EVALUATING PERFORMANCE OF COMMERCIAL BANKS: AN EMPIRICAL STUDY IN JORDAN

(2004-2008)

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EVALUATING PERFORMANCE OF COMMERCIAL BANKS: AN EMPIRICAL STUDY IN JORDAN

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ABSTRACT

Banks are one of the important financial intermediaries in the financial system in Jordan. this study examined the performance of banking sector in Jordan based on the sample of thirteen Jordanian commercial banks, using CAMEL ratios as dependent variable, ROA and ROE as independent variables to indicate on the banks performance. The study reveals that Jordanian banks performance represented by the thirteen banks sample of this study was influenced by all The Independent Variables represented by CAMEL ratios. These ratios are capital adequacy (CA), assets quality (AQ), management (MNG) and earnings (ERN) according to their influence on ROA and ROE.

Dedication

My lovely great beloved grandfather sheikh Abdulqader Hamed Al-freahat
May Allah bless his soul

Declaration

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KHALED ISSA ABEDALQADER ALFREAHAT

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CHAPTER ONE

BACKGROUND

1.0   Introduction

Rybczynski (1997) argued that financial systems evolve through time, passing through three phases. Phase one is bank oriented, where most external finance is raised through bank loans, which in turn is funded through savings. Banks are the most important financial intermediaries in the financial system, and interest income is the main source of revenue. Phase two is market oriented. Households and institutional investors begin to hold more securities and equity, and non-bank financial institutions may offer near-bank products, such as money market accounts. Banks themselves reduce their dependence on the traditional intermediary function, increasing their off-balance sheet activities, including proprietary trading, underwriting and asset management. The market or securitized phase is established when the financial markets are the source of external finance for both the financial and non-financial sectors. Corporate bank loans are largely replaced by corporate bonds and commercial paper; mortgages and consumer credit originate in banks but are securitized. In this third phase, trading, underwriting, advising and asset management activities become more important for banks than the traditional core banking functions. With this gradual change in their functions, nowadays many banks became investment banks.

The banking sector in Jordan is one of the most important sectors in the economy. Banks provide capital for industry, construction and trade. The banks are also

[1]

the most heavily traded securities on the Amman Financial Market (AFM). Therefore, analysis of bank efficiency is important from the point of view of investors, creditors and the government. It is also important from the point of view of the bank's management, so they can measure their own bank's performance and compare it against other banks.

Since the signing of the World Trade Agreement, Jordanian's banks have become more conscious about the possibility of incoming foreign competition. With a limited market as the Jordanian's market, less efficient banks will be driven out of the market if nothing is being done about improving performance efficiency of their operation.

The Jordanian's institutions act of 1971, has defined the bank as an institution permitted to perform the banking business, specially accepting deposits and invest these deposits with other resources either by providing loans or any way permitted by the law. This definition implies that we can understand the importance of the performance management in banks. Currently 25 banks are listed in the Amman Stock Exchange. They vary between commercial, industrial development and Islamic banks. Generally speaking, banks do offer almost the same services with minor variations except for Industrial Development and Islamic Bank.

1.1   Overview of Economy in Jordan [1]

Jordan is a small Arab country with insufficient supplies of water and other natural resources such as oil and coal. Until the 1950s the economy was underwritten

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[1] http://www.nationsencyclopedia.com/economies/Asia-and-the-Pacific/Jordan-OVERVIEW-OF-ECONOMY.html

[2]

mostly by Britain, and in 1967 foreign aid still represented 60 percent of government revenues. The most important event for the Jordanian economy since the end of the World War II was the quadrupling of world oil prices in October 1973. Although Jordan has nearly no oil itself, it became inextricably linked to other economies in the region. Between 1973 and 1981 the Arab budget (the sum of all Arab governments' budgets) rose more than 16 fold, from US$71.8 million to US$1.179 billion, and during the same period.

Jordanian exports rose almost 13 fold from US$57.6 million to US$734.9 million. In addition, Jordan sent many doctors, scientists, engineers, construction workers, and teachers to the Persian Gulf. These wealthy professionals sent home remittances of more than $US1 billion between 1973 and 1981. Even after deducting the dinars flowing out of the country from the 125,000 foreigners working in unskilled jobs, the net remittances rose from US$15 million in 1970 to US$900 million in 1981. During this oil boom, Jordan's annual real GDP growth averaged 10 percent.

This rapid economic growth combined with the increase in oil prices also caused prices and import bills to rise. When world oil prices crashed in the early 1980s, reductions in both Arab aid and worker remittances slowed real economic growth to an average of roughly 2 percent per year. Imports (mainly oil, capital goods, consumer durables, and food) outstripped exports with the difference mostly covered by aid and borrowing. The Jordanian government was immediately forced to downsize the public sector, stop construction projects, and cut subsidies.

[3]

In mid 1989 the Jordanian government embarked upon debt rescheduling discussions and agreed to accept an International Monetary Fund (IMF) structural adjustment program, a lending program designed to correct economies problems. Such programs usually involve devaluing the currency, reducing government spending, lowering the budget deficit, and implementing broad structural reforms. The Gulf War crisis, which began in August 1990, however, aggravated Jordan's already serious economic problems, forcing the government to shelve the IMF program, stop most debt payments, and suspend rescheduling negotiations. Aid from Gulf Arab states, worker remittances, and trade all contracted while refugees flooded into the country, producing serious balance of payments problems. Jordan had to increase its imports, which pushed the trade imbalance further into deficit. This action stunted GDP growth and strained government resources.

The economy of Jordan rebounded in 1992, largely due to the influx of capital repatriated by workers returning from the Gulf, but the recovery was uneven throughout 1994 and 1995. Jordanian government is currently implementing a reform program adopted in 1992 and continues to secure rescheduling and write-offs of its heavy foreign debt, which amounted to US$8.4billion in 2000. A new IMF package was approved in April 1999 that entitled Jordan to funds worth US$174million over 3 years. The U.S. Agency for International Development (USAID) agreed to an economic assistance program for Jordan in 1999 that amounted to $150 million. However, debt, poverty, and

unemployment (which stood officially at 15.5 percent in 1999) remain Jordan's biggest ongoing problems.

1.2 Jordanian Economic Performance and Prospects for 2008 and 2009[2]

Despite high oil prices and ongoing instability in the region Jordanian economy continues to perform reasonably well, due to these improvements:

1.   The economy was able to achieve an average of 6% growth in real GDP over the last seven years, 5.3% in the first quarter of 2008. Figure 1 illustrates how the economy was able to achieve the average.

Figure 1.1: Real GDP Growth Rate
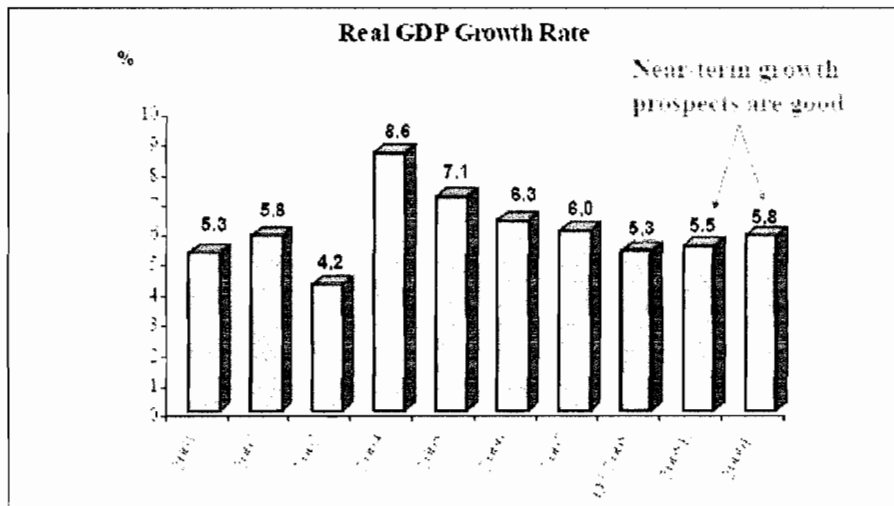
Source: according to Toukan, 2008

Figure 1.1 shows that Jordanian GDP growth has improved noticeably, reaching its peak of 8.6% in financial year 2004 when the instability in the middle east region -due to the gulf war- has been of benefit to the Jordan economic growth. 3 years after, the

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[2] Toukan., (2008). Jordanian Economic Performance and Prospects for 2008 and 2009, Governor of the Central Bank of Jordan

consequential effects started to diminish again due to the stability of political situations that started to drive the GDP back again to its original ratios until it reached its average of 5.3% in 2008, so, excluding instability that started early in 2003, the GDP is still between 5.3% and 5.8%. This GDP growth can be considered as highly sensitive and responsive towards the middle-eastern political measures.

