitability.

Retained earnings can be considered as the first line defence to capital diminution and a safeguard against the risky bank business. It allows the bank to remain competitive and profitable. The rate at which retained earnings grow has a direct effect on the bank equity growth and constant growth of bank assets (Onoh, 2002). Nzotta (2004) found a strong relation between bank profitability and earnings; he stated that retained earnings are undistributed profits accumulated over the years that could be used to increase the capital resources of the bank.

Tangible book value per share of a financial institution is what common shareholders are expecting to receive if the institution goes bankrupt and all of its assets are paid at their book value. The intangible assets, such as goodwill, are omitted from this calculation because they do not have monetary value so they cannot be sold during liquidation

(Aswath, 2010). So regarding that, a high tangible book value per share offers shareholders higher protection in the case of bankruptcy.

3. The list of variables and the hypotheses developed

On the base of the review of the literature, five variables have been included for measuring banks financial performance. Table 2 contains a preliminary explanation of variables selected along with hypotheses are derived for each variable.

Table 2: List of variables

| | Variable Name | Proxy | Source |
|------------------------------|-----------------------------------|--------------------------------------|----------------------------------|
| Dependent Variable | Return on assets | Net Income / Total Assets | Income Statement & Balance Sheet |
| Independent Variables | Leverage | Total Debt / Total Equity | Balance Sheet |
| | Total deposit to total assets | Total Deposit / Total Assets | Balance Sheet |
| | Total loans to total assets | Total Loans / Total Assets | Balance Sheet |
| | Retained earnings to total assets | Retained earnings / Total Assets | Balance Sheet |
| | Tangible book value per share | Tangible Assets / Shares Outstanding | Balance Sheet |

Hypotheses:

H₀: There is no significant impact between the internal factors (6 financial ratios) and banks performance.

To analyse the effect of each factor the study uses the following five sub-hypothesis:

- H₁: The Leverage has a statistically significant effect on banks financial performance represented by ROA.
- H₂: The Total deposit to total assets ratio has a statistically significant effect on banks financial performance represented by ROA.
- H₃: The Total loans to total assets ratio has a statistically significant effect on banks financial performance represented by ROA.
- H₄: The Retained earnings to total assets ratio has a statistically significant effect on banks financial performance represented by ROA.
- H₅: The tangible book value per share ratio has a statistically significant effect on banks financial performance represented by ROA.

The (1) equation was developed to carry out this research which investigates the effect on banks financial performance using the Financial leverage, Total deposit to total assets, Total loans to total assets, Retained earnings to total assets, and Tangible book value per share ratios as explanation variables, and the Return on assets (ROA) as result variable.

$$ROA_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 \frac{TD}{TA}_{it} + \beta_3 \frac{TL}{TA}_{it} + \beta_4 \frac{RE}{TA}_{it} + \beta_5 \frac{TBV}{SHARE}_{it} + \varepsilon_i \quad (1)$$

where:

ROA_{it} = Return on Assets (the dependent variable observed for each bank of the 5 (i) at time $t = 2013, \dots, 2017$)

β_0 = Intercept for independent variable of i^{th} bank

$\beta_1 - \beta_5$ = Coefficient for the independent variables of each bank (i), denoting the nature of the relationship with the dependent variable at time $t = 2013, \dots, 2017$)

LEV= The financial leverage

$\frac{TD}{TA}$ = Total deposit to total assets

$\frac{TL}{TA}$ = Total loans to total assets

$\frac{RE}{TA}$ = Retained earnings to total assets

$\frac{TBV}{SHARE}$ = Tangible book value per share

\mathcal{E}_i = Error term

4. Methodology

Evaluating the bank's performance, we need tools that can be used to measure the performance, and the financial ratio analysis is one of the most popular tools, to perform that. Therefore, we used six financial ratios which can be useful indicators to measure the financial position of commercial banks in Al-Kuwait.

To test the multiple response variables simultaneously was used the multivariate analysis of variance (MANOVA). We should use MANOVA when we have one or more categorical independent variables (which are the five different banks) with two or more treatment levels. Moreover, there are more than one continuous response variable (the six financial ratios during five years) that is what makes it "multivariate" to see if there is a difference in banks financial performance related to the six variables ratios calculated. If the MANOVA shows a significant difference (less than 5%) among variables, then we can continue the analysis by ANOVA (French et al., 2008).

