

# Financial Information Influencing Commercial Banks Profitability

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## Abstract

The paper investigates the influence of bank capital ratio, size and loans on the profitability of a commercial bank in Jordan. It also evaluates whether returns on Assets (ROA) or returns on equity (ROE) is the better indicator that reflects bank profitability. Two Multiple regression models are used to test the influence of capital ratio, size and loans of a commercial bank on its profitability indicators measured by ROA and ROE and to detect the superiority between the two indicators for 13 Jordanian commercial banks for the period 2005-2013. The results of the study showed that capital ratio, size and loans have insignificant influence on ROA, but not on ROE except bank size. Regarding ROE, significant negative and positive influence for capital ratio and loans respectively are concluded. Although the small number of commercial banks in Jordan and some variables have not been well researched in literature, the paper presents a sight to associate bank performance/profitability proxied by ROA and ROE with its capital ratios, size and loans. Our results might assist bank management to capitalize the factors that could improve banks performance and hedge against the adverse factors.

**Keywords:** ROA, ROE, capital ratio, size, loans, Jordanian commercial banks

## 1. Introduction

Profitability has been widely examined as a performance measure of the banking sector in developed countries (Sufian & Habibullah, 2010). The widely used indicators to assess commercial banks performance are return on total assets (ROA) and return on total equity (ROE). Over the past several years, an increased attention regarding performance analysis has been received by financial institutions particularly commercial banks. As a result, the research's focus has been shifted from characterizing performance in simple ratios as ROA or ROE to a multidimensional systems perspective. According to Seiford and Zhu (1999), although important and relevant information about bank financial performance can be provided by accounting and financial ratios, research on assessing the relationships between financial factors and bank performance has to be extended. To assist improving bank productivity, the influence of financial factors namely capital ratio, bank size and loans on bank profitability, proxied by ROA and ROE, is examined in this study.

Although the existence of banking system problems and the increase in the financial sector measures, limited or inadequate analyses have been done to conclude the determinants of bank performance (Sayilgan & Yildirim, 2009; Alrgaibat, 2010; Sufian & Habibullah, 2010). Therefore, the current study examines the profitability of commercial banks in Jordan as a developing economy. In addition, limited studies on banks financial performance have been conducted in Jordan (Alrgaibat, 2010).

Due to limited studies on banking sector profitability (Sayilgan & Yildirim, 2009), and few studies have examined the performance of a commercial bank, namely, the study's selected financial factors in Jordan. Hence, this study tries to extend the literature in this area by presenting evidence regarding evaluating commercial bank performance in terms of profitability in Jordan for the period from 2005 to 2013. Banking industry is an important sector among the economic sectors in Jordan and it has higher level of productivity compared with other sectors, such as industrial, services and even insurance firms, which were affected by the country's economic circumstances.

The study addresses the following questions:

- 1) To what extent are capital ratio, bank size and loans of a commercial bank related to its profitability?

## 2) Is ROA superior to ROE in measuring commercial banks profitability?

The objectives of this study are to investigate whether capital ratio, size and loans of a commercial bank influence its profitability in Jordan and to evaluate which measure between ROA and ROE is the better indicator in reflecting bank profitability.

To fill the gap in academic and empirical work that suffers the lack of the scientific research on banking area in developing countries, the study adds an empirical evidence to the previous research on the commercial banks in Jordan. Also, the study tries to measure the commercial banks performance in terms of profitability to assist customers, managers, government agencies, policy makers, regulators, and analysts to better evaluate the bank performance that they deal with. Through the results of this study, bank management might be able to capitalize the factors that could improve banks performance and hedge against the adverse factors.

## 2. Literature Review

### 2.1 Commercial Banks in Jordan

Jordanian banking sector is controlled by the central bank of Jordan (CBJ) which is an independent legal entity established in 1964. Despite the political and economic instability affecting the region, banking sector in Jordan has shifted from strong to strong, showing impressive progress along the way. This is due to that CBJ has an efficient management operating in well regulated environment (Algaibat, 2010). By the mid-1980s, Jordan became unique among Arab countries in the value of banks assets which exceeded its gross domestic product (GDP). The total assets of the commercial bank rose from Jordanian Dinar (JOD) 2.8 billion in 2005 to JOD 42.8 billion in 2013. According to CBJ annual report (2013), Jordan has 26 banks with 16 locally licensed ones, including three Islamic banks and 10 branches of non-Jordanian banks serving a population of 6.46 million.

### 2.2 Profitability Influenced by Financial Factors

Banking profitability can be looked at through ROE and ROA (Srairi, 2009) which are the most general ratios used in presenting banks performance. Central banks as supervisory authorities use those indicators in measuring profitability (Athanasoglou et al., 2008). Empirical studies on banking performance have widely focused on ROA and ROE ratios.