2.   GDP growth was driven mainly by transport and communication, industry, finance and real-estate sectors.

Figure 1.2: Contribution to GDP Growth by Sector, Percentage
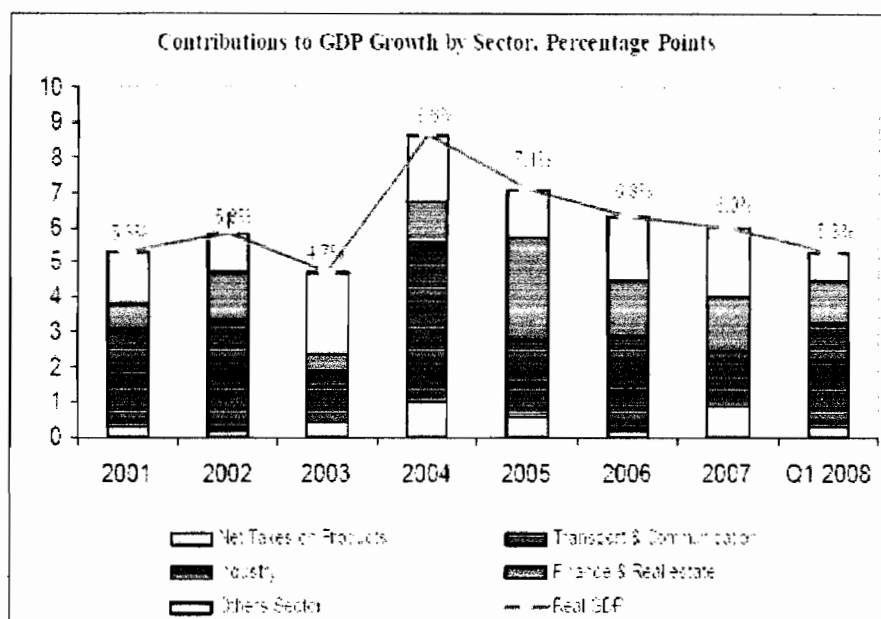
Source: according to Toukan, (2008)

Figure 1.2 shows demonstrate the ratios of contributions that mostly determine the growth of the Jordanian GDP. It shows clearly that industry sector represents the main actor that had the major effect particularly in the years 2002 and 2004 because of the enormous external reserve capitals supplied and invested in industry which caused the net

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taxes on products to be raised. Accordingly, the successful investment on industrial production improved much investment on transportation sector, with finance and real estate as the second main contributors. Other minor sectors had slight effect on the GDP.

Fiscal Performance:

The fiscal deficit has widened, with sharply higher oil and food "compensatory" and "direct" subsidies. As a result, the deficit increased in 2007 to JD615 million (5.5 % of GDP) from JD 443 million (4.4 % of GDP) in 2006. The deficit is projected to narrow gradually over the next couple of years. Figure 1.3 shows the fiscal performance.

Figure 1.3: Budget Deficit (% of GDP)
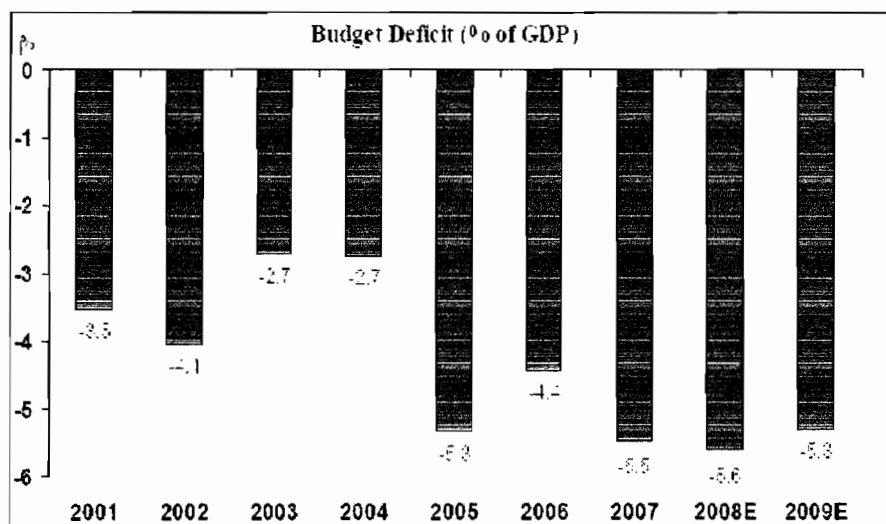
Source: according to Toukan, (2008)

Current Account Performance:

Although the current account deficit has widened to 17.7 % of GDP in 2007, a significant increase in foreign direct investment (FDI) inflows has financed the deficit. High oil prices and strong growth in capital imports suggest that the current account deficit will remain uncomfortably large at around 13.4 % of GDP over the next couple of years.

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However, financing difficulties are not expected to emerge due to anticipated inflows of

FDI. Figure 1.4 illustrates about the current account performance as a percentage of GDP.

Figure 1.4: Current account performances (% GDP)

Current Account
(°o GDP)
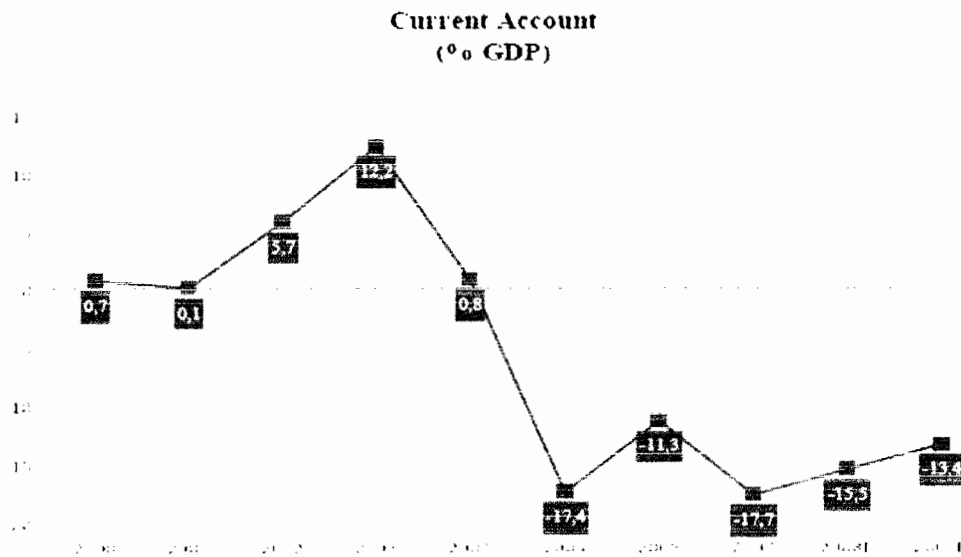
Source: according to Toukan, (2008)

study uses some of the important financial ratios in the literature. These ratios represent CAMEL measurements. To measure banks performance, return on assets (ROA) and return on equity (ROE) is used. By doing so, this study will be a good base for the bank managers, policy makers, and investors in Jordanian banking industry when they to evaluate banks.

Therefore, our supplementary objectives in this study can be listed as follows:

1. To explore the relationship between capital adequacy (CA) and the performance of Jordanian commercial banks during the study period;

2. To determine whether asset quality (AC) has affected the performance of Jordanian banks or not, during the period of the study;

3. To identify whether the management (MNG) has significantly influence the performance of commercial banks in Jordan; and

4. To examine the relationship between earnings (ERN) and performance of Jordanian banks.

1.5   Importance of the Study

Banking sector has an important role in which it influences all sectors in the Jordanian's economy. This is because banks finance a large part of investments in all economic sectors. Usually financial crises in developing countries are caused by many factors, one of such factors is weak financial and banking systems. This study attempts to extend knowledge of banks performance in addition to determine factors that affect the performance of banks in Jordan especially on CAMEL measurements. Another importance

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of the study is that the findings can provide important evidence on the factors that banks management in Jordan can concentrate in order to improve its profitability. To the policy makers or the regulators, hopefully the findings from this study can help them to come out with good policies to control the banks and make them more efficient and better managed. In view of globalization and liberalization of the banking sector worldwide, the regulators can look at areas which can make Jordanian banks more competitive relative to the foreign banks.

1.6   Research Questions

1. Is there any significant relationship between capital adequacy (CA) and commercial banks performance?

2. Is there any significant relationship between asset quality (AQ) and commercial banks performance?

3. Is there any significant relationship between management (MNG) and commercial banks performance?

4. Is there any significant relationship between earnings (ERN) and commercial banks performance?

1.7   Scope and limitation of Study

This study is confined to evaluate the performance of commercial banks in Jordan over the period from 2004 to 2008, by using yearly data. The sample consists of thirteen commercial banks which are listed in Amman financial market. Another aspect is that this

study only uses secondary data, which are mainly taken from the annual reports of the banks. There are no interviews with the banks' management.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this part of the study, I am reviewing some the important studies that have been done in the literature that is related to this study.

2.2 Roles of Commercial Banks

According to Goran Bergendahl, et al. (2008), commercial banks play an important role in the countries' economies and all over the world, through the services and facilities that they provide. First of all, we need here to define a commercial bank, which is known as a financial institution that plays an intermediary role between deficit units and surplus units, or borrows and lenders, or investors and savers, respectively.

From the definition of the commercial banks we can define their roles, which can be summarized basically as financial intermediaries between borrowers and lenders, by providing loans to the borrowers and deposits for lenders. Furthermore, commercial banks provide other services and intermediary options for public by providing different types of loans and deposit accounts for different users needs. This provides an options for borrowers and lenders that could not or difficult to set funding available for them without commercial banks. They act as as agents in money transmissions or payment process.

According to Tanbir Ahmed Choedhury (2009) commercial banks and banking system as a whole play a very important role in the economy of developing countries for

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the progress of economic development. He says that banking now is an essential part of our economic system, modern trade and commerce would almost be impossible without the availability of suitable banking services. First of all, banking promotes saving. All manner of people from the ordinary labors and workers to the rich land owners and businessmen, can keep their money safely in banks and saving centres. Secondly, banking promotes investment; banks easily invest the money they get in industry, agriculture, and trade. They either invest it directly or advance loans to other investors. Thirdly, it is most through banks that foreign trade is carried on. Whether we export or import, it is through banks that money is transferred from one country to another.

