Bank Specific Determinants of Profitability in Jordan

Ayman Mansour Alkhazaleh [1], Mahmoud Almsafir[2]

Graduate Business School, College of Graduate Studies,
Universiti Tenaga Nasional (Uniten), Jalan IKRAM-UNITEN,
43300 Kajang, Selangor, Malaysia
ayman.alkhazaleh@gmail.com

ABSTRACT

The performance of Jordanian banks for the past several years has remained a prominent focus of study. This study seeks to explore the effect of bank-specific determinants (bank capital structure, bank size and liquidity) on banks' profitability in Jordan. Fixed effect regression model was employed on a panel data derived from the financial statements of 14 banks from 1999 to 2013. The outcomes clarify a significant part of the variation in bank profitability and there is an indication that the capital structure of the bank, the bank size, as well as liquidity, contribute to banks' profitability; These results are suggestive of the fact that banks can improve their profitability through controlling of the bank size and capital structure, further reducing the level of liquidity. Thus, government measurements and policies in the banking system must provide the enabling circumstances that will expedite growth.

Keywords: Banks' profitability, Panel data, Jordan.

1. Introduction

The banking sector in Jordan has been considered as one of the essential economical industries, furthermore due to their higher competitive characteristics, this industry has captivated substantial attention of researchers. Banks plays a key role pushing forward the economic growth rates, through the mobilization of national savings and using them to finance productive economic sectors. Recently, significant changes have been witnessed in the work of banks in terms of quantity and quality. It is believed that this development is due to the strong and real growth rates recorded by the Jordanian economy during this period. The indices of profitability for banks have been reasonably steady during the last five years, however, was at lower levels as against the achievements of previous years, with an average return on equity of 4.8%, while the rate of return on assets 0.6% (ABJ, 2013). Jordanian banking sector remained conservative on its durability and stability, and has recorded

significant developments during the year 2013. Where the balance of licensed banks assets rose by 9% to reach 42.8 billion dinars at the end of 2013. As an extension, the Central Bank of Jordan has contributed to the significant improvements of banking sector performance during the past decades by way of following the most recent global financial practices and through the implementation of the respective roles of supervisory and regulatory. Profitability study important in evaluating wellness of the organizations, and business operations will only continue operating through making profit. Banks are businesses that aim to achieve as much as possible of profits similar the others. In this regard, the performance of the profitability of the banks points to the success of the bank management. And therefore, it is one of the most important guides for investors. However, the profitability of the banking sector is crucial as the safety of the sector is closely linked to the safety of the entire economy as in general. The foregoing seems to be in line with the concern raised by Sharma and Mani (2012) that the bank's performance has become a cause for concern to policy makers and economic planners due to the fact that the gains of the realistic sector of the economy depend on the efficiency of the banks in carrying out the function of financial intermediation. In this context, the banking sector's performance efficiency has become one of the primary objectives of financial reformation. As Saona (2011) debates, a competent financial system improves the profitability of banks by increasing the amount of funds readily available for investment, while boosting the quality of services that the customers can enjoy. Thus, the important role of banks is now prominent because, by aiding the use of external finance, they help in reconciling the financial interests of impotent economic units, by investing more than they save, with those of the surplus economic units, which in turn, save more than they invest (Ojo, 2010), thereby producing sensible income. Although some measures have been initiated by the monetary authorities (including review of prudential guidelines, banks merging and rescue strategy) to strengthen the financial system and to build confidence in the system of banking, it is still relevant for us to know what are the factors that affect the performance of the banks for control of the policy-making process in the Jordanian banking sector. Thus, the study looks into the effects of capital structure, size and liquidity on Jordanian banks' profitability. It is therefore hypothesized that, there is a significant relationship between banks' profitability and the capital structure, size and liquidity in each of the banks in Jordan. The study is considered relevant as it will seize the interest of the policy makers and the management of bank to execute the policies that potentially have long lasting positive implications all across the banking system in Jordan. The study provides some extra

knowledge for scholars and the general public about variables that contribute on the banks' profitability in Jordan. In this context, various studies have been done aiming to determine the factors that have a significant effect on profitability of banks, and further to boost the effect of positive factors and lessen the effect of negative ones. This study is adapted from a work of Vong and Chan (2006) and Athanasoglou et al., (2006), among others. Talking about the outline of the study, the work will begin with the introduction, and then there is the literature review, which is also followed by the study methodology. The results and conclusion are established in sections four and five, respectively.