ROA and ROE indicators have been used by bank regulators and analysts to measure bank profitability, assess performance and predict market's structure trend. They are used as statistical model inputs to forecast bank failures and mergers and for many purposes where a profitability measure is required (Gilbert & Wheelock, 2007; Christian et al., 2008). Reviewing the prior research for profitability indicators with bank capital, size and loan is an important in examining the relationships among them.

#### 2.2.1 Bank Capital

High capital ratios, as a ratio of equity to total assets, let banks to be relatively safer in the events of loss or liquidation, and reduce their reliance on external funding and then increase their profitability. It is found that there is a significant and positive relationship between bank capital and its profitability. Ben Naceur (2003) investigated the influence of banks characteristics and financial structure on Tunisian banks profitability for the period 1980-2000. He found that bank characteristics explained an essential part in bank net profitability variation where high profitability had been found in banks with relatively high capital amount.

Testing 80 countries for the period 1988-1995, Demircug-Kunt and Huizinga (1999) concluded that both capital adequacy and foreign ownership have positively affected ROA. Capital adequacy ratio has positively affect ROE for period 1992-1998 in Italy, Denmark, Germany, England, France and Spain banking sectors (Goddard et al., 2004a).

Kaya (2002) also found that capital ratio has positively affected ROA and negatively affected ROE. In addition, Abreu and Mendes (2002) examined banks of Spain, France, Portugal and Germany and for the period 1986-1999 and concluded that there was a positive influence of capital ratios on both ROA and ROE. Athanasoglou et al. (2008) found a positive and significant influence of capital on assets ratio on profitability in Greek banks for the period 1985-2001. This influence was only half of the influence that was found in Australian, North American and European banks (Bourke, 1989) and in European banking industry (Molyneux & Thornton, 1992).

In Turkish banking sector, capital ratio has a positive influence on ROA and ROE in the period 2002-2007 (Sayilgan & Yildirim, 2009). Sufian (2011) analyzed the Korean banking profitability in terms of ROA and ROE over the period 1992-2003 and he found that capital ratio was positively and significantly related to profitability.

Investigating bank data from 44 developed and developing countries over the period 1990-1997, Demircug-Kunt

and Huizinga (2000) found that profit to total asset ratio was positively related to capital ratio. This indicates that lower expected bankruptcy costs may affect the well capitalized banks and their customers, thereby reducing their funding cost.

Arabian Gulf Cooperation Council (AGCC) countries banks have been examined by Srairi (2009) who found that capital adequacy was highly significant and positively related to ROA. His results supported the argument that a sound capital position enables the bank to have more effective business opportunities and charging more for loans and paying less on deposits due to lower bankruptcy risks. Examining the performance of 13 European countries' banks, Staikouras and Wood (2003) found that banks could be relatively more profitable with greater levels of equity. Capital strength has been found to be the main determinant of profitability measured by ROA in the sample of 15 EU countries' commercial domestic and foreign banks for period 1995-2001 (Pasiouras & Kosmidou, 2007).

Regarding Malaysian banks profitability and for the period 1999-2007, Sufian and Habibullah (2010) found that banks capital ratio has significantly positive relation with their profitability. Their results supported the argument that when banks are well capitalized, they face lower costs of being bankrupt and then lowers their funding cost and reliance on external funding which results in higher profitability. Dawood (2014) examined the impact of capital adequacy (measured by total equity/total assets) on the profitability (ROA) of 23 commercial banks in Pakistan for the period 2009-2012. He found that the capital adequacy has significant positive impact on ROA.

Berger (1995) concluded that ROE of US banks has been positively affected by capital adequacy ratio in 1983-1989 and negatively in 1989-1992. Berger explained his results by that the association of capital adequacy ratio with profitability has been affected by the specific circumstances at the examining time. He argued that when banks financial situation is perceived as risky, capital adequacy ratio will positively affect profitability and in normal situations, it will negatively affect profitability due to alternative capital cost. The main problem rose regarding this result is how to limit the optimal level for the capital adequacy ratio.

Few studies found negative relationship between bank capital and profitability (Navapan & Tripe, 2003). They emphasized that it is self-evidence that a negative relationship should exist between capital to assets ratio and ROE. Mathuva (2009) examined the relationship between capital structure and banks profitability (ROA and ROE) and he found that they are negatively correlated. Oino (2015) used a panel data of 97 sub-Saharan African banks for the period from 2000 to 2012 and found that capital ratio negatively and significantly influence profitability. The negative relationship can be explained by that increasing providers to a bank from the banks retained earnings in form of dividends will lead to reduce banks retained funds for growth purposes, which will reduce funds available to boost profit (Mathuva, 2009). Goddard et al. (2004b) examined the performance of European banks during the 1990s. They found a predominantly negative relationship between capital to assets ratio and bank profitability. These findings suggested, according to portfolio theory, risky banks try to create higher profits.

