



# The Impact of Loans to Deposit Ratio (LTD) and Return on Assets (ROA) on the Capital Adequacy Ratio of the Tehran Stock Exchange and OTC

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## ABSTRACT

## Original Article:

Capital is one of important and essential factors in evaluating healthy and sustainability in banking system and in order that adequate capital basis can address wide range of risk which every bank faces. A brief review of banking theory implies empirically that all different aspects of banking organization were influenced by available capital and expected possible return directly or indirectly . Capital operates as a shield against decreasing of asset value or increasing bank debts. The relation between capital adequacy and banking and also economic factors has a considerable importance. A plenty of universities and financial institution have tried to identify the main factor of determining capital adequate ratio.in this term, in recent studies these questions have been issued to determine as is there any positive and meaning relation between fund ratio to depositing on legitimate banking capital adequacy in Tehran commercial paper and Iranian over the counter( OTC)? And also any positive or meaning relation between banking asset return on capital adequacy ratio in commercial paper exchange market? Therefore in terms of finding a solution for issued matter, some assumptions were implied based on determined relations. Considering static population was included all acceptable bank in exchange market in during of 1388 to 1392 and any sampling haven't been determined. So 15 acceptable bank were selected as a sample in this article.it is better to mention a cross multi – factors model was designed to be examined codified assumption by using synthetic data. And achievable results shows there aren't any positive or meaning relation between paid fund on depositing and acceptable banking capital adequacy in Tehran exchange commercial paper and OTC. And the observable result also showed that there are positive and direct relation between asset return and acceptable banks capital adequacy in exchange commercial paper market and OTC.

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## 1. Introduction

The financial banking healthy construction and credit institution has played main role in economic developing and sustainability in every country so as capital and its adequacy was accounted one of the essential factors in evaluating purring and sustainability in every banking systems. And appropriate capital basis can be accounted as a well scale to addressing wide range of adventure that any bank system is possible to face it. A brief review of banking theory empirically implies that all different aspect of banking organization were influenced directly or indirectly by available capital and expected possible returns. The banking capital amount has a considerable effect on banking competitive position so all banks were obligated to attract public saving in order to survive and one of the most

important banking features for succession is included to provide enough capital

Capital deficit ultimately cause to create great difficulty for bank in competitive environment.

Referring to much bank expertise, the capital adequacy is the main scale for evaluating banking financial condition. Recently many global banks in order to achieving mentioned ratio are obligated to increase their asset or to change their capital or debt portfolio so as they follow from some policy as like as decreasing inter credit bank risk, selling bank asset with high risk degree and selling commercial paper and so on.

At result as while first capital adequacy ratio was founded the one of most important qualities index for banking and

financial institution operational evaluating and secondly achieving the least level of determined capital adequate is numerated as banking credit positions mark in which different aspect effects on it and be effected by it. In this research, the impact of facilitated variable on acceptable banks capital adequate ratio will be reviewed in Tehran exchange market and Iranian OTC.

### Literature

#### Foreign research

Shinger and Hiesni both of them have examined the effect of some bank factors on capital adequacy as “a capital adequacy ratio determined in Albanian baking system in during 2007 to 2014 “ the result of research showed that asset return hasn’t any especial effect on stakeholder’s equity while other variable as like as fund and fund ratio has a diver’s relation with capital adequacy. Although we discover there are direct and meaning relation between banking size and capital adequacy.

In research have been done in during 2013 by almazry “capital adequacy, cost to income ratio, and saw dean banking operation “was concentrated on profit making capital adequacy ratio.as well as existing adverse relation between cost and income ratio, there are direct and meaning relation between capital adequacy and profit

#### Domestic research

In a research with “investigation effect Variable on capital adequacy in Iranian banks which is reached conclusions of some factors like as cash flow and asset return so have positive and meaning relation and other variable as like as banking size and the pay fund share and stake holder equity return, and finical leverage have a negative and strong relation with capital adequacy so as finally the negative relation between deposit share and capital adequacy have been approved.

### Methodology

This research as practical research result can be useful for managers. Although we should mention that it was supposed to be correlation research when you see it from its different dimension and by attention to achieve a conclusion by data examination. Also, since the test data to reach a conclusion, our study will be positive in theory.

#### Question and research assumptions

As you know the main important part in research, during these investigations the below matters were issued:

1-does any effect the fund ratio to depositing on capital adequacy?

2-is there any impact of asset return on capital adequacy?

In order to above mentioned explanation and question reply, the bottom assumption was issued:

1- There is a significant positive effect the fund ratio to depositing on capital adequacy.

2- There is a significant positive impact of asset return on capital adequacy.