In the second part, I analyse the data by Panel Data Model (also known as longitudinal or cross-sectional time-series model) using financial ratios which model examines cross-sectional (group) and/or time-series (time) effects. These effects may be fixed or random. Fixed effects assume that individual group/time have a different intercept in the regression equation, while random effects hypothesise individual group/time have a different disturbance (Croissant and Millo, 2018). This paper explores the use of both of panel techniques (fixed and random) to identify the most important financial ratios that can be considered as indicators of the bank's financial position, which can give the bank's management an early warning about the bank situation.

Hausman-test is a useful tool in panel data analysis, in comparing the estimates of the fixed and random effects models. Choosing the more appropriate model must be based on information about the independent variables, identify the presence of endogeneity in the explanatory variables (Sheytanova, 2014).

4.1 Dataset

The commercial banks included in this study are:

1. National Bank of Kuwait (NB)
2. Gulf Bank (Gulf)
3. Kuwait Commercial Bank (COM.B.K)
4. AL-Ahli Bank of Kuwait (ALAHLI.B.)
5. Burgan Bank (BURG)

The data were obtained from the annual reports (balance sheet and income statement) of banks during five years from 2013 to 2017 from the websites of the respective banks, Central Bank of Kuwait, and Kuwait Stock Exchange (Bursa Kuwait). Financial ratios were calculated by MS Excel (See Appendix 1).

The study limitations can be mentioned as follows: First, the study mainly investigates only the locally owned Kuwait commercial banks, and it does not include the foreign-owned commercial banks in Kuwait. Second, the financial data was collected only from the annual reports of the banks and the Kuwait Stock Exchange websites which normally published financial statements do not give a complete picture of the commercial banks' performance. Finally, this study was constrained by lacks of the relevant research and literature about Kuwait bank sector. However, in my judgment, these limitations did not impair the academic content of the study.

5. Results and testing hypotheses

The graphs of Figure.1 present the heterogeneity of the investigated banks' financial ratios. It is clearly shown that the bank financial indicators connected to the six variables are very different in their ranges. In the case of NB, the volatility of ratios have a small range what indicates a low risk that means more stability. Contrary to NB the BURG has a considerable range in most of the cases that means the highest volatility and risk. The most substantial average volatility is shown in the case of the ROA ratios, while the smallest one in the case of the Total loans to total assets ratios.