In addition to above mentioned studies, an insignificant influence has been found for ownership on bank profitability in few studies (Staikouras & Steliaros, 1999; Hondroyiannis et al., 1999; Gibson, 2005). Consistent with most previous studies, the study expects positive influence for bank capital on its profitability. Alkhazaleh and Almsafir (2014) examined the effect of a bank capital structure on the profitability measured by ROA for 14 banks in Jordan for the period 1999-2013. They found that the capital structure has a negative and significant effect on the bank profitability. Bank capital ratio as independent variable is measured by total equity to total assets (Demirguc-Kunt & Huizinga, 2000; Kaya, 2002; Abreu & Mendes, 2002; Athanasoglou et al., 2008; Sayilgan & Yildirim, 2009; Srairi, 2009; Sufian, 2011).

### 2.2.2 Bank Size

What bank size optimizes its profitability is an important question underlying bank policy. Many studies dealt with size variable to conduct bank profitability. Short (1979) found that bank size and its capital adequacy are closely related as large banks try to raise less expensive capital in order to be more profitable. There are similar evidences, bank size has been linked to capital ratios that are considered as positively related to size; i.e. when bank size increases profitability will increase (Short, 1979; Bourke, 1989; Molyneux & Thornton, 1992).

Sufian (2011) concluded that there is a positive influence for the natural logarithm of Korean banks' total assets in a year as a proxy of bank size on its profitability. Athanasoglou et al. (2006) found a positive influence of logarithm of total assets on ROA in their seven European countries banks for the period 1998-2002. Demirguc-Kunt and Maksimovic (1999) found that various financial, legal and other factors which affected bank profitability are closely linked to firm size. Also, many studies found bank size and its profitability are positively and significantly related to each other (Akhavain et al., 1997; Maghyerech & Shammout, 2004).

Seiford and Zhu (1999) examined the performance of the top 55 US commercial banks in 1995. They found that large banks showed better performance on profitability than smaller ones. While Berger and Humphrey (1997) found that there was consistent evidence that large banks were more efficient than small ones, Goddard et al. (2004b) concluded that there was no consistent evidence of a relationship between banks' size and their profitability. Athanasoglou et al. (2008) and Eichengreen and Gibson (2001) found that bank size and their profitability have a non-linear relationship, where profitability increased with size and then declined. Dawood (2014) found that the size of bank has insignificant positive impact on ROA regarding commercial banks in Pakistan.

Generally and to a certain extent, the influence of bank's size on its profitability has been found to be positive because when banks become larger, bank size could have negative influence on its profitability due to bureaucratic and other reasons. Hence, the relationship between bank size and its profitability is expected to be non-linear (Athanasoglou et al., 2008).

Athanasoglou et al. (2008) found insignificant influence for Greek banks size on their profitability in terms of ROA and ROE for the period 1985-2001. This result has been supported by Sufian and Habibullah (2010). Ben Naceur and Goaied (2008) found this influence to be negative in Tunisian banks during the period under study. Also, this result has been supported by Srairi (2009) who found that bank size negatively influenced ROA and Pasiouras and Kosmidou (2007) who found a negative association between size and bank's profitability for both domestic and foreign banks. Alkhazaleh and Almsafir (2014) also found that the bank size has a negative and significant effect on the bank ROA in Jordan. This suggests mainly that if bank's size exceeds a certain value, its profitability tends to be lower (Vander Venet, 1998).

Consistent with some previous studies, the current study expects a positive influence for bank size on its profitability and this variable is measured as the natural logarithm of the accounting value of bank total assets in a year (Demirguc-Kunt & Maksimovic, 1999; Seiford & Zhu, 1999; Sufian, 2011).

### 2.2.3 Bank Loans

Since banking sector is a liquidity provider and information producer, it is the most important financial intermediary in an economy (Diamond & Dybvig, 1983). In most countries, banks provide loans to facilitate economic growth such as starting businesses, purchasing homes and so on. In developing countries, improving banking sector could have significant influence on the financial resources allocation because banks remain the most important source of financing for firm's private investment (Sufian & Habibullah, 2010). In Jordan, banking sector distributes the important credit facilities to different economic sectors.

