

The impact of change in owned capital and deposits on the performance of banks: An empirical study on the commercial banking sector in Jordan

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Abstract: This study examines the effects of change in Owned Capital and deposits on performance of Jordanian banks. The study extends empirical work on owned capital of banks within country over the period of twelve years from 2000-2011 by utilizing data of banks listed at Amman Stock Exchange. Multiple regression models are applied to estimate the relationship between owned capital as well as deposits and banking performance. Three performance measures (including return on assets, return on equity, and net income) are used as dependent variable, while owned capital and deposits are used as independent variable. The results indicate that all the performance indicators such as Returns on Assets (ROA), Return on Equity (ROE) and Net Income (NI) are significantly and positively associated with owned capital. Moreover, there is no significant relationship between ROA and deposits. Altogether our study provides evidence that indicates bank performance is positively related to owned capital and deposits.

Keywords: Owned Capital, Deposits, Bank performance, Return on Assets, Return on Equity

1. Introduction

Bank capital has always been a central and vexing issue in the context of financial health and safety of a bank. It can in fact be said that the ultimate strength of a bank lies in its capital funds given its significance as a tool for meeting liabilities in a financial crisis and as a cushion for insulating a bank from the vagaries of the market adversity. For a bank to enjoy depositors' confidence, it must have a strong capital base as evidence of its strength and a tool for operating profitability so that shareholders' funds can increase through accretion to statutory and general reserves. Every business exerts considerable influence on its environment, customers, the government and the general public and this is derived from its financial resources and profitability which is a function of availability of funds to prosecute identified investment.

Established the functional role of capital vis-a-vis profitability, level of performance and public confidence in banks emphasize the need for a capital adequacy as a means for sustaining sound financial system. Generally both the regulatory authority and bankers to some extent agree on the significance of some level of capitalization for normal

operation. The bone of contention lies on how to determine what proportion is adequate and the causality between the level of capital and bank performance.

This study seeks to provide answer to the following research questions:

- (1) Does owned capital affect Jordanian banks' Return on Asset (ROA), Return on Equity (ROE), and Net Income (NI)?
- (2) What impact does owned capital and deposits have on bank profitability?

The rest of this paper is organized as follows: the next section is literature review. Section three details the methodology used in this study. Section 4 discusses the results. Finally, section 5 summarizes the conclusion and recommendations.

2. Literature Review and Theoretical Framework

2.1. Capital and Capital Adequacy

The significance of start-up and operating capital to any

business cannot be over emphasized and according to the submission of many theorists, the term capital is capable of being a source of confusion because of the variety of meaning which can be assigned to it. Ebhodage (1991), Greuning and Poratanovice (2003), and Statchindanada (2006). To the economist, capital refers to "real" capital which is the stock of goods accumulated through production while in business and finances, it is seen as "financial capital" which in itself could sometimes mean both tangible and intangible capital; Klise (1972). On the other hand, Arogundade (1999) defines capital as the owners stake in business and therefore a commitment to its success. Opinion however, differs among experts in banking and finance as to what constitutes capital adequacy, for instance Nwankwo (1991) submits that the question of how much capital a bank needs to ensure the stakeholders confidence and sustain healthy operations is determined by the supervisory and regulatory authorities.

Unoh (1991) noted that adequate capitalization is an important variable in business and it is more so in the business of using other people's monies such as banking. It is further stated that insured banks must have enough capital to provide a cushion for absorbing possible losses of provide, funds for its internal needs for expansion, as well as ensure security for depositors and the depositor insurance system. Regulators and bankers have also reached agreement as to what level of capitalization is adequate, for instance while regulators concern themselves primarily with the safety of banks, the viability of invested funds, and stability of financial markets, bankers generally prefer to operate with less capital, as the smaller its equity base the greater the financial leverage. Rose (1999) buttressed Koch's stand by stating that even a bank with a low return on assets can achieve a relatively high return on equity through heavy use of debt (leverage) and minimal use of owner's capital.