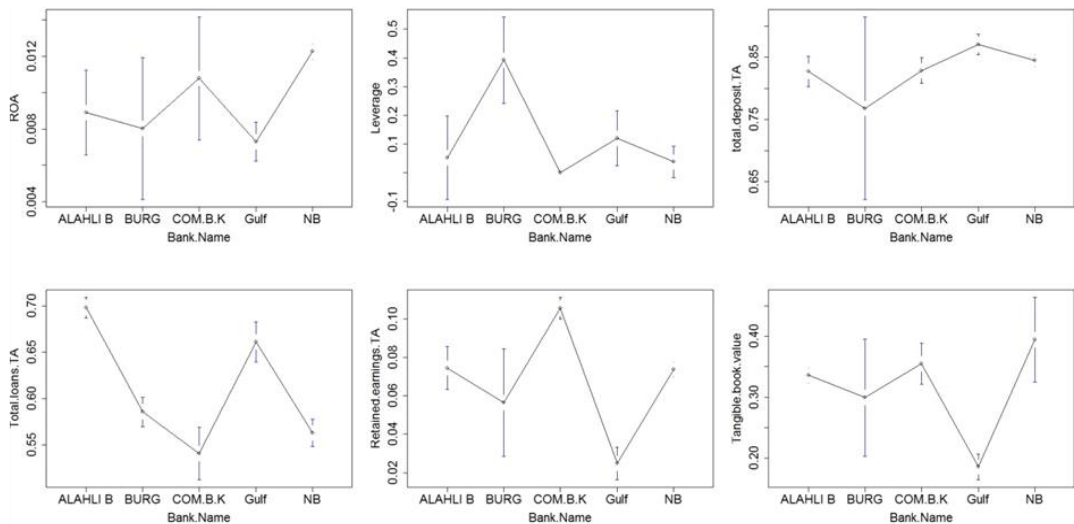


Figure 1: Heterogeneity across banks - differences among several years

Source: Author's calculation by R statistical system

First, I examined whether there is a significant difference between the banks taking into account all the variables investigated. The Pillai test was applied to determine the significance level of the difference between the banks, which is used by the MANOVA function of the R statistical system. Table 3 shows that the significance level of Pillai test is less than 5% what indicates that there is a significant difference among banks concerning ratios investigated. Thus the null hypothesis (H0) is rejected, and the alternative hypothesis will be accepted, and it is concluded that there is a significant difference among banks concerning calculated ratios. Since MANOVA's analysis has shown that there is a

significant difference among banks considering all the variables, therefore we can examine the differences among banks considering each variable separately. Each variable was tested individually with the ANOVA function, and it was found that there is a significant difference among the banks in the case of the five variables (ROA, Leverage, Total deposit to total assets, Retained earnings to total assets, Tangible book value per share) and there is no significant difference among the banks in the case of the Total loans to total assets (Table 3).

Table 3: Results of MANOVA and ANOVA analysis

| Name of the ratio | Significance level |
|-------------------------------------|--------------------|
| Total ratios (MANOVA - Pillai Test) | 0.1% |
| Results of ANOVA | |
| ROA | 1.0% |
| Leverage | 0.1% |
| Total deposit / Total Assets | 10.0% |
| Total loans / Total Assets | 0.1% |
| Retained earnings / Total Assets | 0.1% |
| Tangible book value per share | 0.1% |

Source: Author's calculation by R statistical system

Using MANOVA and ANOVA functions, it was determined that banks differ considering the investigated variables.

I continued the analysis to test the other five hypotheses using the panel regression models. Both fixed and random panel regression was determined for the bank variables selected, the results of which are shown in Tables 4 and 5.

Table 4: Result of fixed effect panel regression

| Variables | Coefficients | Standard error | t-value | Significance level | Sign of significance level |
|----------------------|--------------|----------------|---------|--------------------|----------------------------|
| Leverage | -0,0051 | 0.0037 | -1.3797 | 18.79% | - |
| Total.deposit.TA | -0.0252 | 0.0093 | -2.7019 | 1.64% | * |
| Total.loans.TA | 0.0240 | 0.0206 | 1.1664 | 26.17% | - |
| Retained.earnings.TA | 0.1323 | 0.0425 | 3.1110 | 0.72% | ** |
| Tangible.book.value | 0.0107 | 0.0090 | 1.1911 | 25.21% | - |
| R-squared | 0.6661 | | | | |
| Adjusted R-squared | 0.4657 | | | | |
| F statistic p-value | 0.31% | | | | |

Source: Author's calculation by R statistical system

Table 4 shows the coefficients of fixed effect panel regression model which indicates how the dependent variable (ROA) changes when the independent variables change by one unit. The t-tests of regression coefficients show that Total deposit/Total assets and Retained earnings/Total assets ratios have a significant influence on the dependent variable. The R-squared value (0.6661) represents a strong relationship ($R= 0.7797$) between dependent and independent variables. The F-test p-value because it is less than

5%, strengthens that the independent variables give a determinative explanation on the ROA as the independent variable.

Based on Table 5 we can see that both fixed and random models contain the same significant variables, but in the case of the random effect model,, the F-test p-value is lower (0.19%) than in the case of fixed model (0.31%). The random effect model indicates that the individual effect (88%) is greater than the idiosyncratic effect (11%) which means that the common effect of individuals (banks) and the time (years) is less than the effects of individuals. Choosing between fixed and random effects model was justified by Hausman-test (See Appendix 2).