Loans as a ratio of loans to total assets have been used as a bank managers' risk aversion proxy where high degree of capitalization is referred to high risk aversion and vice versa (Busch & Kick, 2009). Loans is an indicator of liquidity which reflects the credit risk (Athanasoglou et al., 2008) and indicates the percentage of bank's assets that is tied up in loans in a year (Sufian & Habibullah, 2010; Sufian, 2011).

Banks issued governmental incorporated charters to make loans for their customers (Siam, 2007). Banks also try to support their local customers with an adequate credit supply for their business and financial needs and to price that credit with competitively market interest rate (Rose, 1983). Despite the lending benefits for both borrower and institutions, it could negatively affect banks functions as banks problems usually arise from uncollectible loans due to mismanagement, illegal manipulation, misguided lending policies or an expected economic downturn (Siam, 2007).

Demirguc-Kunt and Huizinga (2000) concluded that there is a significant positive influence of loans on bank profitability, which reflects that loans are interest paying, thereby increasing net interest income. Collateralizing loans could improve assets quality having adequate provisions against potential losses, or avoiding assets concentration on one economic sector (Hassan & Bashir, 2003). While bank loans are risky and have a higher expected return than other assets; i.e. loans are expected to be positively related to profitability (Bourke, 1989). Fewer funds tied up in liquid investments lead to higher expected profitability (Eichengreen & Gibson, 2001).

Many studies found that merging banks shift their output mixes from securities to loans to enhance banks profit because, although issuing loans could increase banks risks, it creates more value than purchasing securities. This shift may occur due to that merging banks could better diversify risks than previous management by holding a higher loan to assets ratio with the same amount of capital (Berger & Humphrey, 1997; Akhavein et al., 1997).

Sufian and Habibullah (2009) found a positive influence for credit risk on the Chinese commercial banking profitability, where higher credit risk of a bank tends to be more profitable. This conclusion supported the findings of Hassan and Bashir (2003), who investigated eight Islamic banks profitability of Middle Eastern

countries for the period 1993-1998, and found a positive influence of loans on their profitability. These findings are also supported by Sufian and Habibullah (2010), who found a significant influence of loans on profitability of Malaysian banks. Also, these results are supported by Sufian (2011) who investigated the influence of loans on the profitability (ROA and ROE) of Korean banks and found it to be positive.

In the case of Greek banks, opposite findings have been concluded that credit risk of banks has negative and significant relation with profitability. This could be due to the fact that bank managers try to maximize profits through policies that improve monitoring credit risk (Athanasoglou et al., 2008). Same influence has been found by Srairi (2009) who found that loan has a negative significant influence on ROA for AGCC countries which explained by the higher reserves for loan losses maintained by conventional banks.

Since Christian et al. (2008) concluded a significant relationship between change in total assets of a bank with its profitability and loans have no explanatory power on bank profitability, some studies found negative influence of banks loans on their profitability (Staikouras and Steliaros, 1999; Hondroyannis et al., 1999; Gibson, 2005) and negative influence of loans on their ROA has been concluded by Staikouras and Wood (2003).

Due to the inconsistent findings for the influence of banks loans on their profitability, we have no clear idea about what will be the results our study. The study measures this variable as loans (Demirguc-Kunt & Huizinga, 2000; Hassan & Bashir, 2003; Christian et al., 2008; Busch & Kick, 2009; Sufian & Habibullah, 2010; Sufian, 2011).

### 3. Conceptual and Theoretical Framework, Hypotheses Development and Models

Theoretically, since bank performance, reflected by its profitability, is related to policy's executives, equity shareholders and depositors, agency theory can explain the relationship among these parties. Stronger incentives have been expected to face firms owned by stockholders to control costs and/or enhance profits compared to mutual organizations where firms' owners are depositors or policyholders (Berger & Humphrey, 1997). Also, credit risk theory states that the decrease in profitability is related to the increased exposure to credit risk and borrower's ability to repay debt and interests (Hassan and Bashir, 2003; Athanasoglou et al., 2008; Maghyerech and Shammout, 2004). The theoretical framework of our study links profitability indicators as ROA and ROE to financial factors. ROA and ROE are our dependent variables and the financial factors (capital, size and loans) are our independent variables. Figure 1 illustrates the theoretical framework of this study.