In light of the major role of the commercial bank in the economy, we can see how important it is for the economy and banks as well to manage their operations in the way that gives a better or the best possible performance, that makes the bank able play its role as an efficient intermediary and a key player for the economic for the monetary policy.

Tuuli Juurikkala, et al (2009) stated that the monetary policy can be expansionary (deflationary) monetary policy lowers (raises) money market interest rates, thereby reducing (in-creasing) borrowing costs and boosting (reducing) loan demand, investments and consumption. Moreover, banking offers several other transmission channels, including the exchange rate, asset price and credit channels. We can see here the importance of banking sector in any country's economy.

Tuuli Juurikkala, et al (2009), for the banks to achieve and maintain this role or goal they should manage their business properly by managing their liquidity, maturity, and risk

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preferences in the proper way, like checking borrower's ability to meet their loan obligations so that they can take the decision whether to give that particular loan or not, which enables them to make sure that they still making profits.

In light of the above, and as we are studying banking sector in Jordan, we find it noteworthy to provide an over view for banking sector in Jordan. According to Nedal Ahmed Al-Fayoumi, Bana M. Abuzayed (2009), financial transactions are primarily intermediated through banking sector in Jordan, banking sector in Jordan is fully privately owned, well developed, and profitable. The number of banks operating in Jordan currently stands at 25 banks, of which two are Islamic banks and eight are branches of foreign banks.

However, Ahmed Al-Fayoumi, Bana M. Abuzayed (2009) stated that, Jordanian banks carry out their operations through a network of 558 branches and 79 representative offices throughout the Kingdom. Accordingly, the index of population to the total number of operating branches was about 10.2 thousand citizens per branch at year-end 2007. On the other hand, the number of branches of the Jordanian banks operating abroad at the end of 2007 was 129 branches and 24 representative offices, of which 57 branches and 12 representative officers were operating in Palestine.

2.3   Previous Literatures on Commercial Banks Performance

As the banking sector is considered to be an important source of financing for most of the businesses. Medhat tarawneh (2006) argued that there is a common

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assumption that an increasing financial performance will lead to improved functions and activities of the banks.

However, evaluation of banks performance is an important indication for the banks users, managers, government, and all who are related to the banks, many of researches have studied banking sector and commercial banks performance from different aspects for the importance of this issue in order to stand on the determinants of commercial banks performance, how to determine these factors that helps to evaluate banks performance, and the how to classify banks according to their performance.

In his paper, Farooq, A. M. (2003), analyzed structure and performance of commercial banks in Pakistan under the framework of industrial organization. Based on key indicators of inequality, which is, Lorenz curve, Gini co-efficient, herfindahl index and concentration ratio, he found that distribution of banking business is highly skewed in Pakistan. All the main independent variables like equity, assets, deposits, advances, employment are distributed unequally among the banks performance. He argues that the finding implies an absence of competitive environment in its true sense in the industry. His results were in contradiction to the claim of the state bank of Pakistan that the banking industry has become competitive.

Analysis of performance has shown that the profitability of state-owned banks deteriorated, especially after mid 1990s. The profitability of private banks was also not impressive during 1990s. Their profitability increased initially as, they started their

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business but they were unable to sustain it in subsequent years. Farooq, A. M. (2003) found that the initial period of good performance can be attributed to clients' attraction to these banks in an expectation of high quality banking services. But later, as they suffer inconvenience, they may have refrained themselves from using the new banks. As regards to foreign banks, despite showing better asset quality, adequate capital base and sound management, they failed to retain their profitability during 1990s.

Bertrand, R, & Kevin, J, S (2003), examined the performance of Swiss banks in the period from 1996 to 1999; they used a broad definition of output, so they found an evidence of profit inefficient and large relative cost in their sample. Another definition which was narrow and focuses only on traditional activities leads to efficiency estimates that are even lower. Another evidence has been found in this paper that have were economies of scale for small and mid-size banks, but little evidence that significant scale of economies is remained for the very largest banks. They also found that the scope economy is weak in large banks that are involved in a wide variety of financial activities. In summary, their results in suggest few obvious benefits from the trend toward larger, universal banks in Switzerland.

Chowdhury, T. A. (2009), A, in this paper tried to analyze the growth and development of selected private commercial banks of Bangladesh. He found that all the selected private commercial banks are able to achieve a stable growth of branches, employees, deposits, loan and advances, net income, earnings per share during the period

2002-2006. For different activities of private commercial banks, seven trends equations have been tested. Among them the trend value of branches, employees, deposits, and net income is positive in case of all the selected banks. Square of correlation coefficient ($r2$) has also been tested for all trend equations. The $r2$ of branches, deposits and net income is more than 0.5. It indicates the prospect of private commercial banks in Bangladesh is very bright. It has been observed that the net income of the selected private commercial banks have increased from the previous year during 2003 to 2006. It is also reflected from the analysis that the EPS of all the selected commercial banks are very high during 2002 to 2006. It indicates the profitability of all the selected banks is quite satisfactory. Loans recovery rate indicated that the banks are able to manage their credit efficiently. Every year these banks open new branches and the Islamic bank Bangladesh (IBBL) has highest number of branches i.e. 176. It is observed that the classified loan of Dutch bangla bank (DBBL), dhaka bank ltd (DBL) and private bangle ltd (PBL) is very low i.e. about 2%. It seems that DBBL, DBL and PBL is able to manage credit efficiently as a result recovery is quite good.

After he controlled for loan quality, liquidity, capitalization, and output mix, Simon, H. K, (2003), per unit bank operating costs was found to vary significantly across Asian countries and over time. Further analysis revealed that the country rankings of per unit labour and physical capital costs were highly correlated, suggesting that there exist systematic differences in bank operating efficiency across Asian countries. However, this measure of operating efficiency is found to be unrelated to the degree of openness of the banking sector. Asian bank operating costs were found to decline from 1992 to 1997,

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indicating that banks were improving their operating performance over time. Since 1997, the run-up in operating costs coincided with the Asian financial crisis, suggesting that banks were incurring additional costs in dealing with their problem loans while output was declining simultaneously.

Kosmidou, K & constantin, Z (2008), evaluated the performance and efficiency of the commercial and cooperative banks in Greece for the period 2003-2004. Moreover, The Greek banks were rated based on their performance. The ranking result could be used to analyse the strengths and weaknesses of a bank compared to its competitors and it could serve as a basis for the construction of a rating system for Greek banks. The results obtained indicate that commercial banks tend to increase their accounts, to attract more customers and improve their financial services, thereby becoming more competitive and maximizing their profits. Concerning the cooperative banks in Greece, the conclusions were not so uniform, since there are banks that are enjoying considerably increased profits and market shares, and others whose financial services seem to be deteriorating, do not increase profit and market share.

Pak, H. S & Sung, K. H (1995), are using comparative financial analysis, and found that Korean banks were relatively conservative in managing operations and lending and were more actively involved in their services for international business and sales activities in SBA loans. The analysis also indicated that Korean banks' loan quality was relatively low and their loan market appears to have been saturated. They recommended on the basis of the analysis that Korean banks adopt a more active marketing strategy to

[19]

expand and create their own market, consider tighter control for their operations with understanding banking regulations (e.g., Financial Institutions Reform, Recovery, and Enforcement Act) and adopt the loan policy in a way that they can make a loan decision with more reliable cash flow analysis. This study has carried out by comparing the eight Korean banks' past five years performance results with other banks in the State of California. Other banks include Asian banks other than Korean banks owned by such Asians, and American banks owned by other ethnic groups of Americans.

Barry, W (1998) study extends the existing literature of international banking by constructing a model of foreign intermediaries in Australia. A question yet to be resolved is to establish those factors that influence in banking transactions across borders. While a variety of theories attempt to explain international banking, empirical tests are sparse. This study considers if the study to date apply in non USA setting. Foreign bank size was found to be a positive function of bank licence, parent size and time in Australia, and a negative function of Australian net interest margins and fees. Foreign bank profits were a positive function of Australian net interest margins and   fees. There was limited evidence of defensive expansion.   This study concluded that foreign bank size is explained well by the existing theories of international banking, but a wider model is appropriate for foreign bank profits.

In reviewing the factors affecting performance of foreign-owned banks in Newzealand, were, they use two sets of pooled cross-sectional time series data- seven

banks over the ten years period 1991-2000 and 8 banks over the 8 years period 1991-1998 provided the basis for the econometric analysis. The study reveals that the most important variables for the bank performance were the length of time the foreign banks had been in Newzealand and the parent bank's return on assets. This made the author suggest that parent specific ownership advantages were the dominant factor in their subsidiaries performance in NewZealand.

To test the determinants of the number of offices of foreign banks in Malaysia base on the origin country for that banks, Marashdeh, O. (2005) used a model that has been developed by Grosse and Goldberg in the year (1991). He assessed the presence of foreign banks in Malaysia and analyzed their distribution based on the country of origin. Based on the empirical results in this paper, it revealed that geographic distance and foreign direct investment in Malaysia were not related to foreign banks' presence in Malaysia. But the empirical results have indicated that size and of the banking sector in the foreign country, foreign trade with Malaysia, and the risk of the country were positively correlated with the foreign banks presence in Malaysia.

To examine how banks specific characteristics and overall bank environment affect the profitability of commercial domestic and foreign banks operating in 15 EU countries during 1995-2001, Fotios, P. & Kyriaki, K. (2007) had used bank level data. The result was that not only bank's specific characteristics but also financial market structure and macroeconomic conditions was affecting profitability of both domestic and foreign banks. Except the concentration in the case of domestic banks profits, all

[21]

variables were significant, although their impact and relation with profits was not always the same for domestic and foreign banks.