2.0 Literature Review

Theoretical Issues

This study deals with some theories relating to capital structure, and the size of the bank, liquidity and profitability.Signaling theory is one of the theories which have an explanation for the association between capital structure and profitability (Trujillo-Ponce, 2012), as is also the case in both the expected bankruptcy cost and risk return hypothesis (Olweny and Shipho, 2011). The signaling hypothesis indicates that a higher capital is a positive signal to the market of the value of a bank (Ommeren, 2011). As Trujillo-Ponce (2012) notes, according signaling theory, management of bank signals good future expectation by increasing of capital. This indicates that less debt ratio necessarily mean those banks perform better than their identical (Ommeren, 2011). The signaling hypothesis and bankruptcy cost hypothesis suggest a positive relationship between capital and profitability. Furthermore, as proposed by the risk-return hypothesis higher expected profits can be achieved by increasing the risk or leverage of the firm. Thus, a negative relationship between capital and profitability is predicted (Dietrich and Wanzenrid, 2011; Ommeren, 2011; Saona, 2011; Sharma and Gounder, 2012). Big banks assumed to have more advantages as compared to their smaller rivals. They have stronger bargaining capability and it is easier for them to get benefits from specialization and from economies of scale and scope. Consequently, bigger banks expected to have more returns than smaller ones (Jónsson, 2007). Market Power (MP) and Efficiency Structure (ES) theories explain the relationship between the bank size and profitability.

Empirical Evidence In accordance with the economic theory, the higher profits are expected when there is more risky investment. Thus a direct association between risk and profitability would be predicted. Since high liquidity means less risk, it should also mean lower profitability (Vieira, 2010).

This study also contains a survey of the literature on the determinants of the profitability of banks by looking into a number of studies carried out in multiple contexts. The determinants of bank profitability can be segregated into internal factors and external factors. Internal determinates are those factors within bank control and they can be seen as factors implemented by the decisions of the management of the banks. These factors can be categorized into financial statement factors and non-financial statement variables. Non-financial statement variables, in turn, include the number of branches, their status, location and bank size. Capital structure, bank size and liquidity are some variables that tend to win the most attention in the literature when it comes to evaluating the operating performance.

Naceur (2003) probes into the Tunisian banks' determinants of profitability over the time frame of 1980-2000. It is summed up by the author that the stock market development, capital ratio and loans and have positive impact on profitability while the bank size leaves a negative impact. Eventually, macro-economic indicators for instance growth rates and inflation are found to have no influence on profitability. Hassan and Bashir (2003) take a closer look on the impact of the bank properties on the performance of Islamic banks all over the world during 1994-2001. The authors offer a conclusion that profitability measures give a positive response to increases in the capital ratio and negative responses to loan ratios. The results highlight the importance of customer and short-term funding, overhead in the promotion of profits, and non-interest earning assets. The total assets have a negative impact on profitability while liabilities over total assets ratio are discovered to have a significant positive impact on profitability. In a similar way, Haron (2004) investigated the determinants of the performance of Islamic banks in Singapore. It is found out that the capital ratio and the market share have negative impact while liquidity, expenditures, the money supply and the levels of interest rates do have impact on profitability that is the exact opposite. Various deposits have also been proven to have jumbled impact on profitability. Haron and Azmi (2004) also examined the determinants of Islamic Banks across several countries via various time series techniques of cointegration and error-correction mechanism (ECM). The study concludes that capital structure, market share and bank size have zero impact while liquidity, deposit, asset structure, total expenditures, consumer price index and money supply do have a significant effect on performance. Kosmidou et al. (2006) examine the impact of bank-specific characteristics, financial market structure and macroeconomic conditions on the profits of UK-owned commercial banks over the period 1995-2002. The results have illustrated that important factors include the efficient management of expenditures and the

