



The Effect of Leverage and Liquidity Ratios on Earnings Management and Capital of Banks Listed on the Tehran Stock Exchange

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ABSTRACT

Banks, like all profit institutions seek their profitable growth and maximize their shareholders' wealth, increased profitability of the banks on the one hand, increases the company's value and on the other hand, increases executives' compensation and increases their tenure and because the same reason, bank managers have high motivation to increase profits through discretionary accruals. The capital structure also due to the relationship with credit risk and cost of capital is considered as one of important issues in the banks, so, the current research aimed to determine the effect of leverage and liquidity ratios on earnings management and capital of banks listed on the Tehran Stock Exchange. In this research, financial information of 14 banks listed on the Tehran Stock Exchange during the period 2010-2015 have been studied and for performing this study, multivariate linear regression analysis using panel data has been used. The results show that financial and liquidity leverage has significant positive effect on earnings management of banks, therefore increasing the degree of financial leverage and by increasing bank liquidity, the possibility of using discretionary accruals and earnings management at banks increase. The results also showed that financial leverage has a significant negative effect on the bank's capital adequacy ratio and with increasing financial leverage bank capital adequacy ratio is reduced.

Keywords: Earnings Management, Discretionary Accruals, The Adequacy of Bank Capital, Financial and Liquidity Leverage of Banks

JEL Classifications: E44, G2

1. INTRODUCTION

The profit (earning) management philosophy is taking advantage of the standard method flexibility and accepted accounting principles. Of course, a variety of interpretations that can be taken from executive procedures of a standard accounting can be another reason of profit (earnings) management. Principles of conservative and matching can also be resulted in benefit (earnings) management (Ahmadi, 2015). Earnings management is one important aspect of the quality of financial reporting and the main issue among all stakeholders of the company. Because the profit is one of the important criteria for performance evaluation, therefore any interference that makes the accuracy of the reports distort, could be affective on users' decisions of financial reports (Zengin and Ozkan, 2010).

Capital structure of issues that is very important in banking era. The relevance of capital structure of banks with credit risk and

cost of capital creates a paradoxical interest in order to reduce the proportion of capital to achieve more profits or raise capital to address the risk of the default. Therefore, to ensure the safety of domestic and international monetary and financial system, a set of rules by domestic and international institutions responsible for this situation and has been developed and implemented. On the other hand, in a world-class now capital structure of banks has been strictly placed under the regulation and legislation. Increased use of financial leverage has increased the risk of the bank, thus creates higher capital requirements, on the other hand in the accounting literature of those cases which its relationship with earnings management with regard to its role in the opportunistic behavior by managers has been reviewed is the financial leverage. High financial leverage potentially increases profit management through the use of accruals of profit and other accounting choices that increase the profit. Ease of converting assets to cash liquidity is called bank liquidity. In the banks with high liquidity, the ratio

of capital to total assets is higher and it is expected that the capital adequacy of these banks be more than other banks, on the other hand, high liquidity makes it possible that the manager in the absence of proper corporate governance structure, manipulate the earnings (profit) (Gombolaa et al., 2016). Moreover, in recent years, Iran has suffered numerous financial crises, including the crisis of drastic changes in the exchange rate in 2011. The crisis of 2011 has created significant effects on sales, profitability, liquidity and capital structure of the company. The effects of reduced profitability of companies can also be effective on the collection of receivables, profitability and performance of banks and increases the motivation of earnings management through accruals in them, so evaluation of earnings management of banks in the financial crisis of particular importance. So the main question is whether the leverage and liquidity ratios significantly impact on earnings management and investment of banks listed on the Tehran Stock Exchange?

2. THEORETICAL FOUNDATIONS

2.1. Profit (Earnings) Management

Earnings management is done primarily through discretionary accruals. The accruals include difference between accounting earnings and its cash component (operational cash flow). The accruals are divided into discretionary accruals and nondiscretionary accruals components. Discretionary components of accruals include those items (accruals) which management is unable applied controls to them and discretionary components of accruals include those accruals which the management applies control on them and can delay or eliminate them or accelerate the registration and identification of them. Since the discretionary accruals are controlled by management of and are applicable by management, the discretionary accruals are used as an indicator of earnings management (Ahmadi, 2015).

In the accounting literature various definitions of profit (earnings) management have been that some of them are mentioned below.