Kidwell et al (2000), on the issue of capital adequacy observed banks and regulators differ because they have different objectives. The primary goal of bank management is long term profit maximization achievable through high leverage while bank regulators are more interested in the risk of bank failures in general. Hence, bank regulators desire higher capital standard that promote bank safety.

2.2. Function of Capital

The primary function of capital is to finance the purchase of building, machinery and equipment while its secondary function is to protect long and short term creditors who make funds available to the business. However, in banking, the function of capital is primarily to serve as a cushion on loaned funds to absorb losses that may occur. It also serves the function of the acquisition of physical assets, Rosse (1964), Crosses and Hamsel (1980) and the Economist (1999).

Bank capital affords the "engine and bumper" that keeps the bank, going as well as absorbing nasty shocks and the more capital a bank base has, the better it is able to sustain losses without running into insolvency. For instance a bank statutory capital primarily serves as an indicator of bank

growth, ensure funds for the organization's growth and afford the development of new services programs and facilities, and a "tether" for regulatory agencies to limit how much risk exposure banks can accept. It thus protects the government deposit insurance system from serious losses. In spite of the controversy over the roles of capital between bankers and regulators coupled with the fact that its function will largely determine the quantity or amount of capital considered adequate for banking business, there seems to be similarity between the parties stands on the various purposes of capital. This has led to the classification of the roles of capital in banking into primary and secondary, the former function affording banks operational latitudes while the latter bring about efficiency. Other review of banking literatures has shown that regulators place high premium on the primary functions while bankers emphasized secondary roles.

Nwankwo (1991) stated that indispensability of capital in banking lies on its functional significance at the various stages in a bank's life cycle, for instance at the commencement it satisfies the statutory minimum requirement as well as compensate for lack of profit that is generally the characteristic of business at the early years of operation. As a bank matures, additional capital would be needed to cushion expansion and absorb operational losses and where the third stage is characterized with either illiquidity or bankruptcy many banks survive these hazards through the application of capital as a tool for protection depositors and other creditors.

2.3. Components of Bank Capital

Accounting theory defines capital, simultaneously as a net worth which equals the cumulative value of liability and represents ownership interests in a firm. In banking, the regulators concept of bank capital differs substantially from accounting capital. Specifically, regulators exercise some level of depth when measuring capital adequacy and they refer to "capital" as those funds contributed by the banks owners consisting principally of stock, surplus (reserves) for contingencies and retained earnings.

A balance sheet classification of a bank capital will generally include ordinary share capital or equity, reserves (statutory reserves, general reserves and retained earnings), and preference shares, loan capital may be referred to as long term capital while reserves may also include share premium and revaluation reserves, Rose (1999) and Arogundade (1999). Since the universal adoption of the 1988 Basle accord by many banks, operational capital has been re-defined to consist of core capital (primary or tier 1 capital) and supplemental capital (secondary or there 2 capital). Thus components of the two tiers of a bank capital will include equity capital i.e. common stock + perpetual preferred stock + surplus fund + bonons issue reserve + minority equity interest in subsidiary companies, while core capital refers to equity capital – goodwill (other intangible assets). Another Class of capital commonly referred to as supplemental capital relates to provision for loan loss + preferential shares + convertible securities (hybrid capital

instruments) + revaluation reserves.

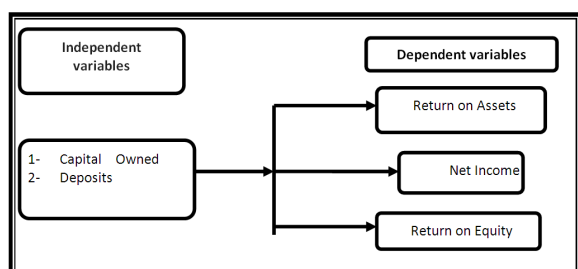
2.4. Capital Adequacy Measurement and Profitability

Cross and hamsel (1980) stated that the adequacy of capital is a dynamic concept and it is influenced by the prevailing and expected economic conditions of the entire economy. Ebhodaghe (1991) defines capital adequacy as a situation where the adjusted capital is sufficient to absorb all losses and cover fixed assets of the bank leaving a comfortable surplus for the current operation and future expansion.