size of the bank while the strength of the capital of these banks has a positive impact on profitability. In Tunisia, Naceur and Goaied (2008) found a positive association between capital and net interest margin or profitability, but indicated that the bank size has negative effect on profitability, which means that banks in Tunisia are operating above their optimal level. To look at China as another setting, Sufian and Habibullah (2009) revisit the Chinese banking sector from 2000-2005, trying to study how statistically significant variables like capitalization, liquidity and credit risk are to affect the performance of the Chinese banks. The findings reveal that these factors do not have the same impacts throughout all bank types. However, while liquidity, credit risk, and capitalization have shown to leave a negative impact to the cost, these variables have positive effects on the profitability of owned commercial banks (SOCBS). Additionally, the researchers have found that the impact of economic growth is still positive and there was no change taking place resulting from the determinant variables. Flamini, McDonald and Schumacher (2009) used a sample of 389 banks to examine the bank's profitability in 41 Sub-Saharan African (SSA) countries. The study indicated that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. The outcomes also stated that bank profits are affected by macroeconomic variables. Saona (2011) studied the banks' profitability determinants in the US over the time 1995-2007. The empirical analysis combined 100 macroeconomic (exogenous) and bank specific (endogenous) variables using the GMM system estimator. The study discovers a negative link between the capital ratio and the profitability, which supports the idea that banks are operating a tad too cautiously and ignoring potentially profitable trading opportunities. Olweny and Shipho (2011) assessed the effects of banking sectorial-factors on the performance of 38 commercial banks in Kenya, using panel data over the time period from 2002 to 2008. It is concluded in this work that the bank-specific factors are the more significant factors determining the profitability than the market factors. To elaborate on how macroeconomic factors and bank specific affect the profitability of 372 commercial banks over two decades time (from1990 to 2009), Dietrich and Wanzenried (2011) exercised their efforts to examine the determinants profitability prior to, and during, the turmoil in Switzerland. The results have revealed that there is a great difference in profitability among the banks, and that difference was caused by a set of factors prevalent in the analysis. The researchers form a conclusion that bank profitability depends on growth of total loans, funding costs, operational efficiency and business model. Resulting from this, they propose and explain that the efficiency of the bank should increase, and higher

profitability should be gained as they depend on the average loan volume. In the meantime, the higher funding costs were found to adversely affect the banking profitability. Furthermore, the interest income was also suggested to have a significant impact on profitability. Evidently, from the study, it is learned that the ownership plays a key role in the determination of profitability. Despite this, in the period from 2007 to 2009 during the financial crisis, the analysis of the data provides the indication that the financial crisis leaves some significant impacts on both the bank profitability and Swiss banking industry in general. The findings of Scott and Arias (2011) on determinants of profitability of the US top five banks show that determinants of profitability for the banking industry include size, annual percentage changes in the external per capita income and capital to asset ratio.

Macit (2011) examined the macroeconomic and bank specific determinants of profitability in the participating banks in Turkey using ROE and the ROA. The findings continue to state that for the bank specific determinants of profitability, the ratio of non-performing loans to total loans carries a significant adverse effect on profitability. This is harmonious with the study by Davydenko (2010) in the Ukraine. Macit (2011) also finds that the log of real assets has a significant direct effect on profitability. To add, in his research on the profitability of bank in Korea, Sufian (2011) employed the panel data of 10 banks from 1997 -2004 to look for the effect of macroeconomic and bank-specific determinants on profitability. The outcomes reveal that although the liquidity level was low in the Korean banks, profitability was quite the opposite in the banking sector. This case was implied to be related to the diversification of income sources. It has been established from the empirical analysis that both overhead cost and credit risk have a negative signal for Korean banks' profitability even if we have a sense of control over the macroeconomic. By looking at 10 banks financial statement forms during 2002-2010, Alpers (2011) found the bank profitability is negatively affected by the size of credit portfolio and loan. It is also indicated that non – interest income and the bank size have a significant and positive effect on the bank profitability. Moreover, it was indicated from this study that only the macroeconomic variables proved to be of great effects. Ali, Akhtar and Ahmed's (2011) examined the profitability of the public and private commercial banks of Pakistan during the time from 2005 to 2009. The study used the return on assets (ROA) and returns on equity (ROE) to identify the influence of macroeconomic factors on banks profitability. However, the outcomes pointed that economic growth and the efficient asset management has a direct and significant relation with profitability in both, while the credit risk and capitalization have inverse association with profitability measurement by ROA.