#### Population and sample

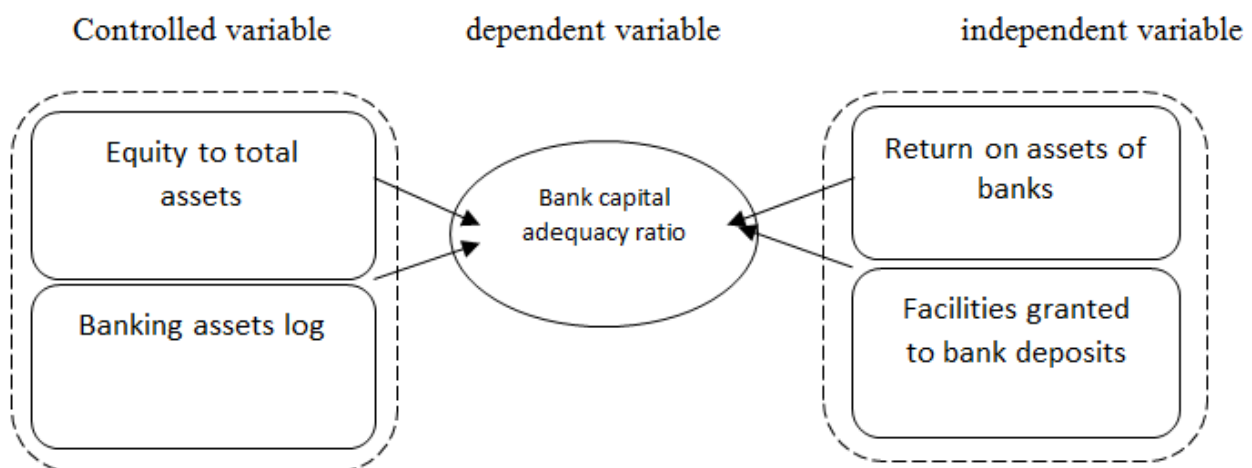
All accepted banks and financial institutions in paper were concerned in our country and due to our limited population, we didn’t make sample and all population was overviewed in this article.

#### Data gathering

In order to data gathering to identifying research literature we use library method for studding documentary to profit making capital adequacy.

#### Conceptual model

Conceptual model is willing to answer research question and based on research assumption. In Figure 1 presents a conceptual model.



(Figure 1) conceptual model

#### statistical model

To test the hypotheses of the model is used:

$$CAR_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 LTD_{i,t} + \beta_3 EM_{i,t} + \beta_4 \ln\_TA_{i,t}$$

where in:

**Dependent variable:**

$CAR_{i,t}$  = bank's capital adequacy ratio y in year t.

**independent variable:**

$ROA_{i,t}$  = y in year t bank's return on assets to total assets, the ratio of net profit to the bank as a measure of bank efficiency;

$LTD_{i,t}$  = ratio of facilities to bank deposits in year t as a measure of liquidity banks.

#### Control variables:

$EMi,t$  = ratio of equity to total assets of the bank i in year t;

$Ln\_TAi,t$  = the natural logarithm of bank assets in year t as a measure of its size.

#### Data analysis

The statistical method used in this research is panel data. Then the combined data and test methods related to it are described. It should be noted in this study to analyze the data from the application of E-views version 9 was used and findings in the form of two parts: (1) Descriptive statistics and (2) inferential statistics, will be presented next.

Table 2) descriptive indicators variables

Strain	Skewness	Standard deviation	minimum	maximum	Middle	mean	Variables
2.995	-0.497	0.522	0.788	3.14	2.213	2.156	Bank capital adequacy ratio
4.884	1.384	0.015	0.001	0.073	0.017	0.019	Return on assets
4.787	0.516	0.311	0.135	1.78	0.73	0.637	facilities granted to bank deposits
3.327	1.002	0.039	0.022	0.185	0.07	0.08	equity to total assets
2.719	-0.0341	1.233	15.272	21.038	18.695	18.752	Bank size

#### (2) Inferential statistics

The test used in this study Pyrsion correlation test and multi-variant regression to explore the relationship between independent and dependent variables By controlling the influence of other variables in addition to ensure reliability of test results were used in the regression.

#### Correlation test

#### (1) Descriptive statistics

Descriptive statistics over ally described as methods that all gathered information will be analyzed and summarized by them. The average is included the main of central index so that show equivalent point and distribution center.as given information in 2 table, the amount of average of capital adequacy is 9.772 and as you see the average of capital adequacy is equal 9.15in addition to the table , deviation to capital adequacy variable is equal 4.7 and Hypothesis test As mentioned the max amount is equal23/12 and the last one is equal 2/2.

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At first the correlation of variables will be discussed and the result can be seen in Table 3. The mean direct correlation Durbin the capital adequacy ratio Equity to total assets ratio of return on assets of banks listed on the Stock Exchange and Iranian OTC is established.

In addition, in Table 3 it is evident that the independent variables are not very strong correlation ( Pearson correlation celebration is Lower than 0.8 , so there is no problem in estimating the model.