In his study, Quey, J. Y. (1996) uses financial ratios have been used as a cost efficient and convenient way to keep track of a bank's financial condition. However, when several numbers of aggregated single input-output ratios are used at one time, there is no clear-cut rationale for using one combination of ratios over any other to obtain an overall composite score. Through an empirical study of bank management in Taiwan during the 1980s, this paper demonstrated how the use of DEA in conjunction with financial ratio analysis can help to aggregate the puzzling ratios into meaningful dimensions that somehow link with the financial operating strategies of a bank.

According to Kyriaki Kosmidou, et al (2006) the of UK's banking sector in EU, is the largest single international banking sector, since more than quarter of EU's banking assets were held in UK'S banking sector. Furthermore, UK's banking sector accounts for more than 20 % of the world's cross-border lending. So, by increasing the foreign banks rapidly in UK banking sector, UK banking sector has became one of the most open banking sector over the world, with which foreign banks account for more than 55% of total assets in UK banking sector. Kyriaki Kosmidou, et al (2006) in their study a multivariate analysis was performed to identify the existing differences between the financial characteristics of domestic and foreign banks, giving a consideration to profitability, liquidity, risk, and efficiency factors, they used the data of 26 domestic and 32 foreign banks operating in the UK banking sector for the period 1998-2001, to

investigate the performance of the banking sector in the UK focusing on the performance of the domestic banks as opposed to the performance of the foreign banks operating in the UK. The results show that the capital strength of these banks has a positive and dominant influence on their profitability, the other significant factors being efficiency in expenses management and bank size. These bank-specific determinants are robust to the inclusion of additional macroeconomic and financial market measures of bank performance, which add little to the explanatory power but nevertheless appear to have positively influenced profitability.

Olena Havrylchyk, E. M. J. (2006) examined the efficiency of the Polish banking industry between 1997 and 2001. Data envelopment analysis was used to distinguish between cost, allocate, technical, pure technical, and scale efficiency. Furthermore, in this study the author had performed a number of tests to see whether domestic and foreign banks came from the same population. Also, he wanted to stand on the determinants of banks efficiency. His results indicated that bank efficiency has not improved during the years analyzed. Greenfield banks have achieved higher levels of efficiency than domestic banks. Whereas, foreign banks that acquired domestic institutions have not succeeded in enhancing their efficiency.

A sample of 219 banks from ten central and eastern Europe (CEE) countries (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, and Slovakia) was used for the purpose of empirically estimating the impact of foreign banks entry on the banks performance over the short term in CEE. The study

[23]

revealed that there was a negative relationship between the entry of foreign banks and domestic banks revenues from interest earning assets, non-interest income, and profitability. It also revealed that the overhead cost in local banks could be raised by the entry of foreign banks in the short term. This study was performed by Janek, U. (2004) and he concluded that foreign banks entry contributes in increasing the competition in the banking industry for the host country.

It is important to evaluate risk and returns in commercial banks to analyze their performance, because of the tough competitive environment in banking sectors nowadays, so the world has experienced the need of a lot of methods to do this process. Researchers have used different statistical techniques for the purpose of evaluating commercial banks performance recently. Quey, J. Y. *et al* (1996) argues that the Central Deposit Insurance Corporation of Taiwan found that financial ratios regarding capital adequacy, earnings, liquidity, liability and growth of savings deposits are useful in evaluating the economic performance and management quality of banks in Taiwan.

2.5   Previous Literatures on Banks Performance in Middle East

Ahmet, F. A (2007) attempted to give an insight about the trend in the performance of the Turkish banking sector by conducting a panel data fixed effects regression analysis. The results revealed that efficiency change is negatively related to

[24]

the number of branches. He found a positive relationship between loan ratio and the performance indices efficiency and efficiency change. Furthermore, bank capitalization was positively related to efficiency change. Interestingly however, return on equity was not statistically significant in explaining any of the efficiency measures. There was also no robust relationship between foreign ownership and efficiency. Finally, restructuring attempts in post-crises era account for the improvement in efficiency scores in recent years.

Tarawneh, M (2006) in his study, classified commercial banks in Oman in cohesive categories on the basis of their financial characteristics revealed by the financial ratios, a total of fife Omani commercial banks with more than 260 branches were financially analyzed, and simple regression was used to estimate the impact of asset management, operational efficiency, and bank size on the financial performance of these banks. The study found that the bank with higher total capital, deposits, credits, or total assets does not always mean they have better profitability performance. However, banks in Oman were ranked based on their return on equity.

Jamal, I. B & Abeer, F. KH (2008) investigated the relative efficiency pattern of Jordanian banks during the period between 1998 and 2004. The deterministic data envelopment analysis (DEA) as a quantitative approach was used to obtain the efficiency of individual commercial banks in Jordan. The results of the DEA Charnes, Cooper and Rhodes model have shown an increase in bank efficiency in the entire period except in 2003 and 2004 where a decrease in bank efficiency was shown for few banks in the

[25]

sample. The total efficiency scores suggested that the liberalisation programme has provided the anticipated efficiency gains. Most efficiency scores showed consistent increases after the introduction of the policy with the exception of few banks which have responded differently and shown decreased in efficiency. This may be taken to imply that the banks have responded differently to the new system. The analysis further shows that both assets utilisation and the labour factor had an adverse effect on bank efficiency, especially in terms of number of employees.

Nedal, A. A & Bana, M. A (2009) assesses the Jordanian banking sector within the context of the General Agreement on Trade in Services (GATS) agreement. They started this study by providing an overview of the main characteristics of Jordan's banking system to date and pursue to analyze how the Jordanian regulatory environment is developing significantly to meet the new changes in the banking sector. Consequently, they evaluated the level of compliance of the Jordanian banking sector with the rules and requisites of the GATS, present CAMEL benchmarking, carry out opportunity scan; and prepare a SWOT analysis that gives additional insight into the current strengths and weaknesses of the sector. Finally, they analyzed the constraints for the sector development and present specific recommendations for remedial action. The results indicate that Jordanian banks have expanded their operations in recent years. Credit facilities were a major and much stronger impetus for the expansion of banking sector activities. Their findings indicate that the structure of the banking sector in Jordan follows the protocol of the structural conduct of performance (SCP). Whereby, heavily capitalized banks, through few in number enjoy the better share of banking activities and

gain the largest portion of sector profits. Meanwhile, the majority of banks, which are small-to-medium capital banks, do not enjoy the benefits of the larger banks, regardless of their core operational capabilities.

CHAPTER THREE

METHODOLOGY

3.0   Introduction

According to the national credit union administration (NCUA) (2001), The CAMEL rating system is based upon an evaluation of five critical elements of a credit union's operations: capital adequacy (CA), asset quality (AQ), management (MNG), earnings (ERN) and asset/liability (deposits) management. This CAMEL rating system is designed to take into account and reflect all significant financial and operational factors examiners assess in their evaluation of a bank's performance. Banks are rated using a combination of financial ratios and examiner judgment.

In this study, financial ratios are used to analyze financial statements and to measure commercial banks performance. By performing these financial ratios we expect to identify a set of independent variables that characterize each bank. Regression will be performed using these variables and using ROA and ROE as our dependent variables. At the same time, we are going to test the relationship between dependent and independent variables with our hypothesis. Our theoretical frame work will be shown followed by our model.

Descriptive statistics, correlation between variables, and significance of the variables are performed based on the financial ratios, which will be taken from the banks financial

[28]

statement for the purpose of our bank performance analysis. The financial ratios are proxies for CAMEL measurements.

3.1   Data

For our analysis, we use financial ratios from Jordanian banks, and our data will be taken from these banks annual reports (financial statements) for each year. Any bank that did not publish its annual reports or those with no financial statement for any time in the period of 2004-2008 (which is the period of our study) will be excluded from the study.

3.2   Sample

The sample of this study comprises of thirteen (13) Jordanian commercial banks out of total population (25) commercial banks operating in Jordan. We were limited to use 13 commercial banks out of 25 because of two reasons; First of all, the unavailability of the required data in the other banks and second, these 13 banks can be used to represent the Jordanian banking sector because of their size and performance. Hereby, we would like to list our banks sample as follows: Arab Jordanian Bank, Capital Bank, Arabic Institution for Banking, Jordan Kuwait Bank, the Housing Bank, Societe Bank, Jordan Bank, Amman Cairo Bank, Jordanian Bank for Saving and Finance, Ahli bank, Jordan and Gulf bank.

3.3 Variables of the Study

3.3.1 Dependent Variables

We are using the ratios ROA and ROE for our analysis as dependent variables to measure banks performance.

1. ROA (return on assets) = net income / total assets
2. ROE (return on equity) = net income / total equity capital

ROA is an indicator of how profitable the company is relative to its total assets. ROA gives an idea as to how efficient is the management in using its assets to generate earnings. In other words, how much profit a company earns for every dollar of its assets. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment". On the other hand, ROE is the amount of net income returned as a percentage of shareholders equity. Return on equity measures a company's profitability by revealing how much profit a company generates with the money the shareholders have invested. ROE is expressed as a percentage and calculated by dividing net income by total shareholders' equity.

3.3.2 Independent variables

In our study we used the CAMEL measurements as our independent variables, which are:

1. Capital adequacy (CA)
2. Assets quality (AQ)

3. Management (MNG)

4. Earnings (ERN), and

5. Liquidity (L): this measurement has been excluded from our study according to the unavailability of its data in the annual reports of Jordanian banks for 2005 and 2006.