Moreover, The GDP has significant and positive effect by taking both ROA and ROE. Ani et al. (2012) established that asset composition and capital positively affect bank profitability, but, size of bank has an effect that is contrary on the profitability in Nigeria. Azam and Siddiqui (2012) compared the profitability of 36 domestic and foreign banks operating in the Pakistan during the period 2004 - 2010 on quarterly basis. This study shows that foreign banks are more profitable than all domestic banks regardless of their ownership structure. The study also found that domestic and foreign banks have different profitability determinants. Outcomes indicate that domestic banks are more affected by the macroeconomic factors than foreign banks and they have a lower profitability margin. To examine impact of bank capital on profitability and risk, Lee and Hsieh (2012) utilized panel data of 2,276 banks for 42 Asian countries during the period 1994 - 2008. The findings showed that there was a significant direct association between the bank capital and the risk of profit. Using panel data techniques of fixed effects estimation and generalized method of moments (GMM), Sharma and Gounder (2012) examined the determinants of profitability of deposit–taking institutions in Fiji during the period 2000–2010. The study found that market power is an important determinant of profitability. Riaz (2013) looked into the impact of the macroeconomic and bank specific variables on the profitability of commercial banks in Pakistan in the time span of 2006 - 2010. When ROA serves as a dependent variable, he asserts that the interest rate alongside the credit risk has a remarkable influence on the banks' profitability. In 1929 banks for 40 emerging and advanced economies during 1999–2008, Mirzaei et al. (2013) empirically tested the effects of market structure on profitability by incorporating the traditional structure – conduct – performance (SCP) and relative-market-power (RMP) hypotheses. The study observe that a greater market share leads to higher bank profitability being biased toward the RMP hypothesis in advanced economies, yet neither of the hypotheses is supported for profitability in emerging economies. However, the RMP seems to perform a stabilizing effect in both economies. Evidence also highlights that an increased interest-margin revenues in a less competitive environment for emerging markets will increase profitability and stability. Roman and Danuletiu (2013) aimed to test the variables that have an influence on profitability of Romanian commercial banks during 2003 to 2011. The findings show that Romanian banks' profitability is influenced by both changes in the external environment and bank-specific factors. Among external factors, it turns out that economic growth rate and banking concentration have an important impact on profitability. In the case of bank-specific factors, the outcomes reflect that bank profitability is

significantly influenced by banking liquidity, asset quality and management quality. Makkar and Singh (2013) studied the financial performance of 37 Indian commercial banks (22 public sector banks and 15 private sector banks) over the period from 2006-07 to 2010-11. The study revealed significant difference in the earning capacity, capital adequacy, and asset quality of public and private sector banks. Moreover, of the two different banking groups it is indicated no significant difference in liquidity position, the management and sensitivity to market risk. It was concluded that on an average, there was no statistically significant difference in the financial performance of the public and private sector banks in India. Utilizing panel data from 195 banks between the years 2005-2010, Yilmaz (2013) aimed to analyze the determinants of profitability of banks in Turkey as well as in eight different emerging countries. The outcomes indicated that operating expenses management, capitalization, credit risk, bank size and inflation are important determinants for both return on asset and net-interest margin dependent variables. The empirical findings proposed that for the permanence, there should be a strong capital structure in the sector. Lipunga (2014) attempted to evaluate the profitability of listed commercial banks in developing countries focusing on Malawi over the period 2009 - 2012 employing correlation and multivariate regression analysis. The findings indicate that bank size, liquidity and management efficiency have a significant impact on ROA where capital adequacy has insignificant effect. Results also suggest that liquidity is found to have insignificant influence on Earnings yield where bank size, capital adequacy and management efficiency significantly influenced the earnings yield. Putranto et al. (2014) examined the determinants of bank profitability. The sample used is a panel data of 25 publicly traded Indonesian commercial banks over the period 2007-2012 period. The effect of CAR found to be negative towards profitability. Moreover, Loan to Deposit ratio and Market Share of Credit, contrary to common sense, also demonstrated a negative effect, which may cause by the global financial turmoil. Lastly, the study also found that Inflation positively affect profitability. Dawood (2014) aimed to evaluate the profitability of the 23 commercial banks operating in Pakistan over the period of 2009 to 2012. This study used the ordinary least square (OLS) method. The empirical findings stated that cost efficiency, liquidity and capital adequacy are those variables in the check of management that decide the profitability. Other variables like deposits and size of the bank did not demonstrate any impact on Profitability. Saeed (2014) examined the effect of bank-specific, industry - specific, and macroeconomic variables on profitability of 73 UK commercial banks before, during, and after the financial crisis of 2008 and over the period from 2006 to 2012. The