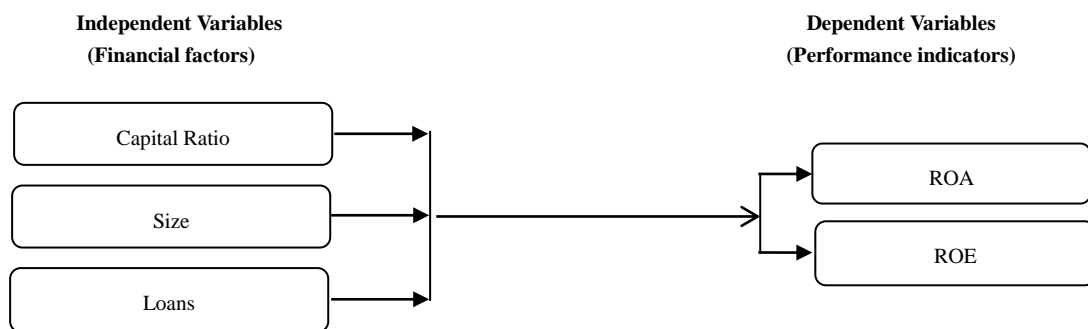


Figure 1. Theoretical framework

In Jordanian commercial banks, this study hypothesized the relationship among its variables as:

- Profitability and financial factors (H1)
  - H1-1<sub>A</sub>*: Bank capital ratio influences the profitability indicator (ROA).
  - H1-1<sub>B</sub>*: Bank capital ratio influences the profitability indicator (ROE).
  - H1-2<sub>A</sub>*: Bank size influences the profitability indicator (ROA).
  - H1-2<sub>B</sub>*: Bank size influences the profitability indicator (ROE).
  - H1-3<sub>A</sub>*: Bank loans influence the profitability indicator (ROA).
  - H1-3<sub>B</sub>*: Bank loans influence the profitability indicator (ROE).
- Superiority of profitability indicators (H2)
  - H2*: Bank profitability measured by ROA is greater than that measured by ROE.

Multiple regression analysis is adopted and the results for the pooled sample are used to accept/reject the hypotheses. Following Gilbert and Wheelock (2007) and Mathuva (2009) among others, the study uses two models in measuring its hypotheses to indicate Jordanian commercial banks' ability to produce their profits within the recent circumstances. Our models are:

$$ROA = \beta_0 + \beta_1 CAPITAL + \beta_2 SIZE + \beta_3 LOANS + e \quad (1)$$

$$ROE = \mu_0 + \mu_1 CAPITAL + \mu_2 SIZE + \mu_3 LOANS + e \quad (2)$$

where; ROA = return on total assets; ROE = return on equity; CAPITAL = equity to total assets; SIZE = total assets; LOANS = total loans to total assets; e = errors term.

Our data is secondary in nature and collected from banks financial statements and ASE database for the period 2005-2013. Sample is selected according to certain criteria that banks sample must be established and listed in ASE before 2005 and have complete information regarding study variables. Total sample is 117 banks/years (13 banks x 9 years) and the pooled observations in process are 585 (117 x 5 variables).

#### 4. Findings, Discussion and Conclusion

Tables 1 and 2 represent the descriptive and multiple regression results of the study. Regarding the pooled sample and based on Table 2, the financial variables (capital ratio, size and loans) show insignificant values with ROA (H1-1<sub>A</sub>, H1-2<sub>A</sub> and H1-3<sub>A</sub>), but not with ROE except bank size (H1-2<sub>B</sub>). Regarding ROE, significant negative and positive influence for capital ratio (H1-1<sub>B</sub>) and loans (H1-3<sub>B</sub>) respectively are detected.

Table 1. Descriptive statistics

|                |         | ROA    | ROE     | capital ratio | SIZE   | LOANS  |
|----------------|---------|--------|---------|---------------|--------|--------|
| N              | Valid   | 117    | 117     | 117           | 117    | 117    |
|                | Missing | 0      | 0       | 0             | 0      | 0      |
| Mean           |         | 1.7194 | 12.8188 | 14.0603       | 9.0891 | .0374  |
| Minimum        |         | .12    | 1.01    | 7.30          | 8.21   | .00    |
| Maximum        |         | 4.98   | 39.92   | 20.66         | 10.36  | .18    |
| Std. Deviation |         | .75934 | 6.04417 | 3.23230       | .48289 | .04427 |
| Skewness       |         | 1.642  | 1.564   | .301          | 1.014  | 1.820  |
| Kurtosis       |         | 5.093  | 5.084   | -.914         | 1.250  | 2.872  |

Note. ROA = return on assets; ROE = return on equity; CAPITAL = total equity on total assets; SIZE = natural logarithm of total assets; LOANS = total loans on total assets.