Functionally, adequate capital is regarded as the amount of capital that can effectively discharge the primary function of preventing bank failures by absorbing losses. On the other hand measurement of capital for adequacy purposes is determined by several factors (both internal and external) influencing the level of risk occasioned by operation. Furthermore the level of capital perceived to be adequate at one time may need to be adjusted over time as the risk characteristics the competitive environment, markets and economic conditions in which the bank operates change. The Basel Accord (1988) as international standard of capital adequacy recognizes the ratio of capital funds to deposit and has informed the adoption of a rule of thumb that a bank should have capital funds equal to at least 10% of its deposit liabilities. The minimum risk- based standard for capital adequacy was set by Bases Accord 1 at 8% of risk-weighted assets of which the core capital element should be at least 4%. Oftentimes a bank statutory is considered as adequate if it is enough to cover the bank's operational expenses, satisfy customers withdrawal needs and protect depositors agonist total or partial loss of deposits in the event of liquidation or losses sustained by the bank, Onuh (2002) Crosse and Hamsel (1980).

2.5. Conceptual Frame Work

Based on the research questions, the following conceptual model may be constructed. Conceptualization model shows the relationship capital owned and deposits as independent variables and return on assets, net income, and return on equity as dependent variables.



Source: Author design

3. Research Methodology

3.1. Data and Sample

All banks operating in Jordan are the population of the study. Sample of the study include 11commercial banks,

which are listed at Amman Stock Exchange (ASE) over the period from 2000 to 2011. The study employed secondary data that were obtained from Annual financial statements and publications of the central bank of Jordan. Information used cover a period of twelve years.

3.2. Variables

The independent variables consist of owned capital and deposits. Dependent variables are Return on Assets (ROA), Return on Equity (ROE) and Net Income (NI).

3.2.1. Return on Assets (ROA) measures the profitability of the banks and calculated as

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

3.2.2. Return on Equity is used to calculate a bank's profitability by revealing how much profit a bank generates with money invested by shareholders and its formula is given below.

$$\text{Return on Equity} = \frac{\text{Net income}}{\text{Total shareholders' Equity}}$$

3.2.3. Net Income measures bank profitability by revealing how much profit a bank generates with money.

3.3. Research Hypothesis

In order to investigate the impact of change in capital owned and deposits on banking performance the study used three hypotheses:

H01: The bank's capital owned and deposits have no impact on return on assets.

H02: There is a negative relationship between capital owned, deposits and net income.

H03: The capital owned and deposits have insignificant impact on return on equity.

3.4. Model Specification

Multiple regression models are used to find out the association between changes in owned capital and bank performance in the context of Jordan. Three regression models are formulated to check the relationship between owned capital and banking performance. Our base models take the following form:

$$Y_{it} = \alpha + \beta x_{it} + \mu_{it}$$

Where:

Y_{it} is independent variable.

β_0 is the intercept.

x_{it} is the independent variable

μ_{it} is the error terms.

i is the number of banks and

t is the number of time periods

The three models presented below are used to relate the study variables:

$$\text{ROA} = C + B_0X_1 + B_1X_2$$

$$\text{ROE} = C + B_0 X_1 + B_1X_2$$

$$\text{NI} = C + B_0X_1 + B_1X_2$$

Where B_0, \dots, B_2 are coefficients of the expletory variables N , the error terms and

C= Constants
 X1= Capital Owned
 X2= Deposits
 ROA= Return on Assets
 ROE= Return on Equity
 NI= Net Income

4. Results and Discussion

4.1. Descriptive Statistics

Table 1. Summary Statistics of Independent variables (capital owned and deposits).

year	Capital Owned (X1)		Deposits (X2)	
	Mean	Std. Deviation	Mean	Std. Deviation
2000	60291231	85568720	613675507	715795487
2001	119044053	261023691	673324617	814665775
2002	130839758	311159413	617825885	595652755
2003	140949442	332161511	633289908	608776903
2004	158686123	333460697	752249631	730448046
2005	212135133	423531592	879062748	762875870
2006	269879566	523013206	1026179807	864132338
2007	305861346	582136091	1223074704	1137237728
2008	354076610	685286509	1047662897	892403831
2009	372901299	721789301	1449864994	1326298000
2010	394341896	740382175	1497691198	1337815925
2011	420845590	764321732	2774720147	4857331388
Total	243853103	517697617	1088241074	1658203922