According to Schipper (1989) earnings management includes targeted intervention at the external financial reporting process to obtain personal gain.

Scott (1997) defines the earnings management as an artificial manipulation of benefit by management to achieve the expected level of profit for some specific decisions. In their view, the main motivation of earnings management is the investors' assume management about the entity.

In general it can be said that earnings management is informed action taken by management about earnings report to achieve specific goals so that it is consistent with the principles and procedures of accounting. Although these definitions are widely accepted but the operational application of these definitions is a little difficult, because intention of management does not provide objective evidence (Khurram, 2014).

2.2. Bank Capital Adequacy

Appropriate and adequate capital is one of the necessary conditions for maintaining the health of the banking system and each bank

and credit institutions to ensure the stability and sustainability of their activities should maintain always an appropriate ratio between capital and risk in assets (Javaheri, 2014). Banks long ago, because giving loan have been faced several risks. To counter these risks, the Banking Supervision Committees working in Basel in Switzerland, in 1988 agreements released minimum capital standards for banks activities. It is clear that from that date major changes have been occurred in the financial markets. Banks have long, because lending has faced several risks.

To counter this risk, the Committee for Banking Supervision in Basel in Switzerland, in their 1988 agreements set minimum capital standards for banks released activities. For example, the development of concepts and models of credit risk have facilitated the design of new financial instruments and pricing methods and this has been followed by careful development of financial markets (Capital Adequacy Regulations, 2003).

Capital adequacy ratio is a ratio to measure the functional health and financial stability of financial institutions and banks. Banks should have enough capital to cover the risk arising from their activities and ensure that damages aren't transferred to depositors. So, they should have the minimum amount of capital to cover their own operational risks (Bahraminasab, 2013). Capital adequacy ratio is one of the Bank's Performance Indicators which has been set to assess the risk management of banks of member countries of Organization for Economic Cooperation and Development. Capital adequacy ratio in accordance with regulations of the Iran Central Bank capital adequacy ratio is defined as follows (Capital Adequacy Regulations, 2003).

Capital adequacy ratio is the quotient of dividing base capital to total weighted assets by risk factors in terms of percentage which is calculated from the following equation:

Equation 1

$$\text{Initial capital (main) + capital supplement (sub)} \\ = \frac{\text{Capital adequacy}}{\text{Weighted assets by risks}} \quad (1)$$

The base capital of the bank in accordance with the regulations of the central bank's capital base is the sum of the bank's primary capital and supplementary capital of the bank after the necessary deductions.

The main capital of bank, including paid bank capital, legal reserves, other reserves (excluding revaluation reserve of fixed assets and shares owned by the Bank) are spent for shares and accumulated profit (loss).

Supplementary capital includes reserves for bad debts, revaluation reserve of fixed assets and reserve resulting from the revaluation of shares.

Another of the stocks (items) included in the capital adequacy ratio are assets that are in the denominator. Since the assets of each bank

have different risk factors, the assets items have been divided to varying risk degrees of 0, 10, 20, 50 and 100. According to Article 3 of the mentioned regulations, the minimum capital adequacy ratio for all banks and credit institutions, both governmental and non-governmental has been determined 8 percent and central bank can in cases where international standards or the need to maintain the policy of banks and credit institutions, set somewhat higher for the official or some banks and credit institutions (Capital Adequacy Regulations, 2003).

2.3. The Impact of Financial Leverage on Capital Adequacy and Earnings Management

Financial leverage implies that the company to what extent is relied to finance through debt rather than increased capital. The financial leverage refers a percentage of the assets that will be covered by debts. Banks use financial leverage to increase return of equity (Share Holders). Increased use of financial leverage increases the bank's risk and thus raises higher capital requirements. In addition once financial leverage is increased, indicates that the share of bank capital rather assets is negligible, so, the banks power to finance and thus the possibility of increasing bank assets would be reduced and in turn reduces the ratio of bank's capital (Mansourian et al., 2016).

In accounting literature, among those association with earnings management with regard to its role in the opportunistic behavior by managers has been investigated is financial leverage. Previous research results such as Beatty and Weber (2003) indicated that high financial leverage potentially increases profit management through the use of accruals and other accounting choices that increase the profit.

