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The effect of risk management and corporate governance on Iranian banks performance

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Abstract

This study investigates the effect of corporate governance and risk management on financial bank performance. For this purpose, the data of 22 banks for the period of 2011 to 2015 is collected. The multivariate regression model has been employed to test the hypotheses. The results indicate that there is a significant relationship between net margin and return on assets with the risk committee variable. Also, the impacts of board size on net interest margin and return on assets are statistically significant. In addition, results reveal that non-executive board member's variable has a significant effect on return on assets and return on equity.

Keywords: Corporate governance, risk management, performance, Iran

1. Introduction

Developments in the business environment of financial markets and businesses enterprises have led to the emergence of corporate governance over the last few decades. Generally, corporate governance can include legal, cultural, and institutional arrangements that determine the direction of movement and performance of companies (Saqafi, Talebi Najafabadi, 2016).

The imperative of corporate governance stems from the conflict of interest of stakeholders in the corporate structure. The conflict of interest is due to two main reasons: first, each stakeholder has different goals and preferences, and secondly; each one does not have complete information about other's actions, knowledge and preferences. Obviously, this separation, with the assumption of the absence of effective mechanisms and executive of corporate governance, will create the circumstances for the managers to act in their own interests, not necessarily to provide the interests of the shareholders.

The basic and important assumption in the corporate governance theory of agency is that verification of the brokers' work by the owners is very difficult and costly. One of the most important and, at the same time, most effective methods for this purpose are independent auditing. This assumption is the answer to the question of how "stakeholders can control the management of the company and measure their performance."

Basel Committee Banking Supervision has recommended that banking supervision focus more on strengthening the internal control system and continuous evaluation of their effectiveness. Due to the unique role of banks in the national economy and in the financial system, banking supervisors, governments, depositors and guarantors of depositors are considered as stakeholders. For this committee, the main responsibility of effective corporate governance lies with the board of directors, which supported by the supervisory units, and also lies with the board of directors of the bank. (Saif, 2014) [9].

In developing countries, it seems that the establishment of corporate governance in banks is more important than the establishment of corporate governance in other financial institutions. The existence of a weak corporate governance in the bank would reduce confidence in the ability of the bank to manage its assets and liabilities (Taghavi, *et al.* 2013) [12]. Because of their intermediary role, banks have a high ratio of debt to asset and are more risk averse. In order to control the bank's risk, and effective performance alongside internal auditing, banks require a unit called risk management, which is a key component of the bank's second-level of defense. It unit is responsible for monitoring risk-taking activities across the bank and for this purpose, it is necessary to have sufficient authority within the organization. The risk management can lead to ensuring the utilization of resources, valuing existing opportunities,

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and maximizing achievements.

Banks must establish an independent and effective risk management unit under the guidance of the chief risk officers who has credibility, independence, sufficient resources, and has access to the board. The chief risk officer is the major responsible for monitoring the establishment and implementation of a risk-management unit, policies, processes, quantitative models, and if necessary, reports that its aim is to ensure of the advantages and efficiency of risk management for supporting the strategic goals of the bank in line with their optimal performance.

The chief risk officer is major responsible for advising the board of directors on monitoring and wide overseeing the bank's risk taking, risk-taking statement and explanation of risk range. The chief risk officer should intervene in the management with regard to monitoring performance of risk-taking, observing range of risk and actively participate.

Since performance in the banking system is an important factor in attracting financial resources, and also the issue of corporate governance in the Iranian financial market is a relatively new issue that has been considered since 2001, so in assessing the performance of Iranian banks, the issue corporate governance is important. Therefore, the present study, considering the corporate governance framework and the risk in the banking system of Iran, will examine the effect of these two indicators on the performance of banks accepted in Tehran Stock Exchange.

The rest of this study is organized as follows: while the next section reviews related previous works carried out by researchers, the section that follows is on the methodology adopted. This is then followed by the analyses and the discussion of results while the last section is on conclusions.

2. Literature Review

This section presents a brief review of empirical works that have been done in the area of study: Chitan (2012) [2] examined how external corporate governance, namely prudential supervisory measures such as capital requirements, classification of credits and provisioning specific credit risk, liquidity of banks and deposit insurance affects the performance and development for the banking sector during the period 2004-2011. Results indicate that the influence on bank performance is different from that on bank development and the need for more stringent requirements in terms of equity and the establishment of provisions related with the debtors' probability of default in order to limit the risk and to improve financial performance.