outcomes concluded that GDP and inflation rate have negative impact on ROA and ROE while bank size, capital ratio, loan, deposits, liquidity, and interest rate have positive impact. Tariq et al. (2014) studied the influence of determinants on the performance of commercial banks in Pakistan during the period from 2004-2010. Result indicates that inflation and NIGI affects the bank's profitability inversely while the capital strength of a bank is utmost significance in affecting its performance, as a well - capitalized bank is observed to be less risky and such edge lead to high profitability. Bank size indicates direct association with profitability as large banks earn more profit instead of small banks and the assets quality affects the performance of the banks positively. Alrashdan (2002) investigated the determinants of banks profitability in Jordan during the time from1985 to 1999. The study finds out that the return on asset (ROA) is negatively related to leverage and cost of interest while ROA is positively related to liquidity and total assets. In the end, the authors come to an insignificant association between interest rate risk and ROA. Al-Jarrah (2010) seeks to investigate the determinants of the banks' profitability in Jordan during the period 2000-2006 by using the co-integration and error correction models. Findings gather that the most crucial internal determinants of the profitability of banks are the deposit ratio, loans to total assets ratio, the capital structure, the operating expenditures ratio and non-operating expenditures ratio. Conversely, inflation and money supply turn out to be the most significant external determinants. In a similar study, AL- Smadi (2010 examined determinants of banks profitability (bank specific, macroeconomics, and credit risk) using a data panel for 23 Jordanian banks from 1995 to 2008. The findings indicated that the higher risk index level of the banking sector indicated a strong capital and profit relative to the volatility of their return. The outcomes also showed that the net income has a positive relationship with the profitability. Khrawish (2011) evaluated the profitability of Jordanian commercial bank over the time period 2000 to 2010, and compartmentalizes the factors that affect profitability into internal and external factors. The outcomes find that there is the existent significant and negative relationship between ROA of the commercial banks and inflation rate and annual growth rate for gross domestic product and that there is a significant and positive relationship between return on asset (ROA) and total liabilities/ total assets, the bank size, total equity/ total assets, exchange rate and net interest margin of the banks. In the same study cornea, Ramadan and Kaddumi (2011) have looked into the association between the profitability of Jordanian banks and the internal and external factors, based on 100 observations for 10 banks during the period 2001-2010. The results point to the fact that there is a significant difference

in bank profitability. Similarly, there is the disclosure that the high capital ratio was seen to affect the banking profit in a significant way. The study offers a conclusion that the lending activities of banks in Jordan were greatly connected to the maximization of the banking profit; consequently, it is proposed that the loan size should be determined reasonably as to shield the liquidity of the bank. Furthermore, credit risk was indicated to have a significant adverse effect on the profitability of Jordan banking in the time the study was carried out; therefore, any increase in the credit risk will impact the banking profitability. In an interesting way, the study indicates that the Jordan banking sector can be made to improve, determined by the efficiency of cost management which has a momentous effect on profitability of banks. By using the DuPont system of financial analysis which is based on analysis of return on equity model, Almazari (2012) measured the performance of the Jordanian Arab commercial bank over the period 2000-2009. The findings showed that the financial performance of Arab Bank was relatively steady. Net profit margin and total asset turnover exhibited relative stability for the period from 2001 to 2009. The equity multiplier also reflected stability for the period from 2001-2005 and the ratios declined from 2006-2009 which indicates the bank relied less on debt to finance its assets. By the 2005-2011 financial reports of 15 Jordanian banks listed at Amman Stock Exchange (ASE), Al Nimer (2013) examined the impact of liquidity on Jordanian banks profitability through return on assets. The findings indicated that there is significant impact of independent variable quick ratio on dependent variable return on asset (ROA). That means profitability through return on assets (ROA) in Jordanian banks is significantly influenced by liquidity through quick ratio. The literature that has been reviewed has shed light on the consistency of some of the (bank-specific factors for instance capital structure, size and liquidity in determining bank profitability across different work economies. In effect, the review suggests that return on assets (ROA) and return on equity (ROE) are the most common criteria employed by most researchers as measurement of profitability. A rummage in the literature on the banks' profitability also highlights the fact that there is only little empirical research, using number of banks and/or economic factors that is based on Jordan. Thus, this current work can add to the literature by empirically re-confirming (or otherwise) the outcomes of the previous works, especially concerning the situations in Jordan.