Table 5: The result of the random effect panel regression model

| Variables | Coefficients | Standard error | t-value | Significance level | Sign of sig. level |
|----------------------|--------------|----------------|---------|--------------------|--------------------|
| Intercept | 0.0039 | 0.0121 | 0.3209 | 75.18% | - |
| Leverage | -0.0047 | 0.0034 | -1.3770 | 18.45% | - |
| Total.deposit.TA | -0.0205 | 0.0086 | -2.3859 | 2.76% | * |
| Total.loans.TA | 0.0200 | 0.0167 | 1.1990 | 24,53% | - |
| Retained.earnings.TA | 0.1031 | 0.0377 | 2.7373 | 1.31% | * |
| Tangible.book.value | 0.0127 | 0.0085 | 1.4843 | 15.41% | - |
| R-squared | 0.6079 | | | | |
| Adjusted R-squared | 0.5047 | | | | |
| F statistic p-value | 0.19% | | | | |

Source: Author's calculation by R statistical system

While the Hausman-test p-value (78.8%) was higher than 5%, it means the better to use the random effect model. From Table 5 we can state that there are only two variables with significant impact on ROA which are variables containing the Total deposit to Total assets and Retained earnings to Total assets ratios. Finally, I made a panel regression with the variables which have a significant effect on ROA (Table 6). Using only the two significant variables from Table 5, we can see that the explanatory power of the independent variable was decreased what was shown by the lower value of R-squared. However, in this case, all of the coefficients are significant at least at significance level 1%. Finally, the coefficient result presented in Table.6 reveals that Retained earnings to total assets ratio show the highest impact which has a positive relationship with ROA, whereas Total deposit to total assets is the second factor, and it has a negative relationship with ROA.

Table 6: Results of random-effect panel regression with significance variables

| Variables | Coefficients | Standard error | t-value | Significance level | Sign of sig. level |
|----------------------|--------------|----------------|---------|--------------------|--------------------|
| Intercept | 0.0233 | 0.0054 | 4.3501 | 0.03% | *** |
| Total.deposit.TA | -0.0270 | 0.0072 | -3.7579 | 0.11% | ** |
| Retained.earnings.TA | 0.1258 | 0.0312 | 4.0267 | 0.06% | *** |
| R-squared | 0.4710 | | | | |
| Adjusted R-squared | 0.4229 | | | | |
| F statistic p-value | 0.09% | | | | |

Source: Author's calculation by R statistical system

From the result of the analysis, we can test the five hypotheses we put in the study. The two hypotheses (No. 2 and No. 4) which assume there is a statistically significant impact of retained earnings and total deposit on ROA will be accepted. Regarding the other three hypotheses (No. 3, and 5) we found that all banks have a positive and non-significant relationship between these two variables, Total loans to total assets and Tangible book value per share ratios and ROA. However, all banks have a negative and non-significant relationship between Leverage and ROA (Hypothesis No. 1). According to that, these three hypotheses will be rejected.

6. Conclusions and Recommendations

Study findings showed there is an element, the proportion of retained earnings which can significantly increase the bank profitability especially return on assets. Herefore the study concludes that there is a significant relationship between Retained earnings to total assets and financial performance of Kuwait local commercial banks. Moreover, these results support the views of earlier researcher studies such as Naceur - Goiaed (2001), and Husni (2011).

The study as well concluded that there is a strong relationship between Retained earnings to total assets and financial performance of the commercial banks listed. The present findings are also aligning with the previous studies of Onoh (2002) and Nzotta(2004).

The following points are the recommendation may help Banks to perform well in the future:

- i. Since the major goal of any firm is to maximize profits, the banks' management should therefore come up with ways to increase deposits in the bank portfolio.
- ii. To maximize performance they should ensure an acceptable high ratio of retained earnings which are the undistributed profits accumulated over the years that could be used for increasing the capital resource.
- iii. A lack of finance literature related to the middle east banking sector. Therefore more researches should be done in this field and with other factors.
- iv. Finally, similar studies should be conducted on different sectors and industries such as insurance, investment, manufacturing and processing, hospitality, agriculture, and energy.