Salim *et al*. (2016) [10] studied the relationship between corporate governance and the efficiency of Australian banks between 1999 and 2013, using two-stage double-bootstrap data envelopment analysis. Findings show improvements in the technical efficiency of the banking industry after the 2003 introduction of the Principles of Good Corporate Governance, but no statistically significant impact of the GFC. Results also indicate that board size and committee meetings have robustly significant and positive effects on efficiency.

Oluwafemi & Obawale, (2010) [7] examined the relationship between the risk management and financial performance of commercial banks in Nigeria inferred that there is a critical relationship between bank performance and risks administration. The study also concluded that better risk

management in such as management of funds, reducing unnecessary costs such as doubtful advances and obligation value proportion examination bring about higher financial performance.

Asgarnezhad Nouri & Emkani (2017) [1] investigated the impact of risk management on financial performance in Tehran Stock Exchange during 2008- 2013. The findings show that effective risk management has a positive impact on return on asset and market value growth. Financial leverage simply plays a mediating role in relationship between effective management of risk and return on assets. Mediating role of intellectual capital was also merely verified regarding the relationship between effective risk management and market value growth.

Tariverdi & Damchi Jelodar (2012) [13] examined the relationship between risk management and company performance. The results show that the two variables of risk management factors, namely, industry competitiveness and company size, have a positive relationship with the firm's performance. In contrast, two other variables of risk management factors, namely, environmental uncertainty and board supervision, have not a relationship with the firm's performance. In addition, the results of the main hypothesis test show that in general, there is the not relationship between risk management and firm's performance.

Dehghan Nistanaki *et al*. (2015) [3] examined relationship between Corporate Governance and bank's Performance during 2009-2014. The result showed that the variables of ownership concentration, management ownership and institutional ownership have significant relationship with corporate governance in Tehran Stock Exchange.

Rahimian, *et al* (2014) [8], investigated the link between three major corporate governance mechanisms and Iranian bank performance during 2006 – 2011. Findings show that the corporate governance mechanisms as a whole impact bank performance. Significant shareholders have positive effect on bank performance. Also, segregations of chairman and CEO duties and audit quality are negatively associated with bank performance. However, results show that there is no meaningfull relationship between size of the board and percent of non-executing managers with bank performance.

Taghavi *et al*. (2013) [12] investigated the effect of bank ownership structure as a measure of corporate governance on bank stability indicators in some developing countries during the period 2000-2011. The ownership structure of banks as an independent variable includes state ownership, private ownership and foreign ownership. The results indicate that the state ownership of banks has a greater effect on the increase of deferred claims than private and foreign ownership. But foreign ownership is better than other types of ownership in terms of bank profitability ratios.

Vakili Fard & Bavandpour (2010) [14] investigated the relationship between corporate governance mechanisms and companies performance in Tehran Stock Exchange. The results indicate that There is a significant and positive relationship between the existence of institutional shareholders and the performance of companies. The major shareholders in the ownership structure of companies does not have much effect on their performance and the ratio of non-executive members of the board of directors has a significant and inverse relationship with the performance of

companies and also the quality of financial information is not related to the performance of companies.

Hassas Yeganeh *et al.* (2009) [4] examined relationship between Quality of Corporate Governance and Corporate Performance in Tehran Stock Exchange. The result shows that there is not a significant relationship between quality of governance and corporate performance.

3. Methodology

This study in terms of objective is an applied research and based on data collection method is a descriptive correlation study. It is a descriptive research because it is trying to describe a situation or considering phenomenon and to understand the present situation and the correlation between the variables.

3.1. Hypotheses

This study aims to investigate the effect of corporate governance and risk management on financial bank performance in Tehran Stock Exchange during 2011 - 2015. For this purpose, the following hypotheses have been presented:

H$_1$: There is a significant association between risk management index and bank performance.

H$_2$: There is a significant association between the Non-executive board member and bank performance.

H$_3$: There is a significant association between board size and bank performance.

3.2. Data and Sample Selection

Required data were collected from financial statements of selected banks, software Rahavard Novin, and site of Tehran Stock Exchange. To analyze data of the research, descriptive and inferential statistics were adopted. For estimation of research models, multivariate regression method was used and E. views computer software, version 9 has been used for result's derivation. Statistical population includes all banks listed in the Tehran stock exchange market during the years 2011 to 2015. In order to select the sample, following criteria has been considered: 1) The end of their fiscal year is March 19th of each year, 2) Their membership in the stock exchange since 2011, 3) Being active during the time domain between 2011-2015, and 4) In the years mentioned, they have not changed their activities or change their fiscal year. According to the above conditions, 22 banks were selected.