Our conceptual framework for the bank performance is described in the Figure 3.1. It shows the four independent variables and each of these independent variables has its own ratios. It shows also our dependent variables.

[31]

Figure 3.1: the conceptual frame work of bank performance[3] in this study

Capital
Adequacy

Asset Quality

Management

Earnings

Performance
of Banks

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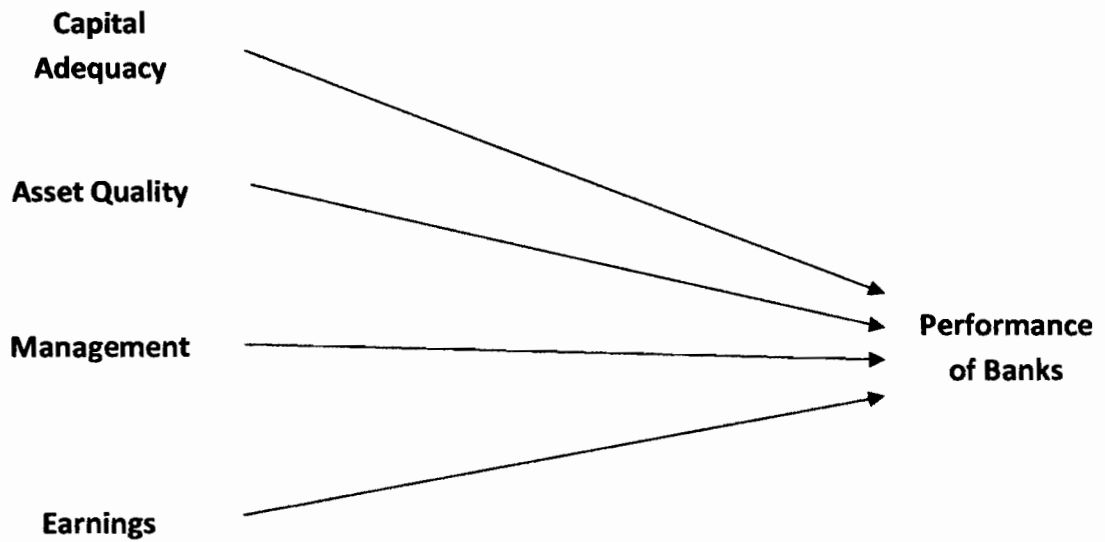
[3] In this paper, we are representing the performance of the Jordanian banks by the return on the
bank's assets (ROA), and return on equity (ROE).

A) Capital adequacy

To calculate capital, there are two types of measures for capital adequacy ratios These types are:

Tier one capital and tier two capitals. Tier one capital is made up of capital that provided by the shareholders and the retained profits represented by the accumulated profit from the banks operations, and is freely and permanently available to cover losses without obligate the bank to be to cease operations. The importance of tier one capital is that it safeguards both the survival of the bank and the stability of its financial system. On the other hand, tier two capital is the capital that provides a lower level of protection to the bank by absorbing losses only on the event of winding-up the bank. Tier two comes when tier one is been already lost, capital subordinated debts can be a good example for tier two capital, which ranks in priority behind all creditors except shareholders. In the event of a winding-up, subordinated debt holders will only be repaid if all other creditors (including depositors) have already been repaid.

In this study, capital adequacy ratio was measured related to the overall use of financial leverage in the firm (bank), in which firms with higher financial leverage is expected to face more volatility in earnings behavior than the firms with the lower financial leverage. While it indicates up to what level the institutions cover the inherent risk in its operations, the capital adequacy is defined as the overall use of financial leverage in the firm (bank)

- Shareholders' equity to total assets = tier 1/total assets

That leads us to derive the following hypothesis for this study:

H01   There is a significant relationship between Capital Adequacy ratios and Performance of the banks.

B)   Asset Quality

Asset quality ratio takes into account the performance of the assets, primarily the loans. However, asset quality involves much more than assessing trends in classified assets, delinquent loans, and credit concentrations. it (the asset quality component rating) takes into account the management's ability to underwrite and administer credits in prudent and sound manner.

The asset quality area for the directors and managers of the bank can be divided to four primarily responsibilities:

Before loans are made effective policies must be adopted.

i.   Enforce those policies as the loans were made.

ii.   After the loans are made the portfolio must be monitored.

iii.   Maintain an adequate Allowance for Loan and Lease Losses.

two financial ratios have been chosen by post scholars to evaluate asset quality; the financial ratios can be as follows:

-   Total loans divided by total assets

-   NPL to total assets

However, due to the unavailability of data, this study only uses total loans to total assets as a measurement of asset quality.

[34]

Total loans to total assets ratio is represented as a regressor in the profit function in order to stand on the effect of one of the core businesses of a bank and its profit i.e. advances and investment (Farooq, 2003). The major source of revenue for the banks is represented as interest earned in advance and investment. The level of interest earning depends on the quantity of loans and the rate of interest.

From this we come out with the following hypothesis:

H02: There is a significant relationship between Asset quality ratios and Performance of the banks.

C) Management

The quality of management plays an important role for determining banks performance in the future. The management can control or manage banks operations, it can manage the quality of the loans and it has to ensure that the bank is making profits.

Management determines the objective profitability to be done and determines the level of risk to be taken by the bank. The management quality of a bank can be measured by examining its operating efficiency, which includes productivity of employees and cost of management. Shahidur Rahman et al. (2004) stated that management quality can be measured as interest expenses divided by total loans. The following ratios have been chosen in this study in order to determine this variable:

i.   Interest expenses divided by total loans

ii. Total operating profit divided by total revenue

Based on the discussion earlier we can come out with the following hypothesis

H3) **There is a significant relationship between Management Efficiency ratios and Performance of the banks.**

D) Earnings

There are number of indicators used and can be used to evaluate and determine the way that earnings can be related to the performance of banking industry. Performance of a bank in terms of earnings and profitability reflects its ability to support present and future operations. This specifically determines the capacity to absorb losses by building an adequate capital base, to be able to finance any expansion opportunity and be satisfying shareholders by distributing enough dividends.

One of the extremely important measures of banks performance is the net interest margin (NIM) as long as it is usually 70% to85% of banks total revenue. The bigger the NIM the bette is the performance. Furthermore, a simple change in margin makes a huge impact on profitability, which means the higher our margin the higher profit we can take. Net interest margin can be calculated as follows (interest income – interest expenses / average earning assets), average earning assets include all investments, securities; funds sold, and so on, plus all loans.

Farooq (2003), after analyzing the performance of commercial banks in Pakistan.

NIM was higher in the private banks and foreign banks compared to banks owned by states in Pakistan. In this study NIM ratio is used to calculate earnings in commercial banks.

The following hypothesis can be for the earnings of commercial banks:

H04 There is a significant relationship between Earning ratios and Performance of the banks.

E)   Liquidity

The importance of liquidity comes from the need to meet the short term financial obligations and, deposit withdrawals and satisfy customer loans demand, this is faced by something called liquidity risk, this refers to that the bank might be forced to borrow short term funds or emergency loans at an excessive interest rate to cover its need of cash immediately, which leads to a reduction in banks earnings. From the previous discussion, we can include that banks needs a proper and sound liquidity management, which enable banks to avoid a higher liquidity risk, which ensures that banks can meet the immediate cash needs at the lowest cost.

Of Abdus Samad et al. (2001) mainly have examined liquidity ratio by evaluating the following ratio- cash to deposit ratio (CTD), this ratio was used in this study to study the performance of Malaysian Islamic banks during the period 1984-1997. CTD ratio also has been used by Yener Altunbas (2004) to evaluate liquidity in the study of "merger and acquisition and banks performance in Europe".

LTD (loan to deposit ratio) ratio is used to show the percentage of loan that has been given out to customer against the deposit by customer. Loan is considered as asset to the bank while deposit is a liability. Therefore the bank must balance up it loan against its deposit so as to ensure the liquidity of its asset will able to meet depositors demand. According to the unavailability of data, liquidity measure is excluded in this study.

Now, and after we have explained all of our variables, we are able to draw the table of CAMEL categories measured by the financial ratios and some of the past studies that have used the ratio

Table 3.1: independent variables

CAMEL	Ratios		
Capital Adequacy	shareholders equity / total assets	SETTA	Farooq (2003); Kithinji & Waweru (2007)
Assets Quality	total loans / total assets	TLTTA	Farooq (2003); Fauzias Mat-Nor (2005)
Management	interest expense/total loans	IETTL	Shahidur Rahman et al. (2004)
Earnings	net interest margin	NIM	Farooq (2003)

3.4   Models Fit

To identify the determinants of the performance of the Jordanian commercial banks during the period 2004-2008, in this study we have chosen a multiple regression analysis, using cross sectional data for the period 2004-2008. The regression can be written as follows:

Regression for ROA:

$$ROA = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Regression for ROE:

$$ROE = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where:

ROA	=	commercial banks' return on assets
ROE	=	commercial banks' return on equity
CA	=	SETTA – 'Shareholders Equity / Total Assets'
AQ	=	TLTTA – 'Total Loans / Total Assets'
MNG	=	IETTL – 'Interest Expense / Total Loans
ERN	=	NIM – 'Net Interest Margin'

We evaluate commercial banks performance using the five main indicators according to CAMEL ratios model. The hypothesis that had been clarified by the earliest in this chapter will be tested in the model.