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Bio-note

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Appendix 1: Values of the financial ratios of the six variables

| Bank Name | Year | ROA | Leverage | Total deposit / Total Assets | Total loans / Total Assets | Retained earnings / Total Assets | Tangible book value per share |
|-------------|------|--------|----------|------------------------------|----------------------------|----------------------------------|-------------------------------|
| GBK | 2017 | 0.0084 | 0.1663 | 0.8571 | 0.6702 | 0.0334 | 0.2070 |
| GBK | 2016 | 0.0079 | 0.1744 | 0.8598 | 0.6303 | 0.0297 | 0.1970 |
| GBK | 2015 | 0.0072 | 0.0000 | 0.8873 | 0.6682 | 0.0241 | 0.1850 |
| GBK | 2014 | 0.0067 | 0.0859 | 0.8807 | 0.6721 | 0.0200 | 0.1750 |
| GBK | 2013 | 0.0063 | 0.1751 | 0.8675 | 0.6637 | 0.0167 | 0.1640 |
| | | | | | | | |
| NBK | 2017 | 0.0124 | 0.1068 | 0.8350 | 0.5571 | 0.0729 | 0.4570 |
| NBK | 2016 | 0.0122 | 0.0403 | 0.8405 | 0.5616 | 0.0736 | 0.4320 |
| NBK | 2015 | 0.0120 | 0.0420 | 0.8484 | 0.5743 | 0.0712 | 0.4100 |
| NBK | 2014 | 0.0120 | 0.0000 | 0.8557 | 0.5467 | 0.0721 | 0.3500 |
| NBK | 2013 | 0.0128 | 0.0000 | 0.8421 | 0.5750 | 0.0789 | 0.3240 |
| | | | | | | | |
| CBK | 2017 | 0.0126 | 0.0000 | 0.8043 | 0.5089 | 0.1087 | 0.3980 |
| CBK | 2016 | 0.0122 | 0.0000 | 0.8219 | 0.5455 | 0.1072 | 0.3660 |
| CBK | 2015 | 0.0114 | 0.0000 | 0.8273 | 0.5691 | 0.1062 | 0.3450 |
| CBK | 2014 | 0.0117 | 0.0000 | 0.8447 | 0.5506 | 0.0977 | 0.3300 |
| CBK | 2013 | 0.0060 | 0.0000 | 0.8439 | 0.5289 | 0.1081 | 0.3370 |
| | | | | | | | |
| ABK | 2017 | 0.0082 | 0.2617 | 0.8106 | 0.7050 | 0.0702 | 0.3450 |
| ABK | 2016 | 0.0076 | 0.0000 | 0.8483 | 0.7070 | 0.0675 | 0.3350 |
| ABK | 2015 | 0.0070 | 0.0000 | 0.8478 | 0.6990 | 0.0664 | 0.3200 |
| ABK | 2014 | 0.0107 | 0.0000 | 0.8180 | 0.6923 | 0.0828 | 0.3460 |
| ABK | 2013 | 0.0111 | 0.0000 | 0.8100 | 0.6857 | 0.0852 | 0.3340 |
| | | | | | | | |
| BURG | 2017 | 0.0088 | 0.3717 | 0.5603 | 0.5944 | 0.0202 | 0.3300 |
| BURG | 2016 | 0.0094 | 0.5515 | 0.7938 | 0.5883 | 0.0740 | 0.3550 |
| BURG | 2015 | 0.0112 | 0.2792 | 0.8172 | 0.5989 | 0.0744 | 0.3460 |
| BURG | 2014 | 0.0080 | 0.2816 | 0.8172 | 0.5785 | 0.0631 | 0.3000 |
| BURG | 2013 | 0.0028 | 0.4787 | 0.8511 | 0.5675 | 0.0504 | 0.1660 |

Source: Author's calculation by Excel soft software

Appendix 2: Hausman test

| | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
| Hausman Test | | | | | | | | | |
| | | | | | | | | | |
| data: ROA ~ Leverage + total.deposit.TA + Total.loans.TA + Retained.earnings.TA + ... | | | | | | | | | |
| chisq = 2.4736, df = 5, p-value = 0.7805 | | | | | | | | | |
| alternative hypothesis: one model is inconsistent | | | | | | | | | |

Source: Author's calculation by R statistical program