The reason for this is effort in order to prevent infringement in debt contracts. According to the results of the above mentioned research, it can be concluded that the more limiting factors in opportunistic behavior by managers, including pressures resulting from debt contracts and the need to repay the debt at maturity, the less level of earnings management in order to reduce the impact of fluctuations in interest as a result of these high-risk behavior (Ahmadi, 2016). The high financial leverage has the potential to increase the earnings management on the other hand increase financial leverage by reducing the opportunistic behavior of managers will be reduced earnings management. It can be said that companies are faced with increasing debt and financial leverage, can be involved with the real profit (earnings) management. Increased financial leverage can be an incentive to transfer the accrual profit (earning) management to real profit (earning) management. By increasing the financial leverage, the borrowing power of companies is reduced, so corporate executives trying to use discretionary accruals increases interest rate and provide the possibility of funding through shareholders (Gombolaa et al., 2016).

2.4. The Impact of Liquidity on Capital Adequacy and Earnings Management

The liquidity has been defined as the ability of company to act short-term obligations, in other words, the liquidity is ease of converting assets into cash. A company with sufficient liquidity

has sufficient current assets to cover its current obligations. As a result, if a company has sufficient liquidity, may reduces the risk of bankruptcy because reserve sufficient cash to cover its obligations. Liquidity is also an important factor in the costs of the financial crisis (Sibilkov, 2009). If there is no sufficient liquidity of a company in the long term, this may lead to the liquidation and subsequently threaten the survival of the company. This will increase the costs of the financial crisis. Liquidity is an important factor in the capital structure discussion, because if firms faced with threat of bankruptcy, better able to use more debt, assuming sufficient cash assets are owned (Rao et al., 2007). With the threat of bankruptcy the company can more easily transform its liquid assets to cash requirements.

Thus, liquidity will have a significant impact on the capital structure. The results of most empirical studies suggest that liquidity is negatively correlated with leverage. As a result companies with high liquidity tend to have less borrowing (Hejazi and Khademi, 2013). Therefore, in those banks that liquidity is higher, the ratio of capital to total assets is higher and it is expected that the bank's capital adequacy is much higher than other banks (Gombolaa et al., 2016).

The existence of high liquidity makes it possible the management in the absence of proper corporate governance structure, attempts to manipulate earnings, especially in those companies with low investment opportunities and low growth (Ahmadi, 2014). According to the above mentioned, it is expected executives of banks that have a lot of liquidity, to maintain personal interests apply a greater extent of excess cash in inefficiently investments. These managers to hide the effects of such activities attempt to manage profit (earnings) (Gombolaa et al., 2016).

3. LITERATURE

Gombolaa et al. (2016) conducted a study entitled the impact of financial leverage and liquidity on capital and profit (earnings) management, evidence of American banks. Their research period was between 1999 and 2013. The results showed that after the 2008 financial crisis, leverage and liquidity ratios have a significant positive effect on earnings (profit) management of banks.

Salhuteru and Wattimena (2015) performed a study entitled review and compare the performance of public and private banks in earnings management based on CAMELS model in the State Bank of Negara in Indonesia. They used data from 2012 and 2013. The results show that in the state-owned banks, net interest margin has a significant positive impact on earnings management, while the capital adequacy ratio and market risk has a significant negative impact on bank earnings management. In private banks, net profit margin and return on assets have a significant positive impact on earnings management and capital adequacy ratio and the ratio of loans to deposits have a negative impact on earnings management.

Rusmin et al. (2014) in a study entitled the impact of surplus free cash and audit quality on earnings management, evidence of the developed countries, examined these variables in the period between 2005 and 2010 and extracted their data from exchange of

three countries including Indonesia, Malaysia and Singapore. Their research results showed that audit quality is negatively related to earnings management, free surplus cash is positively related to earnings management, the results also showed audit quality has no significant effect on the relationship between free surplus cash and earnings management.

Reina et al. (2009) in a study entitled free surplus cash flows, earnings management and the Audit Committee addressed this issue to what extent the free cash surplus is related to earnings management. The results show that the independent audit committee helps the company with free cash flow, to monitor earnings management practices.

Mansourian et al. (2016) examined the relationship between financial accounting ratios and capital adequacy ratio in the banking network (Iran), case study of public, private and the principal 44 commercial banks. Their study period was 2006-2011. The results indicate a positive and significant relationship between the size of banks with capital adequacy ratio and significant negative relationship between financial leverage and capital adequacy ratio. Return on assets has a significant positive relationship in private group and a negative significant in state-owned commercial banks. The Return on equity has also a positive and significant relationship between state-owned commercial banks and negative and significant between private banks and capital adequacy.