3.3. Model Specification

The following econometric models are used to test the hypotheses:

$$NIM_{it} = \alpha_0 + \alpha_1 \, CGI_{it} + \alpha_2 \, BS_{it} + \alpha_3 \, NONEX_{it} + \alpha_4 \, D/A_{it} + \alpha_5 \, L/A_{it} + \alpha_6 \, M/B_{it} + \mathcal{E}_i \quad (1)$$

$$ROA_{it} = \alpha_0 + \alpha_1 \, CGI_{it} + \alpha_2 \, BS_{it} + \alpha_3 \, NONEX_{it} + \alpha_4 \, D/A_{it} + \alpha_5 \, L/A_{it} + \alpha_6 \, M/B_{it} + \mathcal{E}_i \quad (2)$$

$$ROE = \alpha_0 + \alpha_1 \, CGI_{it} + \alpha_2 \, BS_{it} + \alpha_3 \, NONEX_{it} + \alpha_4 \, D/A_{it} + \alpha_5 \, L/A_{it} + \alpha_6 \, M/B_{it} + \mathcal{E}i \quad (3)$$

Where

NIM = Net Interest Margin is a measurement of the gap between net interest income that is generated by commercial banks, and the amount of interests paid to their lenders (deposits), relative to the amount of their (interest earning) assets. Because there is no-interest income in our country, banks use alternative variables of "share of the bank's common income and attorney's income" in their financial statements. Therefore, in this study, net interest margin is obtained by the ratio of bank share of common income and attorney's income divided by average assets. This ratio is standard for 4.5 percent.

ROA = Return on Assets is a ratio of net income against total assets.

ROE = Return on Equity is a ratio of the net income after taxation, which is divided by equity capital.

CGI = Risk Committee as risk management-related corporate governance mechanisms. This is a dummy variable which is equal to one if the bank has a dedicated committee solely charged with monitoring and managing the risk-management efforts within the bank, and Zero otherwise.

BS = Board of Directors' Size; it shows the total number of directors in the board.

NONEX = Non-Executive Board Members; this variable will be measured by the number of the existence of non-executive board members.

M/B = Market-to-Book ratio, equals the current share price divided by the book value per share.

D/A = Debt - to - Asset ratio, equals the total debts divided by total assets.

L/A = Deposit - to - Asset ratio, equals the total deposits divided by total assets.

4. Empirical Results
4.1. Descriptive Results

Table 1 shows the descriptive statistics of the research variables. The mean is the most basic index and represents the average of the data .For example, the mean of return on assets is 0.02, which means that the average return on assets of the banks surveyed during the 5-year period was 2%. Median is another central indicator and as shown in Table 1, the median of return on equity is 0.15, which shows that about half of the banks studied had more than 15% returns and half of them had fewer returns. Maximum and minimum, respectively, represent the largest and smallest data. For example, the maximum proportion of non-executive members was equal to 6, which means that among the banks surveyed over the last five years, the highest proportion of non-executive directors was 75%. Also, the minimum of net interest margin was -3.31, which shows that among the studied banks, the minimum net interest margin was -3.31. One of the most important parameters of dispersion is standard deviation. The value of this parameter for the net interest margin is 4.11 and for asset return is 0.01, which shows the highest and lowest dispersion among research variables compared to mean, respectively. The skewness and Kurtosis coefficients are other dispersion parameters which, in descriptive mode, can be a criterion for determining the normal distribution of variables.

For example, the skewness ratio of non-executive members is 0.099, which indicates that the distribution is not symmetric and the distribution skewness is to the right. In addition, the Kurtosis of the board size is 2.89, which indicates the positive Kurtosis of this variable.

Table 1: Descriptive statistics

	ROA	ROE	NIM	CGI	BS	NONEX	L/A	M/B	D/A
Mean	0.02	0.14	3.65	2.26	5.56	2.67	0.68	1.45	0.91
Median	0.02	0.15	3.39	2.17	5.00	3.00	0.66	1.46	0.90
Maximum	0.07	0.34	32.53	3.25	9.00	6.00	0.91	3.29	0.98
Minimum	-0.01	-0.60	-3.31	1.25	3.00	0.00	0.01	0.31	0.53
Standard Deviation	0.01	0.12	4.11	0.36	1.03	1.77	0.13	0.47	0.05
Skewness	1.19	-3.34	4.88	0.09	0.69	0.10	-2.63	1.65	-4.77
Kurtosis	10.68	19.43	30.80	3.56	2.89	0.10	13.77	8.57	40.61

4.2. Correlation Coefficient Test

Table 2 shows that there is a significant correlation between the board size of directors with the net interest margin and return on assets in the level of 1% and 10%, respectively.