Source: Generated from analysis using E-views

Table 1 explains the results that are found by applying descriptive statistics. The values of Mean and Standard Deviation of independent (Capital Owned and Deposits) of the sampled banks are calculated from 2000 to 2011. The results indicate high positive growth. In 2000 the mean value of owned capital was JOD 60.291 million which was increased to JOD 420.845 million in 2011. Similarly in 2000 the deposits value was 61.367 million which was increased to JOD 277.472 million in 2011. so, the growth of deposits and capital owned are very high. through table 1 we shows that the average capital owned 243.853 million and standard deviation 517.697 million, this shows that the department of bank designed to increase the confidence of depositors to attract more deposits, also the increase in capital owned refers to the ability of banks in response deposits from the balance of capital owned. Where average deposits for the same period 108.842 million and standard deviation of 165.820 million, despite the decline in the year 2008 as a result of global financial crisis in illustrated by figure 2.

Figures 1 and 2 show the progress of capital owned and deposits for commercial banks from 2000 to 2011. The banks' owned capital and deposits increased in the years studied. The increase might be due the financial crises.

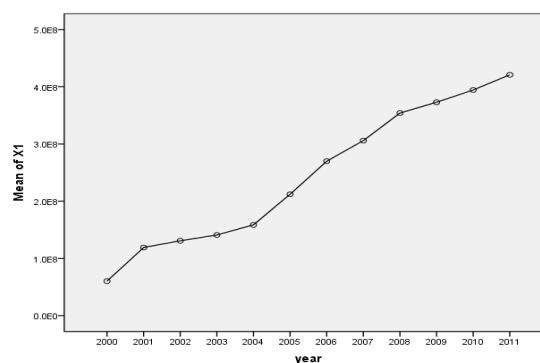


Figure 1. Capital Owned for the period of study (2000-2011). [Source: Amman Stock Exchange]

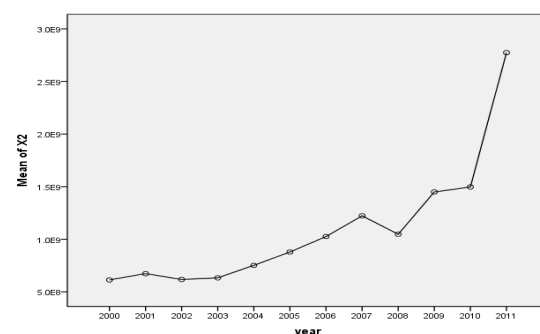


Figure 2. Deposits for the period of study (2000-2011) [Source: Amman Stock Exchange]

Table 2. Summary Statistics of dependent variables (ROA, NI & ROE).

year	ROA (Y1)		net income (Y2)		ROE (Y3)	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
2000	.2500	1.09585	6.567266273	.6495556118	6.0300	12.23783
2001	.6292	.82088	6.390180108	.8851705119	5.8485	8.84008
2002	.3162	1.86241	6.566678977	.8982240840	9.7115	11.16387
2003	.8185	.97611	6.3598850381	1.264735504	8.7246	7.05759
2004	1.4969	.65336	7.014052631	.4711016066	14.2823	5.38696
2005	2.5177	1.09527	7.348751423	.4560623761	19.6162	7.49263
2006	1.8077	.40054	7.295810369	.4879463277	13.5115	3.40095
2007	1.5077	.53894	7.257700015	.5613815640	10.9854	4.59820
2008	1.5808	.36834	7.329473723	.5129128815	11.1992	3.81791
2009	1.1831	.45735	7.194394231	.5773072895	8.7477	3.89514
2010	1.3185	.57156	7.285089023	.4852279126	9.4208	4.42507
2011	1.1058	.65432	7.112743792	.6545925638	7.7642	5.11208
Total	1.2117	1.06042	6.981301023	.7536243077	10.5044	7.75045