Mohammadjany and Sadeghi (2015) in study entitled the impact of excess (surplus) free cash flow on earnings management and the Audit Committee role using data of 87 Companies of study during 2005-2011 years. The results indicate that a direct significant relationship between earnings management and surplus free cash flows.

Ahmadi (2015) in a study entitled the relationship between restrictions on financing, financing decisions and free cash flow risk with varied profit (earning) management. To this end, the research population including companies listed on Tehran stock exchange during 2009-2013 and 107 companies were selected. The results showed that there is a positive and significant correlation between financial constraints and free cash flow risk and earnings management and also between financial leverage and real profit (earnings) management there is a significant positive relationship. In addition, between financial leverage and the profit (earnings) management there is a significant negative relationship and there is a significant negative relationship between financial leverage general levels of earnings management.

Hejazi and Khademi (2013) examined the effect of economic factors and the characteristics of the company on the capital structure of companies listed on the Tehran stock exchange and 92 companies in the years between 2001 and 2009 were studied. The results showed that there is a significant negative relationship between capital structure of the companies and liquidity and inflation, but between the capital structure of companies and asset structure, the size of company and economic growth, there is a significant positive relationship.

Mehrani and Bagheri (2009) in a study entitled the effect of free cash flows and institutional shareholders on earnings management using data of a sample of 90 companies during 2000-2006 years. The results show that there is a direct relationship between profit management and high free cash flow in companies with low growth, but no significant relationship was found between earnings management and institutional shareholders in companies with high free cash flow and low growth.

4. METHODOLOGY AND STATISTICAL POPULATION

This study in terms of is an applied one and the study method is descriptive research based on multivariate linear regression analysis where in integrated and combined data analysis has been. The required data have been gathered by CD (provided by Tadbirpardaz Company) and Codal site. Data analysis was conducted using the software Eviews. The study population included the banks listed on the Tehran Stock Exchange during the period 2011-2016. Considering the limited number of banks listed on the stock exchange, there was no need for sampling and the total statistical population has been studied. Thus, 14 banks have been investigated in the research period and according to the period of 6 years, a total of 84 banks have been included in the study.

5. HYPOTHESES AND RESEARCH MODEL

According to the theoretical fundamentals of research and its history, the research hypotheses are formulated as follows:

First hypothesis: Financial leverage has a significant impact on the bank's earnings management.

Second hypothesis: Liquidity has a significant effect on bank earnings management.

Third hypothesis: Financial leverage has a significant impact on the capital adequacy of banks.

Fourth hypothesis: Liquidity significant impact on the capital adequacy of banks.

The regression model of research hypotheses has been done by modeling from Rusmin et al. (2014) as the equations 2-5:

$$DAC_{it} = \alpha_0 + \alpha_1 LEV_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it} \quad (2)$$

$$DAC_{it} = \alpha_0 + \alpha_1 LQ_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it} \quad (3)$$

$$CA_{it} = \alpha_0 + \alpha_1 LEV_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it} \quad (4)$$

$$CA_{it} = \alpha_0 + \alpha_1 LQ_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it} \quad (5)$$

In the above mentioned equations, DAC is discretionary accruals (earnings management), LEV, financial leverage, ROE, return on equity, CFO, operating cash, INS, institutional shareholders dominated, SIZE, size of the bank, BSIZE, board size, LQ,

liquidity of bank, CA capital adequacy and ε_{it} is remaining component of model.

6. THE MEASUREMENT OF RESEARCH VARIABLES

6.1. The Independent Variables Are

- Financial leverage (LEV): LEV is calculated through dividing total debt to total bank's assets.
- The liquidity of banks (LQ): Bank liquidity (6) is calculated as the follow: Equation 6

$$\text{Liquidity} = \frac{\text{Cash} + \text{Short-term investments} + \text{Short-term receivables}}{\text{Short-term debt}} \quad (6)$$

6.2. Dependent Variable

- Profit (earnings) management (DAC): The earnings management is through discretionary accruals (DAC). Based on studies conducted by Dechow et al. (1995) modified Jones model is the most powerful model to measure earnings management. Accordingly, in the current research the mentioned model has been used to calculate discretionary accruals and following the research Salhuteru and Wattimena (2015) some adjustments have been applied for the possibility of using it in the bank. In the modified Jones model, firstly all the accruals are calculated as follows (Dechow et al., 1995):

$$\text{TAC}_{it} = E_{it} - \text{OCF}_{it} \quad (7)$$

TA_{it} : The total accruals i in year t

E_{it} : Operational profit for the company i in year t

OCF_{it} : Cash flow from operations for the company i in year t .