Table 2: Correlation coefficients

	ROA	ROE	NIM	CGI	BS	NONEX	L/A	M/B	D/A
ROA	1.00								

ROE	0.27	1.00							
	0.00	----							
NIM	-0.10	-0.33	1.00						
	0.28	0.00	----						
CGI	0.12	0.02	0.27	1.00					
	0.21	0.83	0.00	----					
BS	-0.07	0.06	0.23	0.70	1.00				
	0.47	0.52	0.02	0.00	----				
NONEX	0.29	0.00	0.06	0.38	-0.38	1.00			
	0.00	0.98	0.53	0.00	0.00	----			
L/A	0.12	-0.04	0.07	0.11	-0.05	0.02	1.00		
	0.21	0.66	0.45	0.27	0.62	0.04	----		
M/B	0.09	-0.25	0.55	0.33	0.05	0.38	0.04	1.00	
	0.33	0.01	0.00	0.00	0.61	0.00	0.07	----	
D/A	-0.08	-0.18	0.07	-0.03	-0.23	0.18	0.16	0.19	1.00
	0.40	0.06	0.50	0.79	0.01	0.06	0.10	0.05	----

4.3. Unit Root Test

As shown in Table 3, because of the significance of the Dickey Fuller statistic, the null hypothesis is based on the existence of a non- stationary in the variables; therefore, the results of the corresponding test indicate the stationary of all the variables of the research at a confidence level of 99%.

Table 3: Unit Root Test

Variables	ADF stats	Prob	Results
ROA	-5.73	0.00	I(1)
ROE	-7.54	0.00	I(1)
NIM	-4.94	0.00	I(1)
BS	-3.93	0.00	I(1)
NONEX	-6.47	0.00	I(1)
CGI	-5.32	0.00	I(1)
D/A	-6.10	0.00	I(1)
L/A	-7.60	0.00	I(1)
M/B	-5.93	0.00	I(1)

4.4. Collinearity Test

According to Table 7, it is seen that all the calculated vif coefficients for the independent variables of all three models are less than 10; therefore, we can conclude that there is no collinearity between independent variables in the models.

Table 4: Collinearity Test

Variable	Centered VIF
CGI	1.30
BS	1.31
Nonex	1.93
L/A	1.98
M/B	1.25
D/A	1.28

4.5. Hypotheses Test

In this research, three regression models are used to test each of the hypotheses. To determine test method of the regression model, we have used Chow and Hausman tests. According to the results of the Chow and Hausman tests, pooled data method is used for the second and third hypotheses models, while for the first hypothesis models the fixed-effects method is used.

4.5.1. First Model

Table 8 shows that the F statistic is 227, and its probability level is 0.00, which can be said that the model has a high level of significance in general. The adjusted coefficient is 0.94, which indicates that the independent and control variables of the research explain 94% of the dependent

variable variations. The risk committee variable has a negative and significant relationship with the net interest margin, with a coefficient equal to -0.85, which means that by increasing the unit of risk management index, the margin of net interest is reduced by 0.85 units. Also, the size of the board has a positive and significant relationship with the net interest margin and has a coefficient of 0.64, which indicates that with the increase of a unit of board size, increases the net interest margin by 0.64 units. Regarding the variable of the non- executive board members, there is no significant relationship; therefore, according to the results of estimating the first model, it can be said that the first and second hypotheses of the research are confirmed and the third hypothesis is rejected.

Table 5: regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-25.97918	3.342965	-7.771297	0.0000
M/B	0.223692	0.264890	0.844471	0.4009
CGI	-0.858066	0.190479	-4.504778	0.0000
D/A	32.28386	3.462034	9.325116	0.0000
BS	0.647087	0.160785	4.024556	0.0001
NONEX	0.026752	0.015106	1.770903	0.0804
L/A	-1.337669	0.414990	-3.223379	0.0018
AR(1)	1.240173	0.033799	36.69219	0.0000
R-squared	0.952110	Mean dependent var		26.17879
Adjusted R-squared	0.947919	S.D. dependent var		23.26644
S.E. of regression	0.592917	Sum squared resid		28.12409
F-statistic	227.2119	Durbin-Watson stat		1.664460
Prob(F-statistic)	0.000000			