3.0 Methodology

Data Collection

The panel data for the study were derived from the annual reports published of 14 banks as of 2013. The cross-sectional part is reflected by the varying Jordanian banks and the time series element is shown in the study timeframe (1999 −2013). As Saona (2011) notes, the main feature of using panel data is that it permits overcoming the constant, unobservable and heterogeneous characteristics of banks which are focused in the study.

Description of Variables

      - Dependent Variable: Scholars have also used a variety of measures for profitability to determine the factors that may play part on banks' performance. For instance, Flamini et al. (2009); Scott and Arias (2011); Oladele et al. (2012); and Babalola (2012) used return on assets as a measure of profitability.

The return on assets (ROA) is defined a financial ratio used to calculate the relationship of earnings to total assets. ROA is perceived as the best and excessively adopted indicator of profitability and earnings supplemented by return on equity (ROE) and return on deposits (ROD) (Jahan, 2012). Studies have provided evidence that ROA assesses the extent to which a bank is efficient enough in managing its expenses and revenues, and also mirrors the management's ability to generate profits using the available real and financial assets.

In this study, Profitability is proxied as of Return on Assets (ROA) calculated as EBIT over total assets.ROA is contemplated to be the key proxy for profitability, instead of the alternative return on equity (ROE), because an analysis of ROE does not regard the associated risks and the financial leverage (Flamini et al., 2009).

      - Independent Variables: Most works on profitability of bank have classified the determinants of profitability into external and internal factors (Rasiah, 2010b; Naceur and Omran, 2011; and Khrawish, 2011). Sastrossuwito and Suzuki (2012) refer to the external factors as the macroeconomic as determinants, whereas the internal factors refer to the bank-specific determinants of profitability.

Capital Structure: Capital points to the amount of own funds available to support a bank. Past literature has established that the relationship between capital and profitable can be unexpected (Sharma and Gounder, 2011). This is owing to the fact that while positive relationship has been found by some studies such as Aljarah et al. (2010); Ommeren, 2011; and Rao and Lakew, 2012), other studies discover that there exists a negative relationship

between capital and profitability (Saona, 2011; Ali et al., 2011). Moreover, Haron and Azmi (2004) deduce that the capital structure carries no influence on profitability. Staikouras and Wood (2004) contend that a positive or negative coefficient estimate for capital indicates an efficient or inefficient management of the capital structure of banks.

Bank Size: It is a fact that bank size is accountable for the economies or diseconomies of scale (Naceur and Goaied, 2008). The variable is measured as the natural logarithm of total assets (Saona, 2011). If an industry has to depend on the economies of scale, larger banks would be more efficient and they could provide service which is more sensible in price (Rasiah, 2010a). Also, the theory of the banking firm maintains that a firm enjoys economies of scale up to a level, and then diseconomies of scale set in. This hints at the fact that profitability increases with the increase in size, and decreases when there is decreasing of scale. Thus, literature further present the idea that the association between the size of bank and profitability can either be positive or negative (Staikouras and Wood, 2004; Athanasoglou et al., 2005; Flamini et al., 2009; Dietrich and Wanzenrid, 2011; Naceur and Omran, 2011).