After the calculation of all the accruals in the form of a combination (for the companies' year), the parameters of α_1 , α_2 , α_3 to determine the nondiscretionary accruals, will be estimated through the following formula:

$$\frac{\text{TAC}_{it}}{\text{A}_{it-1}} = \alpha_1 \frac{1}{\text{A}_{it-1}} + \alpha_2 \frac{\Delta \text{REV}_{it}}{\text{A}_{it-1}} + \varepsilon_{it} \quad (8)$$

Where in:

TA_{it} : The total accruals of company i in year t

A_{it-1} : Book value of total assets of the company i at the end of the year $t-1$

ΔREV_{it} : The change in the sales revenue of company i between t and $t-1$ years

ε_{it} : The unknown effects of random factors

α_1 , α_2 , α_3 : Estimated parameters of the company i .

After calculating the parameters α_1 , α_2 , α_3 by the least squares method in accordance with the following formula, the non-discretionary accruals are determined as follows:

$$\text{NDA}_{it} = \alpha_1 \frac{1}{\text{A}_{it-1}} + \alpha_2 \frac{\Delta \text{REV}_{it}}{\text{A}_{it-1}} \quad (9)$$

Where in:

NDA_{it} : Non-discretionary accruals of company i in year t

ΔREC_{it} : Change in accounts receivable of company i between t and $t-1$.

Finally, the discretionary accruals (DAC) after determining the NDA are calculated as follows:

$$\text{DAC}_{it} = \frac{\text{TAC}_{it}}{\text{A}_{it-1}} - \text{NDA}_{it} \quad (10)$$

- Bank capital adequacy (CA): The capital adequacy of banks has been extracted from the reports of the board of directors and in some cases that some banks have not released capital adequacy from their board of directors report, the capital adequacy ratio is calculated from equation (1).

6.3. Control Variables

- The return on equity (ROE): ROE is calculated through dividing operating cash on total assets.
- Cash flow operating (CFO): CFO is calculated through dividing the operating cash to total assets.
- The percentage of institutional shareholders (INS): INS is the total shares held by institutional shareholders. Institutional shareholders is the sum of the percentage shares of the Company owned by banks, insurance companies, social security organization, pension funds, government institutions, investment companies and holding companies.
- The size of the bank (BSIZE): BSIZE is calculated based on the natural logarithm of total assets.
- The board size (BSIZE): BSIZE is calculated by the total number of board members.

7. RESULTS

7.1. Descriptive Statistics and Correlation of Variables

In order to learn more about samples and variables, a summary of descriptive statistics of study variables has been calculated. Table 1 gives an overview of descriptive variables.

In a regression model, in the case of high correlation between the independent variables, may lead to a distortion of the results. The high correlation means intense correlation meaning more than 0.50. As can be seen in Table 2, there is no correlation >0.50 .

7.2. The Test to Determine the Type of Data

To test the data must firstly the pool or panel of the data is recognized. For this the F Limer test is used. If the significance level is >0.5 , the data are Panel and otherwise are pool (combined). As can be seen in the Table 3, in all hypotheses significance level of F Limer test is >0.05 and data are from the type of panel. After determining the type of data, the fixed and random effects of them must be determined. For this purpose the Hausman test is used, it

Table 1: Descriptive statistics of variables

Variable	Mean	Median	Maximum	Minimum	SD	Skewness coefficients
DAC	0.003	0.003	0.193	-0.174	0.067	0.332
CA	10.244	9.375	24.710	2.122	2.729	1.031
LEV	0.919	0.928	0.986	0.814	0.040	-0.783
LQ	1.181	1.093	2.883	0.476	0.395	1.073
ROE	0.174	0.170	0.457	-0.595	0.126	-1.453
CFO	0.028	0.018	0.213	-0.103	0.047	0.643
INS	0.483	0.420	0.960	0.070	0.289	0.088
SIZE	18.938	19.062	21.296	16.146	1.315	-0.222
BSIZE	5.250	5	7	4	0.942	0.613