CHAPTER FOUR

DATA ANALYSIS AND FINDING

4.0 Introduction

In this chapter, the results of this study on the relationship between the explanatory variables in explaining the performance of banks are discussed. The discussion is segmented into four sections. The first section provides the descriptive analysis of the data and variables for this study, followed by the second section which discusses correlation analysis that demonstrates the strength of relationship between the dependant variable and independent variables. The third section discusses the outcomes of the regression analysis and data analysis that compose the main findings of this study. The last section is the application model.

4.1 Descriptive Analysis

Figure 4.1 shows the ROE by banks in Jordan for the study period 2005 – 2008. The sample that has been taken is for four banks. Those banks divided into three categories based on assets size large, medium, and small. It can be seen in the figure that the banks' assets size have increased from the period 2005 to 2008. The banks in the largest components are Arabic bank and Ahly Jordanian bank, medium category is union Jordanian bank, and small category is Jordan and Kowait bank.

Table 4.1 shows the descriptive analysis for independent and dependant variables. The table shows that there are 13 number of valid cases or "N" for each variable. The result shows the range of mean, standard deviation, maximum and

[41]

minimum for the all variables.

Figure 4.1 ROE by banks in Jordan for the study period 2005 – 2008
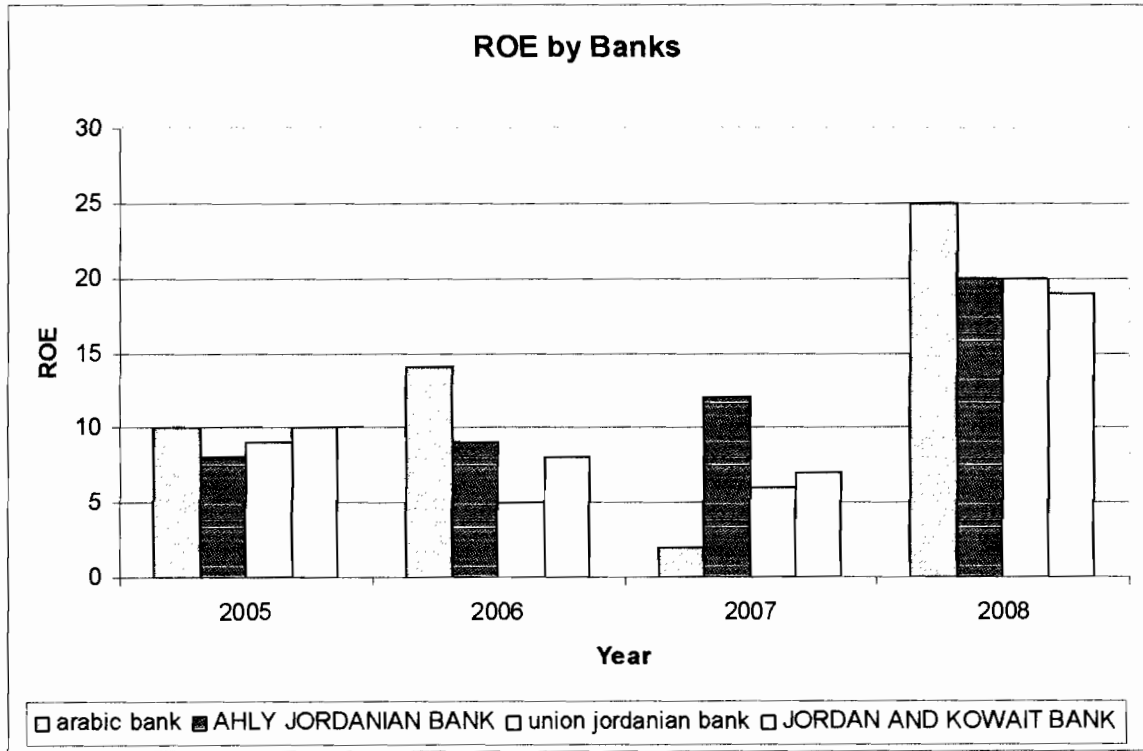
Table 4.1: Descriptive Analysis for the Dependant Variable and Independent

Variables (All Banks)

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
CA	52	0.08	0.21	7.21	13.87	0.03383	0.65
AQ	52	0.26	0.61	23.93	46.02	0.09102	0.65
MNG	52	0.02	0.12	3.11	0.0598	0.02099	0.65
ERN	52	0.01	0.57	3.47	0.0668	0.13570	0.65
ROA	52	0.01	0.05	0.97	0.0186	0.00769	0.65
ROE	52	0.05	0.4	7.23	0.1391	0.06061	0.65

[42]

In terms of CA, the minimum level of capital adequacy ratio is 8%, which meets the minimum requirement Basel accord. The highest CA is 21% on average the mean CA is 13.87%, which meets the international standard. AQ- minimum level of income to assets is 26%. However, some banks have the highest percent loan to assets of 61% on average. Banks in Jordan maintain 46% of their assets in terms of loans. In terms of MNG, the minimum level of management ratio is 2%, the management ratio has an average with 5.98%. In terms of ERN, it can be observed that it has a minimum level of earning ratio that is 1%, as well the average that the earning has 66.8%. It can be seen the standard deviation that range between minimum ROA (0.769%) and ERN (13.570%).

Figure 4.2 assets quality for banks in Jordan for the study period 2005 – 2008. It can be clearly seen the assets quality for all banks fall between a minimum assets quality 34.19% and maximum 57.6%. However, there are three of banks that have highest assets equity. Those banks are SB (57.6%), CB (56.38%), and JKB (55.74%).

Figure 4.2 Assets Quality for Banks in Jordan For The Study Period 2005 – 2008

(average)
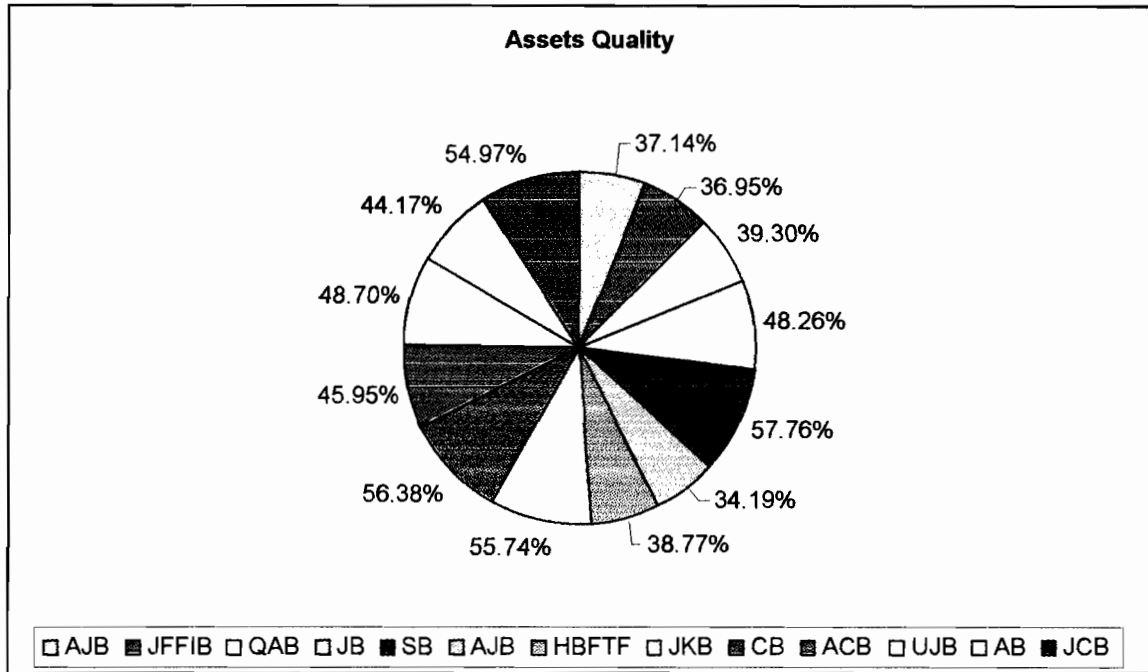
Figure 4.3 ERN by banks in Jordan for across the four-year period of beginning 2004 until 2008. 2005 – 2008, it can be observed in the figure the movement of earning for three banks. Those banks are Arabic Bank, Alhly Jordanian Banks, and Qairo Amman Bank. The ERN level has been fluctuating over the period in banks. Alhly Jordanian Banks recorded the highest ERN level (3.5%) as of 2004, followed by Qairo Amman Bank that recorded approximately 2.85 % as of 2004. However, Arabic Bank recorded approximately 2.2% ERN as of 2004. In 2008, Qairo Amman Bank's ERN has increased to be 3.6%, which is the highest, followed by Alhly Jordanian Banks that has approximately 2.90%, and the last ERN performance is for Arabic Bank that has 2.5% as of 2008.