(Table 3) Pearson correlation test

Bank size	Bank equity to total assets	facilities granted to bank deposits	Return on assets	Bank capital adequacy ratio	Variables
0.079	**0.6	0.241	**0.568	1	Bank capital adequacy ratio
0.558	0.000	0.073	0.000		
*-0.316	**0.326	-0.047	1		Return on assets
0.017	0.000	0.73			
0.243	-0.031	1			facilities granted to bank deposits
0.07	0.819				
*-0.0288	1				equity to total assets
0.03					
1					Bank size

\* = Significant at 95% confidence level \*\* = significant at 99% confidence level

#### Regression testing

Regression model should be established in each specific assumptions that if they violate any of them desirable properties estimates of regression hypothesis testing problems so it is difficult to perform the following tests is required prior to analysis data.

#### Test normality of the dependent variable

test to check the normality of the dependent variables used quarter . The test results are given in Table 4. The test of significance level Mt ghyrnsbt capital adequacy less than 0 / 05 Rnmal is not so variable distribution.

(Table 4) for Jock test

Significance level	Jock-for statistics	Variables
0.023	7.483	Bank capital adequacy ratio

**The reliability of variables**

Before analyzing data which was searched. The reliability of variables should be examined/monitored. In order to doing these research, we use two groups. Boys and Shane then the result will be given in table 5 and so all variables are stable in review period.

(Table 5) we test, boys sheen

Significance level	T-statistics	Variables
0.000	-10.326	Bank capital adequacy ratio
0.000	-11.198	Return on assets
0.000	-5.209	facilities granted to bank deposits
0.000	-6.784	equity to total assets
0.000	-10.201	Bank size

**Hypothesis test**

In order to estimate the coefficients of the model to test first to determine whether they are homogeneous or heterogeneous detection method combined data and then the result will be given in table 5 AND ACORDING TO table 6, the result of chov ,the result shows that less than 5 percent of circumstance evidence circumstantial evidence is obtained so to test this model for panel data is used table 7, the Hausman test, the necessity of using fixed or random effects model, review the test .so,with using fixed effects models and generalized least squares estimation method (EGLS) is presented in Table 8 is.

In according to achieved result data at 8 table there are not no correlation between and capital adequacy ratio in accepted Iranian bank and financial instutionin paper market so in this circumstance the first Hypothesis test research have not been approved and in opposite there are direct relation between asset return and capital adequacy ratio so the second hypothesis of this study is that "returns on bank assets on banks' capital adequacy ratio listed in the Tehran

Stock Exchange and OTC Iran has a significant positive effect", is approved.

(Table 6) Chow test results

Chow test result	Significance level	F statistic	Null hypothesis
The Null hypothesis rejected	0.000	20.37	Consolidated data model

(Table7) Hausman test results

test results	Significanc e level	Chi-square test	Null hypothesi s
The Null hypothesi s rejected	0.001	17.882	Random effects model

(Table 8) hypotheses test results

Significance level	T-statistics	standard error	Coefficients	Variables
0.387	-0.873	6.095	-5.326	Constant
0.000	6.633	13.444	14.861	Return on assets
0.21	-1.273	0.521	-0.664	facilities granted to bank deposits
0.000	8.662	2.421	20.973	equity to total assets
0.02	2.419	0.291	0.704	Bank size
0.976	The coefficient of determination	84.898	F statistic	
0.964	Adjusted coefficient of determination	0.000	F statistic significant level.	
2.018	Durbin-Watson	Methods EGLS (removing potential effects of heterogeneity of variance)		

**Summary and conclusion**

The general review of banking theory to the subject, specify all banking dimension directly or un-n directly influenced

by capital available and it is possible to achieve our expected return.

The other main one is bankruptcy and unable to do their financial obligation in which privatization trend and going far away banking system from governmental sate

environment causes to face with a great challenges to continue their way. so in this regard the first and most important factor to safe the bank in relative to possible lose is the factor of capital adequacy ratio to banking asset. Maintaining enough invest is the main source that public will be trust it.

And as the correlation between capital adequacy with bank and economic factors included high important so in this regard the below matter was issued

In order to reply issued question the experience determined that there isn't positive and meaning correlation between facilities and capital adequacy ratio.

This result determined the review banking have not done appropriate behavior to cover probable risk so we can make bigger the role of central bank . And finally the last result have been given in table 9.

(Table 9) The final results of this research

Consequently	Description hypothesis	Hypothesis
rejected	Significant correlation between the ratio and capital adequacy ratio Bank facilities granted to deposits listed on Tehran Stock Exchange and OTC Iran.	Main 1
accepted	Direct and significant correlation between the yield and the capital adequacy ratio bank listed on Tehran Stock Exchange and OTC Iran.	Main 2

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