Table 2: The results of correlation coefficient test

	LEV	LQ	ROE	CFO	INS	SIZE	BSIZE
LEV	1						
LQ	0.37	1					
ROE	-0.278	-0.127	1				
CFO	-0.299	-0.343	0.295	1			
INS	0.065	0.05	-0.67	-0.12	1		
SIZE	0.284	-0.147	-0.026	-0.177	0.233	1	
BSIZE	-0.348	-0.009	0.293	0.124	-0.12	0.036	1

the significance level of Hausman test is >0.05 , the data has fixed effect and otherwise has random effects.

7.3. Research Hypotheses Test

- a. First hypothesis: Financial leverage has significant impact on the bank's earnings management.

According to calculated probability of statistics F in Table 4 (significance of model 0.0000) it is determined that the model is significant and at least one of the coefficients of the regression model is opposite of zero (positive). The estimated Durbin Watson value is equal to 1.568 and as the calculated value ranging between 1.5 and 2.5 therefore, this amount indicates that between the residuals there is no correlation of first type. Given that significance level of independent variable of financial leverage (LEV) is equal to 0.325, a value that is <0.05 , thus, the results of model indicate that at the 95% confident level, financial leverage has significant effect on the dependent variable of bank earnings management and given that the independent variable coefficient is positive and equal to 0.282, it is clear that financial leverage has positive and significant effect on the dependent variable of earnings management. Thus it can be concluded that when the bank's financial leverage is increased, and the level of borrowing and debt in banks are increased, the possibility of earnings management is also increased, thus, the first hypothesis is confirmed and financial leverage has a significant positive effect on earnings management of banks. The adjusted value of the determination coefficient in the estimated results of regression model of this hypothesis is equal to 0.868 that this value indicates that about 87% of the dependent variable explained by the independent and control variables.

- b. The second hypothesis: The liquidity has a significant effect on bank earnings management.

According to calculated probability of statistics F in Table 5 (significance of model 0.0000) it is determined that the model is significant and at least one of the coefficients of the

regression model is opposite of zero (positive). The estimated Durbin Watson value is equal to 1.616 and as the calculated value ranging between 1.5 and 2.5 therefore, this amount indicates that between the residuals there is no correlation of first type. Given that significance level of independent variable of bank liquidity (LQ) is equal to 0.0006, a value that is <0.05 , thus, the results of model indicate that at the 95% confident level, bank liquidity has significant effect on the dependent variable of bank earnings management and given that the independent variable coefficient is positive and equal to 0.029, it is clear that bank liquidity has positive and significant effect on the dependent variable of earnings management. Thus it can be concluded that when the bank liquidity is increased, and the level of borrowing and debt in banks are increased, the possibility of earnings management is also increased, thus, the second hypothesis is confirmed and bank liquidity has a significant positive effect on earnings management of bank. The adjusted value of the determination coefficient in the estimated results of regression model of this hypothesis is equal to 0.830 that this value indicates that about 83% of the dependent variable explained by the independent and control variables.

- c. The third hypothesis: Financial leverage has a significant impact on the capital adequacy of banks.

According to calculated probability of statistics F in Table 6 (significance of model 0.0000) it is determined that the model is significant and at least one of the coefficients of the regression model is opposite of zero (positive). The estimated Durbin Watson value is equal to 1.616 and as the calculated value ranging between 1.5 and 2.5 therefore, this amount indicates that between the residuals there is no correlation of first type.