Source: Generated from analysis using E-views

Table 2 shows the values of Mean and Standard Deviation of dependent variables (ROA, NI, and ROE) of the sampled banks which are calculated from 2000 to 2011. The results indicate the mean ROA of the sampled banks is increased from 0.2500 in 2000 to 1.1058 in 2011, while that of the ROE is increased from 6.0300 in year 2000 to 7.7642 in year 2011. The above analysis demonstrates that the selected banks have a high accounting performance during the period of study. Through the increase that we observe in each of the (ROA, NI, and ROE) during the years of the study, they indicate the ability of bank in the face of losses resulting from the investment without compromising the money that depositors.

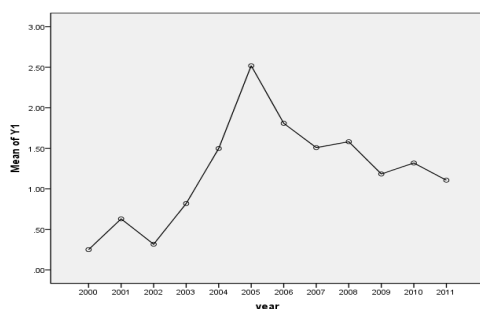


Figure 3. Return on Assets for the period (2000-2011). [Source: Amman Stock Exchange]

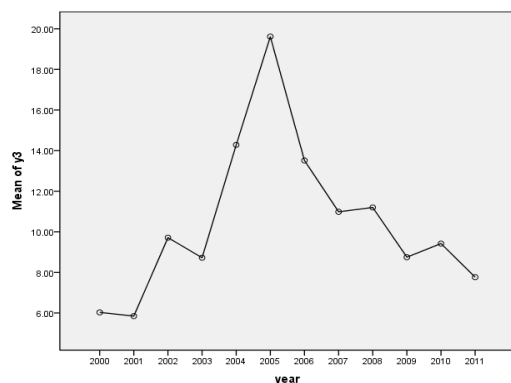


Figure 4. Return on Equity for the period (2000- 2011). [Source: Amman Stock Exchange]

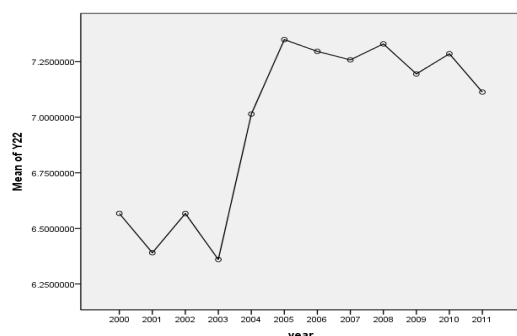


Figure 5. Net Income for the period (2000- 2011). [Source: Amman Stock Exchange]

Figures 1, 2 and 3 illustrate the ROA, NI, and ROE for the commercial banks from 2000 to 2011. The banks' ROA, NI, and ROE increased and fluctuated during the period of study. The increase might be due to competition between commercial banks.

4.2. Correlation Analysis

Table 3. Pearson correlation matrix.

	X1	X2	Y1	Y2	Y3
X1	1.000000	0.678209	0.026383	0.562985	-0.066026
X2	0.678209	1.000000	0.049704	0.485373	-0.007631
Y1	0.026383	0.049704	1.000000	0.421651	0.550816
Y2	0.562985	0.485373	0.421651	1.000000	0.461215
Y3	-0.066026	-0.007631	0.550816	0.461215	1.000000

Where: (x1) capital owned, (x2) deposits, (y1) return on assets, (y2) net income and (y3) return on equity.

Table 3 shows the correlation matrix which tells us relationship among variables in this study. Correlation is also defined as dependence of one variable upon other. The diagonal elements which are the correlations of the variables with themselves are always equal to one. The results show that there is a very strong positive correlation (68%) between owned capital and deposits, which means that owned capital has a strong favorable impact on deposits. By viewing the other variables from correlation matrix table, it is clearly observed that there is a negative relationship between ROE and owned capital. It also indicates that there is a negative relationship between ROE and deposits. The reason for the inverse relationship between capital owned and deposits on ROE, denominator to the increase in the ratio to the ROE compared to the numerator of this ratio, which represents the net profit, and we see this increase in table 1.