Liquidity: Two common ways to measure accounting liquidity are included the current ratio, quick ratio and operating cash flow ratio, also its use for the purpose of measuring the ability of the liquidity of bank to cover short-term debts. The quick ratio, on the other hand, is a measure of the liquidity of your business, it gauges the level of all assets that can be quickly converted into cash and used to cover short term liabilities. Different studies have resorted to different proxies for liquidity including Bashir (2001), Hassan and Bashir (2003), and Alkassim (2005) where they found that the liquidity ratio has a significant impact on various measures of profitability. In another cornea as in China, Sufian and Habibullah (2009) look back into the Chinese banking sector and make a revelation that liquidity factor does have some positive effects on the profitability. In this study, liquidity is proxied in term of quick ratio.

Method of Analysis

The paper adopts analysis of both descriptive and econometric approaches. The descriptive approach serves to probe into the means and it further shows the normality of the distribution. An estimation of the correlation coefficients of the variables was carried out to ascertain the explanatory variables that would finally establish themselves in the regression model.

The econometric model explores into the main variables affecting profitability in Jordan by employing the fixed effects model. The outcomes of the fixed effects would be drawn in

comparison to that derived from the random effects using the Hausman (1978) specification test. The model specification is based on the empirical works offered by Athanasoglou et al. (2005), Flamini et al. (2009) and Saona (2011). Three explanatory variables are included in the analysis. The empirical model adopts the following form:

$$ROA_{it} = \alpha + \sum_{K=1}^{K} \beta k Y^k_{it} + \varepsilon_{it} \tag{1}$$

$$\varepsilon_{it} = v_i + u_{it} \, ,$$

Where ROA it is the return on asset and represents the profitability of bank i at time t, with i = 1, 2... N, t = 1, 2... T, α is a constant term, Y_{it} is a factor of k explanatory variables and ε_{it} is the disturbance with v_i the unobserved bank specific effect and u_{it} the idiosyncratic error.

The bank-specific (internal) control variables (Y^k_{it}) are ratio of total liabilities to total assets (capital structure), bank size (natural log of total assets) and liquidity (quick ratio).

The determinants coefficient measures the degree of association among the variables. The statistic would be able to highlight the percentage of total diversity in dependent variable justified by the independent variables.

Results Analysis

Results of the Descriptive Statistics

Table 1 presents the results of the descriptive statistics of both the dependent and independent variables for the panel data analysis of the study.

Table 1: Descriptive statistics

Variable	Mean	Std. Dev.	Minimum	Maximum	P10	P25	P50	P75	P90
Profitability	.0181361	.0096293	-.0008455	.0458077	.0061835	.0104258	.0194776	.0252702	.028553
Liquidity	.4598469	.1498049	.19	1.66	. 29	.355	.46	.54	.61
Capital Structure	.8837471	.0724211	.3107444	1.313546	.8246678	.8480393	.8828993	.9116526	.939696
Size	8.989644	.5358187	7.727421	10.38985	8.415875	8.61024	8.944589	9.271232	9.70071

From the results in Table 1, the analysis of the means shows the following descriptive statistics: profitability (M = 0.018, SD = 0.010); liquidity (M = 0.460, SD = 0.150); capital structure (M = 0.884, SD = 0.724); bank size (M = 8.990, SD = 0.536).

The analysis indicates that the bank size has the highest means (M = 8.990), with the deviation from the mean at 53.6%. The lowest standard deviation for profitability (0.010) indicates that the data are clustered around the mean and thus more reliable.

Discussions of Econometric Results

Pearson's Correlation matrix shows what type of relationship exists between two variables. Correlation explains change in one variable because of the change in other variable. If a significant correlation is found between predictors, it can cause the multicollinearity, which can manipulate results. There is a cut point of correlation (0.6) and beyond this point multicollinearity exists (categorization of Dancey and Reidy (2004)). However, if there is a correlation above 0.6 (the cut point) but this relation is insignificant, it means that variables are free from multicollinearity. Table 2 below presents the results of the correlation analysis for the study in order to determine the level of association among the variables.

Table 2: The correlation of variables

Variable	Profitability	Liquidity	Capital Structure	Size
Profitability	1.0000			
Liquidity	-0.1717	1.0000		
	0.1551			
Capital Structure	-0.4134	0.1568	1.0000	
	0.0001	0.0282		
Size	-0.2290	-0.1524	-0.1689	1.0000
	0.0411	0.0330	0.0114	

Banks profitability has inverse correlation with the three explanatory variables of the study, but correlation value is below from cut point. Liquidity has significant inverse correlation with the variable size and significant direct correlation with capital structure. Moreover, capital structure has significant inverse correlation with the size.