Given that significance level of independent variable of financial leverage (LEV) is equal to 0.0003, a value that is less than 0.05, thus, the results of model indicate that at the 95% confident level, financial leverage (LEV) has significant effect on the dependent variable of capital adequacy and given that the independent variable coefficient is negative and equal to -32.845, it is clear that financial leverage (LEV) has negative and significant effect on the dependent variable of capital adequacy. Thus it can be concluded that when the financial leverage (LEV) is increased, and the level of borrowing and debt in banks are increased, the ratio of capital adequacy of banks is decreased, thus, the third hypothesis is confirmed and financial leverage (LEV) has a significant negative effect on capital adequacy of bank. The adjusted

Table 3: Results of Limer F and Hausman test

F Limer test results				Hausman test results		
Hypothesis	Statistics	Probability	Result	Statistics	Probability	Result
First hypothesis	3.380	0.0006	Panel	30.521	0.0000	Fixed effect
Second hypothesis	2.604	0.0058	Panel	11.976	0.0625	Random effect
Third hypothesis	10.370	0.0000	Panel	22.544	0.0010	Fixed effect
Fourth hypothesis	21.845	0.0000	Panel	8.586	0.1982	Random effect

Table 4: Results of testing regression model significance of first hypothesis

$DAC_{it} = \alpha_0 + \alpha_1 LEV_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it}$			
Variables	Model coefficients	T-statistics	Significance
Fixed value of model	0.827	4.478	0.0000
Financial leverage (LEV)	0.282	2.185	0.0325
Return on equity (ROE)	0.061	1.993	0.0505
Operating cash flow (CFO)	-1.369	-16.859	0.0000
Institutional stockholders ownership (INS)	-0.118	-1.086	0.2813
Firm size (SIZE)	0.056	-7.657	0.0000
Board size (BSIZE)	0.003	0.296	0.7681
The coefficient of determination of model (R ²)	0.897	Model significance	0.0000
The adjusted coefficient of determination of model (Adj-R ²)	0.868	Durbin Watson	1.568
Goodness of fit (F statistic)	29.904	The number of observations	84

Table 5: Results of testing regression model significance of second hypothesis

$DAC_{it} = \alpha_0 + \alpha_1 LQ_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it}$			
Variables	Model coefficients	T-statistics	Significance
Fixed value of model	0.371	5.615	0.0000
Bank liquidity (LQ)	0.029	3.581	0.0006
Return on equity (ROE)	0.099	3.790	0.0003
Operating cash flow (CFO)	-1.245	-16.639	0.0000
Institutional stockholders ownership (INS)	0.014	0.846	0.3998
Firm size (SIZE)	-0.021	-6.739	0.0000
Board size (BSIZE)	0.004	0.980	0.3301
The coefficient of determination of model (R ²)	0.842	Model significance	0.0000
The adjusted coefficient of determination of model (Adj-R ²)	0.830	Durbin Watson	1.616
Goodness of fit (F statistic)	68.577	The number of observations	84

value of the determination coefficient in the estimated results of regression model of this hypothesis is equal to 0.879 that this value indicates that about 88% of the dependent variable explained by the independent and control variables.

- d. Fourth hypothesis: The liquidity has a significant impact on the capital adequacy of banks. According to calculated probability of statistics F in Table 7 (significance of model 0.0175) it is determined that the model is significant and at least one of the coefficients of the regression model is opposite of zero (positive). The estimated Durbin Watson value is equal to 1.753 and as the calculated value ranging between 1.5 and 2.5 therefore, this amount indicates that between the residuals there is no correlation of first type.

Given that significance level of independent variable of bank liquidity (LQ) is equal to 0.5066, a value that is <0.05, thus, the results of model indicate that at the 95% confident level, bank liquidity (LQ) has no significant effect on the dependent variable of capital adequacy thus, the fourth hypothesis isn't confirmed and bank liquidity (LQ) has no significant on capital adequacy of bank.

8. CONCLUSION AND SUGGESTIONS OF RESEARCH

The results of the first research hypothesis confirmed it at 95%, so we can say that financial leverage has a significant positive effect on earnings management of banks and by increasing the degree of financial leverage, the profit management of Banks is increased. These results show that financial leverage potentially increase the profit management through the use of accruals and other accounting choices that increase the profit. The reason for this is effort in order to prevent violation of the terms of debt contracts, in other words, by increasing the financial leverage, borrowing power of companies is reduced, so corporate (companies) executives try using discretionary accruals increase profits and provide the possibility of funding through shareholders, therefore high degree of financial leverage potentially increases the earnings (profit) management (Gombolaa et al., 2016). The results of the second hypothesis confirmed this hypothesis at 95%, so we can say that the bank liquidity has a significant positive effect on earnings (profit) management of banks and by increasing the amount of liquid assets to short-term debt, the likelihood of earnings management banks increases. These results indicate