For bank capital and profitability (H1-1), the results indicated insignificant influence for capital ratio on ROA. These results are consistent with studies that concluded insignificant influence of bank capital on profitability (Staikouras & Steliaros, 1999; Hondroyannis et al., 1999; Gibson, 2005). This result is inconsistent with previous studies that found that the bank capital has respectively significant positive and significant negative influences on ROA (Dawood, 2014; Alkhazaleh & Almsafir, 2014). Regarding ROE, results are consistent with studies that concluded negative influence (Navapan & Tripe, 2003; Goddard et al., 2004b; Mathuva, 2009; Oino, 2015). However, they are inconsistent with other studies that concluded a positive and significant influence of capital ratio on bank profitability in many countries (Demirguc-Kunt & Huizinga, 1999; Ben Naceur, 2003; Goddard et al., 2004a; Pasiouras & Kosmidou, 2007; Sufian & Habibullah, 2010; Sufian, 2011). Since the results support H1-1<sub>B</sub> but not H1-1<sub>A</sub>, we accept the former and reject the later.

Table 2. Regression analysis results

| Indicator | Model Test |       | Variables Test | CAPITAL | SIZE  | LOANS  |
|-----------|------------|-------|----------------|---------|-------|--------|
| ROA       | .229       | 3.499 | Beta           | -.014   | -.018 | .188   |
|           |            |       | t-test         | -.117   | -.105 | 1.529  |
|           |            |       | Sig.           | .907    | .917  | .132   |
| ROE       | .336       | 5.974 | Beta           | -.470   | .047  | .253   |
|           |            |       | t-test         | -4.362  | .303  | 2.059  |
|           |            |       | Sig.           | .000*** | .763  | .044** |

Note. \*Significant at p < 0.10; \*\* Significant at p < 0.05; \*\*\* Significant at p < 0.01.

All variables are defined before. Number of observations = 585.

For bank size and profitability (H1-2), bank size showed negative insignificant influence on its profitability (ROA and ROE). This result is consistent with Goddard et al. (2004b), Athanasoglou et al. (2008) and Alkhazaleh and Almsafir (2014). As such, bank size cannot be a determinant for the Jordanian commercial banks' profitability. Although studies found negative relationship between bank size and its profitability (Pasiouras & Kosmidou, 2007; Ben Naceur & Goaied, 2008; Srairi, 2009), the result is inconsistent with other studies that found positive influence (Berger & Humphrey, 1997; Demircuc-Kunt & Maksimovic, 1999; Sufian, 2011). Also, this result is inconsistent with Dawood (2014) who found that the bank size has a positive influence on ROA. These results lead us to reject H1-2<sub>A</sub> and H1-2<sub>B</sub>.

For bank loans and profitability (H1-3), as loans showed insignificant positive influence on ROA in agreement with Hondroyannis et al. (1999), this leads us to reject H1-3<sub>A</sub>. Although loans show insignificant influence on ROE during the observed period, this influence is positive and significant in the pooled sample which leads us to accept H1-3<sub>B</sub>. Although our result is consistent with studies that concluded significant influence of loans on bank profitability (Bourke, 1989; Demircuc-Kunt & Huizinga, 2000; Hassan & Bashir, 2003; Sufian & Habibullah, 2009; 2010), it is inconsistent with other studies (Staikouras & Steliaros, 1999; Staikouras & Wood, 2003; Gibson, 2005; Srairi, 2009).

For superiority of bank profitability indicators (ROA and ROE) (H2), it is clear that the selected financial variables react more significantly with ROE than ROA which leads us to reject H2. Since no study that examined the superiority of the profitability indicators (ROA and ROE) in commercial bank has been found in the literature, as far as our study is concerned, this area of research needs to be extended.

The study concluded that bank capital ratio and loans in Jordanian commercial banks have respectively negative and positive significant influence on ROE but not on ROA, while bank size has no significant influence on both. As limitations, we faced some constraints. One was the small number of commercial banks in Jordan compared with other countries especially the developed ones. Some variables have not been well researched in literature. This makes it difficult to compare our findings with other studies.

We call future research to employ other profitability indicators, in addition to ROA and ROE such as net interest margin (NIM) and return on investment (ROI). Future works also called to examine the influence of other factors on banks profitability. The number of observations can also be extended to include more years. It will be more beneficial researching commercial bank profitability across many countries.