It is clear from the above discussion that all the predictors of model are free from multicollinearity and the level of significance among predictors is not up to the mark which will cause multicollinearity and manipulate results of estimated model. The results of the correlated random effects - Hausman test, work to decide between random or fixed effects, implying that the fixed effects model is more appropriate ($Chi^2 = 0.0001$).

Table 3: The regression results lean on the fixed effects model

Profitability	Coefficients	Std. Err	t	P>|t|	[95% Conf. Interval]	
Liquidity	-.0097174	.0118792	-0.82	0.416	-.0334637	.0140288
Capital Structure	-.2437671	.0470006	-5.19	0.000	-.3377199	-.1498143
Size	-.0293418	.0076014	-3.86	0.000	-.0445368	-.0141467
Constant	.5068526	.0996527	5.09	0.000	.3076498	.7060554

sigma_u	.01718557					
sigma_e	.00790682					
Rho	.82530191 (fraction of variance due to u_i)					
F test	that all u_i=0: F(4, 62) = 4.78 Prob > F = 0.0020					

From the results, the coefficients of fixed effects of the regressors suggest just how far the profitability changes when there is a change in the liquidity of each bank, capital structure and bank size. From Table 3, the overall regression is statistically significant, Wald $Chi^2(3) = 26.31$, $Prob > Chi^2 = 0.0000$, thus agreeing with the fact that liquidity, capital structure and bank size are crucial factors in determining the degree of profitability of Jordanian banks.

Liquidity through quick ratio has a significant negative effect on Jordanian banks profitability through the return on asset (ROA). Thus, a bank needs to keep enough liquidity so that liquidity can determine the profits of banks. It makes sense because if we find the ratio is positive, that signifies the banking sector in Jordan did not declare a dividend to shareholders. Liquidity and profitability are intertwined because as one increases the other decreases. The results have been found to be consistent with those by Al Nimer et al. (2013).

The correlation between profitability and capital structure is negative and also statistically significant. The results suggest that the banks with larger capital structure are not able to expand their business operations by making stronger their ability to assume risk and attract funds at low cost. Berger (1995) and Saona (2011) attribute the two possible elucidations for the negative association between the bank's profitability and the capital ratios to the expected the signaling hypothesis and bankruptcy costs hypothesis.

Size of bank carries a negative statistically significant effect on banks' profitability (ROA). The outcomes also signalize that banks are likely to gain fewer profits in comparison to small banks. The negative relationship suggests that, as the banks are becoming very large, the bureaucratic and routine procedures have affected their performances negatively. Thus, policy creators should be careful and cautious and take the trouble to understand, as Shih (2003) debates, that the highly rated efforts of banks' merging operations are not automatic, and that returns from the merger of banks are more likely to be negative than positive. The results have complied with the works of Staikouras and Wood (2004) and Ani et al. (2012) that growing banks may face lessening marginal returns which will lead to the declining of average profits with size.

4.0 Conclusion

The study examines the effects of liquidity, capital structure and size in Jordanian banks. These factors that affect banks' profitability were classified as bank-specific variables (liquidity, capital structure and size).

Various sources of empirical and theoretical reviews were adopted to lend support to the relationship between profitability and each of its determinants. The theories also include the expected bankruptcy cost hypothesis, signaling theory, market power and efficiency structures hypotheses, risk-return hypothesis. The econometric approach of fixed effects regression was applied for the study, with the adoption of a panel data of 14 banks in Jordan the period from 1999 to 2013.

The results have established some earlier findings that the capital structure and size have significant negative effects on banks' profitability in Jordan while bank liquidity has insignificant negative effect. The results imply that the decrease of liquidity, leverage and size of bank contributes to better profitability of banks. These outcomes provide some crucial implications for the development and survival of banks. Such empirical analysis is proposed to add valuable information to the literature about the banking sector in a different context. However, it is expected that the study will steer the bank regulators and policy makers into the right implementation and formulation of macroeconomic policies, which may make the banking system in Jordan more stable.

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