4.5.2. Second Model

According to the table 8, the value of F statistic is 54 and its probability value is zero, which shows the model significant in general. The adjusted coefficient is 0.81, which indicates that the independent and control variables from the research explain 81% of the dependent variable variations. The risk committee variable has a positive and significant effect on the return on assets. More precisely, the increase of one unit in this variable leads to an increase of 0.0036 in the return on assets with 95% confidence. Also, the size of the board has a negative and significant impact on the return on assets. More precisely, with 95% confidence, the effect of a unit increase in the board size results in 0.0028 units decreased in the return on assets. Furthermore, the non- executive board members have a negative and significant effect on the return on assets. More precisely, with 95% confidence, the effect of a unit increase in the board size leads to a decrease of 0.0001 unit in the return on assets. Therefore, according to the results of estimating the second model, first, second and third hypotheses of the research are confirmed.

Table 6: Regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.041484	0.017889	2.319013	0.0229
M/B	0.002909	0.002499	1.164154	0.2478
CGI	0.003687	0.000916	4.026366	0.0001
D/A	-0.007582	0.022954	-0.330325	0.7420
BS	-0.002890	0.000897	-3.221237	0.0018
NONEX	-0.000167	8.14E-05	-2.050934	0.0435
L/A	-0.022024	0.004061	-5.423682	0.0000
AR(1)	0.882244	0.059665	14.78658	0.0000
R-squared	0.825385	Mean dependent var		0.484665
Adjusted R-squared	0.810107	S.D. dependent var		0.567307
S.E. of regression	0.005320	Sum squared resid		0.002264
F-statistic	54.02170	Durbin-Watson stat		2.085570
Prob(F-statistic)	0.000000			

4.5.3. Third Model

Table 9 reveals that adjusted R2 is 0.40, which implies that about 40 percent of the total variations in the dependent variable are explained by the model while the remaining 60 percent is caused by other factors. Non-executive board members have the positive significant effect on return on equity, and its coefficient is equal to 0.005; suggesting that 1 percent increase in Non- executive board members leads to 0.005 percent increase in return on equity. The risk committee and board size show an insignificant relationship with return on equity. Therefore, the results of third model indicate that first and second hypotheses of the research are rejected and third hypothesis is confirmed.

Table 7: Regression analysis

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	0.512236	0.480100	1.066936	0.2887
M/B	0.095611	0.022194	4.307890	0.0000
CGI	0.019551	0.024419	0.800646	0.4254
D/A	-1.000732	0.492706	-2.031092	0.0451
BS	-0.008361	0.029275	-0.285597	0.7758
NONEX	0.005100	0.001176	4.337911	0.0000
L/A	0.577371	0.127607	4.524596	0.0000
R-squared	0.440112	Mean dependent var		0.150727
Adjusted R-squared	0.404374	S.D. dependent var		0.074274
S.E. of regression	0.057323	Akaike info criterion		-2.813455
Sum squared resid	0.308873	Schwarz criterion		-2.632209
Log likelihood	149.0795	Hannan-Quinn criter.		-2.740081
F-statistic	12.31512	Durbin-Watson stat		1.137509
Prob(F-statistic)	0.000000			

5. Conclusion

In this study, the relationship between variables of risk committee, board size and number of non- executive board members as independent variables with dependent variables, including net interest margin, return on assets and equity return as performance measures were investigated. The results of the first hypothesis show that the risk committee variable has a negative significant, positive significant, and an insignificant relationship with the net margin, return on assets and return on equity, respectively. The results of the first and second models are identical to the results of Rahimian *et al*. (2014) [8], Khodadadi and Taker (2012) [5], and in the third model, with the results of the Hassas Yegane *et al*. (2009) [4], Moradi and Rostami (2012) [6]. The results of the test of the second hypothesis also show that the effects of board size on the net interest margin, return on assets and return on equity are respectively positive significant, negative significant, and insignificant. The results obtained from the second hypothesis test in the first model are similar to those of Moradi and Rostami (2012) [6], and also in the third model, with the results of Rahimian *et al*. (2014) [8] is similar. Furthermore, the results of the third hypothesis test indicate that the non- executive board member's variable has an insignificant, negative significant and positive significant relationship with the net interest margin, return on assets and return on equity respectively. The results obtained from the first and second models, respectively are identical to the results of Rahimian *et al*. (2014) [8].

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