[44]

Figure 4.3 ERN by Banks in Jordan for the Study Period 2005 – 2008
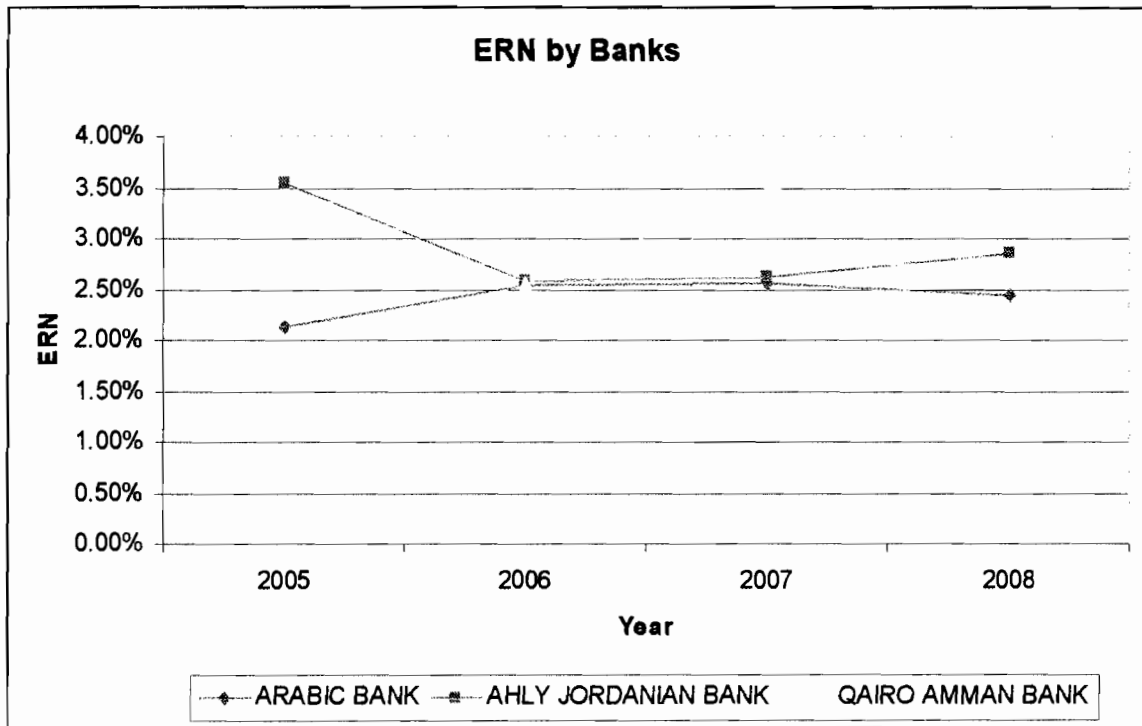
4.2 Correlation analysis

Correlation analysis is executed to test the strength of relationships between variables. Statistical test at 5% level is used to test the significance of the relationships between the independent variables in this study. It is also used to examine the potential issue of multicollinearity[4] that exists when two explanatory variables are highly correlated. A superior financial distress prediction model should avoid from multicollinearity among explanatory variables, because the information in one variable is already demonstrated by another variables. Table 4.2 shows the

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[4] Multicollinearity exists when one or more of the explanatory variables are highly collinear with other variables in the regression model. In this study, each of the explanatory variables is regressed on the remaining explanatory variables to compute R square values.

correlation matrix among the independent variables. The significance level calculated for each correlation is a primary source of information about the reliability of the correlation, which that to decide whether to accept or reject the hypothesis.

In correlation analysis, there will be two tables of correlation; the first table illustrates the Correlation between ROA and all independent variables. Table 4.3 illustrates the Correlation between ROE and all independent variables.

Table 4.2: Correlation between ROA and all ratios

		ROA	CA	AQ	MNG	ERN
ROA	Pearson Correlation	1				
	Sig. (2-tailed)	.				
	N	52				
CA	Pearson Correlation	.169	1			
	Sig. (2-tailed)	.232	.			
	N	52	52			
AQ	Pearson Correlation	.064	.285(*)	1		
	Sig. (2-tailed)	.653	.041	.		
	N	52	52	52		
MNG	Pearson Correlation	-.345(*)	.063	-.372(**)	1	
	Sig. (2-tailed)	.012	.659	.007	.	
	N	52	52	52	52	
ERN	Pearson Correlation	.155	-.259	.340(*)	-.188	1
	Sig. (2-tailed)	.272	.064	.014	.181	.
	N	52	52	52	52	52

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix is a powerful tool for getting a rough idea of the relationship between predictors (Alsaeed, 2005). If Pearson correlation result is higher than 0.7, then there is relation among independent variables (Anderson, Sweeney, and Williams, 1996). As displayed in Table 4.2, the results indicate that there are three ratios

[46]

that are positively correlated with ROA. These ratios are CA (0.169), AQ (0.064), ERN (0.155), and, that means if these ratios increase, the return on assets will increase in the same direction with those ratios. ROA is positively correlated to CA at a strength 16.9%, but not significant. However, it can be observed that MNG (interest expenses / total loan) has a negative relationship with ROA -0.345, that means if interest expenses increased, the return on assets would decrease. On other hand, if the total loan increased, ROA would increase. AQ is related to CA, the ratio is coefficient correlation between AQ and CA is 28.5%. It can also be seen that there is a significant coefficient correlation between AQ and ERN that is 34%. Moreover, there is a significant negatively correlation between AQ and MNG that is -37.2%. That means if interest expenses increase, the AQ ratio will decrease.

Table 4.3: Correlation between ROE and all ratios

		ROE	CA	AQ	MNG	ERN
ROE	Pearson Correlation	1				
	Sig. (2-tailed)	.				
	N	52				
CA	Pearson Correlation	-.353(*)	1			
	Sig. (2-tailed)	.010	.			
	N	52	52			
AQ	Pearson Correlation	-.082	.285(*)	1		
	Sig. (2-tailed)	.561	.041	.		
	N	52	52	52		
MNG	Pearson Correlation	-.350(*)	.063	-.372(**)	1	
	Sig. (2-tailed)	.011	.659	.007	.	
	N	52	52	52	52	
ERN	Pearson Correlation	.354(**)	-.259	.340(*)	-.188	1
	Sig. (2-tailed)	.010	.064	.014	.181	.
	N	52	52	52	52	52

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 4.3 illustrates the correlation between ROE and all the ratios that are used in this study, however, it can be seen that there is a positive relationship between ERN (net interest margin) and ROE 0.354. That means if net interest margin increase, the return on assets will increase. However, it can be observed from the table above that there are two variables that negatively significant and correlated with ROE, those ratios are CA (shareholder equity / total assets) and MNG (interest expenses / total loan) that have -.353 and -.350 respectively. That means if interest expenses increased, the return on equity would decrease. In addition, if the total assets increased, ROE would increase. For MNG if interest expenses increased, the return on equity would decrease. On other hand, if the total loan increased, ROE would increase. It can be clearly seen that there is a negative relationship between AQ (total loan / total assets) ratio and ROE that has -0.082. That means if total loan increased, the return on equity would decrease. This shows that Jordan loan were not efficient to managing their loan to generate results during the study period. In addition, if the total assets increased, ROE would increase.

AQ is related to CA, the ratio is coefficient correlation between AQ and CA is 28.5%. It can also be seen that there is a significant coefficient correlation between AQ and ERN that is 34%. Moreover, there is a significant negatively correlation between AQ and MNG that is -37.2%. That means if interest expenses increase, the AQ ratio will decrease. This suggests that more problems loans (low AQ) recognise banks to increase expenses to monitor their bad loans.

[48]

4.3 Regression Analysis

4.3.1 Regression Analysis for All Observations of Analysis (ROA)

Table 4.4: Summary of Analysis (ROA)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.475(a)	.225	.160	.00705	.225	3.420	4	47	.016	1.772

a Predictors: (Constant), ERN, MNG, CA, AQ
b Dependent Variable: ROA

R square is the relative predictive power of a model and it is a measure between 0 and 1, the closer to one is a significant model. In this analysis, it can be seen the R square is 0.220. The adjusted R square is 0.160. This shows that on an adjusted basis, the independent variables are collectively 16 % related to the dependent variable ROA. There are four variables have been explained in this analysis, these variables are (CA) capital adequacy, (AQ) assets quality, (MNG) management, and (ERN) earnings. The coefficient R is 47.5%. This shows that all of the independent variables collectively explain 47.5% changes in ROA. The remaining 52.5% of changes will be identified by other factors not captured in the model. In other words, the (CA) capital adequacy, (AQ) assets quality, (MNG) management, and (ERN) earnings are considered a good model to improve bank performance, because it affects 47.5%. In ROA. The Durbin-Watson statistic is 1.772; it means that there is no serial correlation between independent variables and ROA. Therefore, this meets one of the regression assumptions.

[49]

Table 4.5: Coefficient Analysis and Collinearity Statistics (ROA)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.027	.007		3.639	.001		
	CA	.078	.034	.341	2.305	.026*	.752	1.330
	AQ	-.024	.014	-.278	-1.724	.091***	.634	1.578
	MNG	-.154	.052	-.421	-2.991	.004*	.831	1.204
	ERN	.015	.008	.259	1.742	.088***	.747	1.339

a Dependent Variable: ROA
* is significant at the 0.05 level , the confidant level is 95%
** is significant at the 0.01 level, the confidant level is 99%
*** is significant at the 0.1 level, the confidant level is 90%

According to the results in the table above, it can be observed that there are two variables are significant which are CA (0.026) and MNG (0.004). On the other hand, the other variables are not significant which have values more than 0.05. Those ratios are AQ and ERN that have 0.09 and 0.088 respectively. Multicollinearity is assessed by examining tolerance and the Variance Inflation Factor (VIF), two collinearity diagnostic factors that can help us to identify multicollinearity. Tolerance is a measure of collinearity. A small tolerance value indicates that the variable under consideration is almost a perfect linear combination of the independent variables already in the equation and that it should not be added to the regression equation. If the tolerance value less than 0.1, it should be investigated further. If a low tolerance value is accompanied by large standard errors and non-significance, multicollinearity may be an issue. In this analysis, all the variables have small values of tolerance that are all more than 0.1 which that means the statistic shows evidence of no multicollinearity.