4.3. Regression Results

Regression analysis is used to test the impact of capital owned and deposits on financial performance of the listed banks on Amman Stock Exchange.

Table 4.3.1. Capital owned and Return on Assets.

Dependent Variable (ROA)			
Method: Panel	ELS	Least Squares	
Probability (P- Value)	T-Test	Coefficient	Variables
0.050	- 1.9088	-3.342	X1
0.319	0.9994	2.208	X2
%49 :(R ²)			
1.2699 :(DW) Test			
Probability (F)	Tabulated Value	Calculated Value	F- Test
0.000	2.60	5.19616	

Source: Authors" compilation generated using E-views

The above table indicates the coefficient of correlation between capital owned and deposits on return on assets. R square for ROA is 0.49 which means 49% of sample describes ROA, while 49% variation in dependent variable is explained by independent variables and 51% variation in ROA remains unexplained by the independent variables of the study. F-Statistics of return on assets is 5.19616 and it shows the overall significance of model. T-statistics tell us the significance of regression results. Outcomes of regression analysis showed a positive significance relationship among return on assets and capital owned and insignificant relationship between return on assets and deposits. Based on the empirical results of this study, H01 come false.

Table 4.3.2. capital owned and Net Income.

Dependent Variable (Net Income)			
Method: Panel	ELS	Least Squares	
Probability (P- Value)	T-Test	Coefficient	Variables
0.000	- 3.7863	- 3.020	X1
0.020	2.3496	1.536	X2
%75 :(R ²)			
1.4369 :(DW) Test			
Probability (F)	Tabulated Value	Calculated Value	F- Test
0.0000	2.60	15.4569	

Source: Authors" compilation generated using E-views

The above table shows regression model of net income produces highest value of R square 75% as compare to other models and value of F-Statistics is 15.4569. Capital owned and deposits are found to have a strong favorable impact on profitability as measured by Net Income. Based on the above evidence gathered, the H02 was rejected. Because in this study the empirical results show that there is a significant and positive impact of capital owned and deposits on Net Income.

Table 4.3.3. Capital Owned and Return on Equity.

Dependent Variable (ROE)			
Method: Panel	ELS	Least Squares	
Probability (P- Value)	T-Test	Coefficient	Variables
0.013	2.5019	-8.9038	X1
0.007	2.7126	6.2818	X2
% 47:(R ²)			
1.6491 : (DW) Test			
Probability (F)	Tabulated Value	Calculated Value	F- Test
0.0000	2.60	4.6726	

Source: Authors" compilation generated using E-views

The above table illustrates regression model of return on equity. Value of R square is 47% for return on equity which means sample defines the dependent variables up to 47% and F-Statistics for return on equity is 4.6726. As per regression results the H03 was rejected. Because the empirical result of this study shows that there is a significant and positive impact of capital owned and deposits on return on equity.

5. Conclusion and Recommendation

This paper examines the impact of owned capital and deposits on bank's financial performance using 11 listed banks in Amman Stock Exchange between 2000 and 2011. The paper seeks to fill the gap in the literature as a result of limited studies that have been conducted so far in this area using Jordanian data, and to provide empirical evidence regarding influence of capital owned and deposits on profitability of banking sector in Jordan. The findings of study validated a strong positive dependence of capital owned on all profitability measures (ROA, ROE, and NI). Capital owned having a positive relationship with return on assets (ROA), return on equity (ROE) and net income (NI). Total deposits experienced a strong optimistic connection with dependent variables (ROE and NI). Now by analyzing the results of each variable we can concluded that there exist a positive relationship among capital owned as well as deposits and profitability of Jordanian banks.

5.1. Recommendations

This study can be extended by adding more banks or by conducting a study on global level with inclusion of all banks

around the world. A comparative analysis of Islamic banking and conventional banks may be included in further research. There is also an opportunity to conduct a comparative study to check the relationship among capital owned and profitability of Foreign and Domestic Banks in Jordan.

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