Table 6: Results of testing regression model significance of third hypothesis

$CA_{it} = \alpha_0 + \alpha_1 LEV_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it}$			
Variables	Model coefficients	T-statistics	Significance
Fixed value of model	58.358	4.706	0.0000
Financial leverage (LEV)	-32.845	-3.787	0.0003
Return on equity (ROE)	0.097	0.047	0.9623
Operating cash flow (CFO)	-16.123	-2.960	0.0043
Institutional stockholders ownership (INS)	9.094	1.240	0.2194
Firm size (SIZE)	-0.141	-2.429	0.0179
Board size (BSIZE)	0.049	-0.067	0.9461
The coefficient of determination of model (R ²)	0.906	Model significance	0.0000
The adjusted coefficient of determination of model (Adj-R ²)	0.879	Durbin Watson	2.393
Goodness of fit (F statistic)	32.755	The number of observations	84

Table 7: Results of testing regression model significance of fourth hypothesis

$CA_{it} = \alpha_0 + \alpha_1 LQ_{it} + \alpha_2 ROE_{it} + \alpha_3 CFO_{it} + \alpha_4 INS_{it} + \alpha_5 SIZE_{it} + \alpha_6 BSIZE_{it} + \varepsilon_{it}$			
Variables	Model coefficients	T-statistics	Significance
Fixed value of model	30.779	3.176	0.0021
Bank liquidity (LQ)	0.431	0.667	0.5066
Return on equity (ROE)	0.919	0.416	0.6779
Operating cash flow (CFO)	-6.310	-1.016	0.3125
Institutional stockholders ownership (INS)	2.829	0.782	0.4366
Firm size (SIZE)	-1.331	-2.953	0.0042
Board size (BSIZE)	0.537	0.771	0.4426
The coefficient of determination of model (R ²)	0.176	Model significance	0.0175
The adjusted coefficient of determination of model (Adj-R ²)	0.112	Durbin Watson	1.753
Goodness of fit (F statistic)	2.759	The number of observations	84

that manipulation of profits in the banks with much liquidity is more than other banks and bankers that possess great liquidity to keep personal interests apply a greater extent of surplus cash in dysfunctional investments and to hide the effects of such activities, attempt to manage profit (earning) (Gombolaa et al., 2016). The results of the third hypothesis confirmed it at 95%, so it can be said that financial leverage has a negative and significant effect on the capital adequacy of banks and by increasing the degree of financial leverage, the capital adequacy of banks is reduced. These results show the increased use of financial leverage increases the bank's risk and thus raises higher capital requirements. In addition, once the financial leverage is increased, indicates that the share of bank capital to assets is negligible, so the banks power of the financing and thus the possibility of an increase in bank assets are reduced, leading to reduced bank's capital (Mansourian et al., 2016). The results represent the fourth hypothesis was not confirmed this hypothesis at 95%, so it can be said that the bank's capital adequacy does not have a significant effect on bank liquidity. The results of fourth hypothesis indicate disapproval of it at 95%, so we can say that the bank's liquidity has no significant effect on bank capital adequacy.

The results of the current research are consistent with the results of research conducted by Gombolaa et al. (2016), Rusmin et al. (2014) and Ahmadi (2015). The results of research conducted by Gombolaa et al. (2016) showed that after the 2008 financial crisis, the ratios of leverage and liquidity have a significant positive effect on earnings management of banks. The results of study performed by Rasmin et al. (2014) showed that surplus free cash is positively related to earnings management. The results of research

conducted by Mansourian et al. (2106) showed that there is a significant negative relationship between financial leverage and capital adequacy ratio, and the results of Ahmadi (2015) showed a significant positive relationship between financial leverage and real profit (earnings) management. Given to the results of the first and second hypothesis of this study showed that the degree of financial leverage and banks liquidity have a significant positive effect on earnings management of banks, so investors and capital market participants are recommended that during releasing quarterly reports and annual reports of banks, focusing on the mentioned ratios, evaluate the possibility of using discretionary accruals and earnings management of banks to assess and once analyze the earnings (profit) quality and the quality of financial reporting, the ratios of financial leverage and liquidity as factors that positively are related with earnings (profit) management to be Specially considered. In addition, according to the results of third hypothesis, the financial analysts are recommended that once analyze the bank's capital, consider (pay attention) the financial leverage as a factor that reduces the bank's capital adequacy ratio.

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