From the result, we find that CA is positively and significantly related to influence ROA. If banks increase its CA, its ROA also increases. The coefficient estimate of CA is 0.341. This means 0.341 positively changes in CA will lead to at positive changes in ROA. AQ is positively and not significant in influencing ROA. If banks increase its AQ, its ROA will not increase. The coefficient estimate of AQ is 0.14. This means 0.14 positively changes in AQ will not lead to positively changes in ROA. MNG is positively and significantly related to influence ROA. If banks increase its MNG, its ROA also increases. The coefficient estimate of MNG is 0.052. This means 0.052 positively changes in MNG will lead to positive changes in ROA. ERN is positively and not significant in influencing ROA. If banks increase its ERN, its ROA will not increase. The coefficient estimate of ERN is 0.08. This means 0.08 positively changes in ERN will not lead to positively changes in ROA.

Table 4.6: Summary of Analysis (ROE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.580(a)	.336	.280	.05144	.336	5.952	4	47	.001	1.850

a Predictors: (Constant), ERN, MNG, CA, AQ
b Dependent Variable: ROE

It can be seen in the table above that R square is 0.336. The adjusted R square is 0.280. This shows that on an adjusted basis, the independent variables are collectively 28 % related to the dependent variable ROA. There are four variables have been explained in this analysis, these variables are (CA) capital adequacy, (AQ) assets quality, (MNG) management, and (ERN) earnings. The coefficient R is 58%. This shows that all of the

Multicollinearity is assessed by examining tolerance and the Variance Inflation Factor (VIF), two collinearity diagnostic factors that can help us to identify multicollinearity. Tolerance is a measure of collinearity. A small tolerance value indicates that the variable under consideration is almost a perfect linear combination of the independent variables already in the equation and that it should not be added to the regression equation. If the tolerance value less than 0.1, it should be investigated further. If a low tolerance value is accompanied by large standard errors and non-significance, multicollinearity may be an issue. In this analysis, all the variables have small values of tolerance that are all more than 0.1 which that means the statistic shows evidence of no multicollinearity.

From the result, we find that CA is positively and not significant in influencing ROA. If banks increase its CA, its ROA will not increase. The coefficient estimate of CA is 0.246. This means 0.246 positively changes in CA will not lead to positively changes in ROA. For AQ is positively and significantly related to influence ROA. If banks increase its AQ, its ROA also increases. The coefficient estimate of AQ is 0.099. This means 0.099 positively changes in AQ will lead to at positive changes in ROA. MNG is positively and significantly related to influence ROA. If banks increase its MNG, its ROA also increases. The coefficient estimate of MNG is 0.377. This means 0.377 positively changes in MNG will lead to at positive changes in ROA. ERN is positively and significantly related to influence ROA. If banks increase its ERN, its ROA also increases. The coefficient estimate of ERN is 0.061. This means 0.061 positively changes in ERN will lead to at positive changes in ROA.

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independent variables collectively explain 58% changes in ROA. The remaining 42% of changes will be identified by other factors not captured in the model. In other words, the CA) capital adequacy, (AQ) assets quality, (MNG) management, and (ERN) earnings are considered a good model to improve bank performance, because it affects 58% Of ROE. The Durbin-Watson statistic is 1.85; it means that there is no serial correlation between independent variables and ROA. Therefore, this meets one of the regression assumptions.

Table 4.7: Coefficient Analysis and Collinearity Statistics (ROE)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.326	.054		6.046	.000		
	CA	-.278	.246	-.155	-1.132	.263	.752	1.330
	AQ	-.199	.099	-.299	-2.001	.05*	.634	1.578
	MNG	-1.117	.377	-.387	-2.967	.005*	.831	1.204
	ERN	.153	.061	.343	2.492	.016*	.747	1.339

a Dependent Variable: ROE
* is significant at the 0.05 level , the confidant level is 95%
** is significant at the 0.01 level, the confidant level is 99%
*** is significant at the 0.1 level, the confidant level is 90%

It can be seen in the table above the coefficient analysis and collinearity statistics (ROE). According to the results in the table above, it can be observed that there are three variables are significant which are AQ (0.050), MNG (0.005), and ERN (0.016). On the other hand, there is only a variable that is not significant which is CA ratio that has values more than 0.05 (0.263).

4.4   Application Model

The development the model is applied by using the coefficient for each explanatory variable which can be seen in Table 4.5 and 4.7. It can be observed from table 4.5 that 2 of 4 variables are statistically significant at $P < 0.05$. These are CA (0.026) and MNG (0.004). The values of the weights can be seen by observing the "B" column under unstandardized coefficients.

Based on regression results, the model will be as follow,

$$ROE = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 MNG + \beta_4 MNG + eit \dots\dots\dots\dots\dots (1)$$
$$ROA = 0.027 + 0.341\ CA - 0.27\ AQ - 0.421\ MNG + 0.259\ ERN + eit \dots\dots(1)$$

The coefficient estimate result indicates that the CA is significant and positively related to ROA. The statistic suggests that a 0.341 points increase in CA will result in one point increase in ROA. It can be seen from equation 1 that there is a decline in AQ by 0.27. In addition, there is a decline also in MNG by 0.421. The coefficient estimate result indicates that the ERN is significant and positively related to ROA. The statistic suggests that a 0.259 points increase in ERN will result in one point increase in ROA.

$$ROE = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 MNG + \beta_4 MNG + eit \dots\dots\dots\dots (2)$$
$$ROE = 0.326 - 0.155\ CA - 0.299\ AQ - 0.387\ MNG + 0.343\ ERN + eit \dots.(2)$$

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It can be seen from equation 2 that there is a impact of AQ by 0.155. The coefficient estimate result indicates that the ERN is significant and positively related to ROE. The statistic suggests that a 0.343 points increase in ERN will result in one point increase in ROE.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0   Introduction

This study has investigated the performance of thirteen local Jordanian banks for the period 2004 to 2008, using the CAMEL measurement. But as mentioned earlier that we have excluded the liquidity ratio from our study due to the no availability of the data. In this chapter we summarize the overall research including objectives, findings of the research, contribution of the research and recommendations for future research. This chapter begins with the summary of findings, followed by suggestions for future researches.

5.1   Summary of Findings

The descriptive analysis that has been performed in the earlier chapter indicated that Jordanian commercial banks had a very low return on assets ratio (ROA), which was 0.769%, on the other hand Jordanian commercial banks had a relatively better return on equity (ROE) compared to the return on assets (ROA). The ROE was 6.061%.

This study has accomplished the research objectives as follows:

Objective 1: To explore the relationship between asset quality (CA) and the performance of Jordanian commercial banks during the study period.

Finding 1: Based on the correlation analysis that has been performed in the earlier chapter, it can be concluded that there is a positive but not significant relationship between CA ratio and ROA, which has the value of 17% referring to table 4.2. That means that the first hypothesis is rejected in terms of ROA as an indicator of banks performance. On the other hand, CA has shown a significant negative relationship with ROE, which has the value of 35% referring to table 4.3 that means the first hypothesis is accepted in terms of ROE as an indicator for banks performance.

Objective 2: To determine whether asset quality has affected the performance of Jordanian banks or not, during the period of the study.

Finding 2: Table 4.2, 4.3 show that there is a positive but not significant relationship between AQ ratio and ROA, which has the value of 0.6% referring to table 4.2. That means that the second hypothesis is rejected in terms of ROA as an indicator of banks performance. However, AQ has shown a negative but not significant relationship with ROE, which has the value of 0.82% referring to table 4.3 that means the second hypothesis, is also rejected in terms of ROE as an indicator for banks performance.

Objective 3: To identify whether the management has influenced the performance of commercial banks in Jordan.

Finding 3: Table 4.2, 4.3 shows that MNG has shown a significant negative relationship with ROA, which has the value of 34.5% referring to table 4.2 that means the third hypothesis is accepted in terms of ROA as an indicator for banks performance. It is also observed from table 4.3 that MNG has a significant negative relationship with ROE,

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which has the value of 35% referring to table 4.3 that means the third hypothesis is accepted in terms of ROE as well as an indicator for banks performance.

Objective 4: To examine the relationship between earnings and performance of Jordanian banks.

Finding 4: Table 4.2, 4.3 show that there is a positive but not significant relationship between ERN ratio and ROA, which has the value of 15.5% referring to table 4.2. That means that the fourth hypothesis is rejected in terms of ROA as an indicator of banks performance. Furthermore, Table 4.3 shows that ERN has a significant positive relationship with ROE, which has the value of 35.4% referring to table 4.3 that means the fourth hypothesis is accepted in terms of ROE as well as an indicator for banks performance.

5.2   Suggestions for Future Researches

An extension of this study for further studies can be developed in several areas. First of all, researchers in future are suggested to include more ratios which are not examined in this study. In order for them to figure out after the analysis which factor affected most. Secondly, it is recommended for their future research to measure banks performance in Jordan by comparing foreign and local banks simultaneously. The study hence, can identify the real indicators on banks performance and to further compare local commercial banks performance with its foreign competitors.

As a conclusion for this study, Jordanian banks performance represented by the thirteen banks sample of this study significantly influenced by CAMEL measures. These measures are capital adequacy (CA), assets quality (AQ), management (MNG) and earnings (ERN) according to their influence on ROA. In ROE model, the significant determinants are capital adequacy (CA), management (MNG), and earnings (ERN).

It is recommended that further in depth research or analysis should be conducted to examine future bank performance in Jordan.

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