## References

- Abreu, M., & Mendes, V. (2002). *Commercial bank interest margins and profitability: Evidence from EU countries*. Working paper, University of Connecticut.
- Akhavain, J., Berger, A. N., & Humphrey, D. B. (1997). The effects of megamergers on efficiency and prices: Evidence from a bank profit function. *Review of Industrial Organization*, 12(1), 95-139. <http://dx.doi.org/10.1023/A:1007760924829>
- Alkhazaleh, A. M., & Almsafir, M. (2014). Bank specific determinants of profitability in Jordan. *Journal of Advanced Social Research*, 4(10), 1-20.
- Alrgaibat, G. A. (2010). The profitability of the banking sector in Hashemite Kingdom of Jordan (1999-2008). *European Journal of Economics, Finance and Administrative Sciences*, 26, 172-180.
- Amman Stocks Exchange (ASE). (2005-2013). *Historical data*. Retrieved on March 10, 2014 from [http://www.ase.com.jo/en/company\\_historical](http://www.ase.com.jo/en/company_historical)
- Athanasoglou P., Delis M., & Staikouras, C. (2006). *Determinants of Banking Profitability in the South Eastern European Region*. Working Paper 06/47, Bank of Greece.
- Athanasoglou, P., Brissimis, S., & Delis, M. (2008). Bank-specific, industry specific and macroeconomic determinants of bank profitability. *International Financial Markets Institutions and Money*, 18(2), 121-136. <http://dx.doi.org/10.1016/j.intfin.2006.07.001>
- Ben Naceur, S. (2003). *The determinants of the Tunisian banking industry profitability: Panel evidence*. ERF Research Fellow, Université Libre de Tunis.
- Ben Naceur, S., & Goaied, M. (2008). The determinants of commercial bank interest margin and profitability: Evidence from Tunisia. *Frontiers in Finance and Economics*, 5(1), 106-130.
- Berger, A. N. (1995). The profit-structure relationship in banking—Tests of market-power and efficient-structure hypotheses. *Journal of Money, Credit and Banking*, 27, 404-431. <http://dx.doi.org/10.2307/2077876>

- Berger, A. N., & Humphrey, D. B. (1997). Efficiency of financial institutions: International survey and directions for future research. *European Journal of Operational Research*, 98(2), 175-212. [http://dx.doi.org/10.1016/S0377-2217\(96\)00342-6](http://dx.doi.org/10.1016/S0377-2217(96)00342-6)
- Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking and Finance*, 13(1), 65-79. [http://dx.doi.org/10.1016/0378-4266\(89\)90020-4](http://dx.doi.org/10.1016/0378-4266(89)90020-4)
- Busch, R., & Kick, T. (2009). *Income diversification in the German banking industry. Discussion Paper Series 2: Banking and Financial Studies No 09/2009*. Deutsche Bundesbank, Eurosystem.
- Central Bank of Jordan. (2005-2013). *Annual and Monthly Statistical Bulletin*. Various Issues, Amman: Research Department, CBJ
- Christian, C., Moffitt, J. S., & Suberly, L. A. (2008). Fundamental analysis for evaluating performance: What variables provide the greatest insight into future earnings? *Journal of Bank Accounting and Finance*, 4, 17-24.
- Dawood, U. (2014). Factors impacting profitability of commercial banks in Pakistan for the period of (2009-2012). *International Journal of Scientific and Research Publications*, 4(3), 1-7.
- Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: Some international evidence. *World Bank Economic Review*, 13(2), 379-408. <http://dx.doi.org/10.1093/wber/13.2.379>
- Demirgüç-Kunt, A., & Huizinga, H. (2000). *Financial structure and bank profitability*. European Banking Center (EBC), Policy Research Working Paper Series No. 2430, Centre for Economic Policy Research (CEPR). <http://dx.doi.org/10.1596/1813-9450-2430>
- Demirgüç-Kunt, A., & Maksimovic, V. (1999). Law, finance, and firm growth. *Journal of Finance*, 53(6), 2107-2137. <http://dx.doi.org/10.1111/0022-1082.00084>
- Eichengreen, B., & Gibson, H. D. (2001). *Greek banking at the dawn of the new millennium*. Working Paper No. 2791. Centre for Economic Policy Research (CEPR), May, 2001.
- Gibson, H. D. (2005). Developments in the profitability of Greek banks. *Bank of Greece Economic Bulletin*, 24, 7-28.
- Gilbert, R. A., & Wheelock, D. C. (2007). Measuring commercial bank profitability: Proceed with caution. *Federal Reserve Bank of St. Louis Review*, 89(6), 515-532. <http://dx.doi.org/10.2139/ssrn.1060341>
- Goddard, J., Molyneux, P., & Wilson, J. (2004a). The profitability of European banks: A cross-sectional and dynamic panel analysis. *The Manchester School*, 72(3), 363-381. <http://dx.doi.org/10.1111/j.1467-9957.2004.00397.x>
- Goddard, J., Molyneux, P., & Wilson, J. (2004b). Dynamic of growth and profitability in banking. *Journal of Money, Credit and Banking*, 36(6), 1069-1090. <http://dx.doi.org/10.1353/mcb.2005.0015>
- Hassan, M. K., & Bashir, A. M. (2003). *Determinants of Islamic banking profitability*. Proceedings of the Economic Research Forum 10<sup>th</sup> Annual Conference, Marrakech, Morocco, December 16-18.
- Hondroyannis, G., Lolos, S. E., & Papapetrou, E. (1999). Assessing competitive conditions in the Greek banking system. *Journal of International Financial Markets Institutions and Money*, 9, 377-391. [http://dx.doi.org/10.1016/S1042-4431\(99\)00017-7](http://dx.doi.org/10.1016/S1042-4431(99)00017-7)
- Kaya, T. Y. (2002). Determinants of profitability in Turkish banking sector. *Turkish Banking Regulation and Supervision Agency*, No: 2002/1. Retrieved on March 25, 2015 from <http://www.bddk.org.tr/websitesi/English.aspx>
- Maghyerech, A., & Shammout, M. (2004). Determinants of commercial banks performance in Jordan. *Arabic Economic Research*, 32(33), 3-33.
- Mathuva, D. M. (2009). Capital adequacy, coat income ratio and the performance of commercial banks: the Kenyan scenario. *The International Journal of Applied Economics and Finance*, 3(2), 35-47. <http://dx.doi.org/10.3923/ijaef.2009.35.47>
- Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking and Finance*, 16, 1173-1178. [http://dx.doi.org/10.1016/0378-4266\(92\)90065-8](http://dx.doi.org/10.1016/0378-4266(92)90065-8)
- Navapan, K., & Tripe, D. (2003). *An exploration of the relationship between bank capital levels and return on equity*. Proceeding of the 16<sup>th</sup> Australasian Finance and Banking Conference, (AFBC 16), Palmerstone North:

pp. 1-15.

- Oino, I. (2015). Competitiveness and Determinants of Bank Profitability in Sub-Saharan Africa. *International Journal of Economics and Finance*, 7(10), 151-162. <http://dx.doi.org/10.5539/ijef.v7n10p151>
- Pasiouras, F., & Kosmidou, M. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222-237. <http://dx.doi.org/10.1016/j.ribaf.2006.03.007>
- Rose, P. S. (1983). Loans in trouble in a troubled economy. *Canadian Bank*, 3, 25-38.
- Sayilgan, G., & Yildirim, O. (2009). Determinants of profitability in Turkish banking sector: 2002-2007. *International Research Journal of Finance and Economics*, 28, 207-214.
- Seiford, L. M., & Zhu, J. (1999). Profitability and marketability of the top 55 U.S. commercial banks. *Management Science*, 45(9), 1270-1288. <http://dx.doi.org/10.1287/mnsc.45.9.1270>
- Short, B. K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe, and Japan. *Journal of Banking and Finance*, 3, 209-219. [http://dx.doi.org/10.1016/0378-4266\(79\)90016-5](http://dx.doi.org/10.1016/0378-4266(79)90016-5)
- Siam, A. Z. (2007). Effects of collateral pledges in reducing credit risks – confronting banks in Jordan, as lending institutions. *Journal of Social Sciences*, 3(3), 134-137. <http://dx.doi.org/10.3844/jssp.2007.134.137>
- Srairi, S. A. (2009). Factors influencing the profitability of conventional and Islamic commercial banks in GCC countries. *Review of Islamic Economics*, 13(1), 5-30.
- Staikouras, C., & Steliaros, M. (1999). Determinants factors of profitability of the Greek banking system. *Journal of the Banking Association of Greece*, 19(20), 61-66.
- Staikouras, C., & Wood, G. (2003). *The determinants of bank profitability in Europe*. Paper presented at the European Applied Business Research Conference, Venice, 9–13 June.
- Sufian, F. (2011). Profitability of Korean banking sector: Panel evidence on bank specific and macroeconomic. *Journal of Economics and Management*, 7(1), 43-72.
- Sufian, F., & Habibullah, M. S. (2009). Bank specific and macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector. *Frontiers of Economics in China*, 4(2), 274-291. <http://dx.doi.org/10.1007/s11459-009-0016-1>
- Sufian, F., & Habibullah, M. S. (2010). Does economic freedom fosters banks' performance? Panel evidence from Malaysia. *Journal of Contemporary Accounting and Economics*, 6, 77-91. <http://dx.doi.org/10.1016/j.jcae.2010.09.003>
- Vander, V. R. (1998). *Cost and profit dynamics in financial conglomerates and universal banks in Europe*. Paper presented at the Proceedings of the Société Universitaire Européenne de Recherches Financières, Frankfurt, Germany, October 15-17.

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