AUDIT COMMITTEE AND RISK TAKING IN BANKS OF TEHRAN STOCK EXCHANGE

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ABSTRACT

The audit committee is one of the management mechanisms of the company, and there is little evidence regarding its role and characteristics in monitoring and managing the risk of business units. For this purpose, on the same basis, the aim of this research is to investigate the relationship between the effectiveness of the audit committee and the risk-taking of banks. In this research, the number of 14 banks admitted to the Tehran Stock Exchange has been examined in the form of combined data from 2012 to 2021. In order to test the hypotheses, panel linear and logistic nonlinear regression models were used, the findings of the research show that there is a negative and significant relationship between the effectiveness of the audit committee with the standard deviations of return on assets and the ratio of non-current facilities to total facilities. But there is no significant relationship between the effectiveness of the audit committee and the risk of bankruptcy.

KEYWORDS: *Audit Committee Effectiveness, Standard Deviations of Return on Assets, Ratio of Non-Current Facilities, Altman's Bankruptcy Risk.*

1. INTRODUCTION

In recent years, all countries are trying to accelerate their economic growth and achieve sustainable development. The research conducted in this field also indicates that financial intermediaries play an important role in realizing this. So that some economists believe that in developing countries, financial development is mainly based on improving the performance of banks and occurs in the banking sector. Because the accumulation of capital is one of the necessary conditions for economic growth, and developing countries like Iran are also facing a lack of sufficient capital that can accelerate the process of capital formation with the help of financial markets. Thus, on the one hand, these banks are one of the most important tools of growth and development, by attracting liquidity and granting facilities to efficient sectors and optimal allocation of resources, they play a decisive role in the realization of economic growth. And on the other hand, it is the capital market that transfers savings to different sectors of the national economy for investment in companies (Al-Eitan and Bani Khaled, 2019). In this regard, one of the corporate governance structures to achieve predetermined goals is the internal auditor and the audit committee. In general, auditors are people who can act on behalf of a profession that possesses the benefits of autonomy in a way that reduces heterogeneous activities and even allows practical procedures that should exist in any audit (Davis and Rothstein, 2006).In general, the internal auditor can be considered as a

new paradigm in the literature of corporate governance, based on the requirements and guidelines, the scope of its responsibilities compared to other mechanisms is expanding due to the uncertainty of the business environment. Accordingly, according to the role of the audit committee on the risk-taking of banks, this research has been presented in the sections of theoretical foundations and study backgrounds, hypotheses, methodology, findings and research conclusions.

2- Theoretical Framework and Research Background

2-1- The Theoretical Framework of the Research

A healthy and profitable banking system can better withstand economic shocks and play a stronger role in the stability of the financial system (Ekinci and Poirazeh, 2019). Explaining the factors affecting the performance of the banking system is one of the areas of interest for academic researchers, banking system managers, monetary supervisors, and economic activists (Al-Eitan and Bani Khalid, 2019).In this regard, credit risk and bankruptcy due to the connection with operational activities of banks (in the fields of loans, interbank transactions, scrap bonds, currency transactions, common shares, option transactions, issuance of guarantees and swaps) is one of the most important There are risks in the banking system, and in most cases, losses related to credit risk and bankruptcy are more than other risks. Risk, as a threat, affects the activity of banks, and in the meantime, the aforementioned risks are of double importance due to the fact that they arise from the most important banking operations, i.e. granting loans and facilities (Zhou , 2021).Credit risk, as one of the most important factors affecting the health of the banking system, is related to losses caused by non-repayment or late repayment of the principal or sub-loan by the client, "credit risk". In another definition, credit risk is the possibility of delay, doubtful collection or non-collection of facilities provided to customers. In other words, credit risk is a risk based on which the borrower is not able to pay the principal and sub-principal (loan) according to the conditions stated in the contract; That is, according to this risk, repayments are either delayed or not received (Bosle, 2018).The existence of such a risk can adversely affect the performance of banks. Therefore, in order to survive, banks must control risks and reduce their adverse effects, which requires investigating the effect of credit risk on bank performance (Susinelli, 2018).One of the most important sources of credit risk and bankruptcy is the reserve of doubtful receivables, which can be faced with considerable inefficiency in a financial institution. According to the definition, the purpose of the efficiency of the reserve for doubtful receivables is the optimal and favorable forecast of uncollectible receivables in the future, in such a way that it has the best reflection in the financial statements in terms of transparency and the quality of reported profit and capital (Anandar Jan, 2005). In other words, efficient doubtful receivables reserve is a reserve that is no less than optimal doubtful receivables reserve.Therefore, it is obvious that the reserve of doubtful receivables is a reserve that is less than the reserve of optimal receivables. For this reason, the optimal amount of reserve for doubtful debts should be based on the ratio of losses from investment on assets, the ratio of deposits to assets, the ratio of risk-weighted assets to assets, the ratio of current assets to assets and total facilities. be determined on the assets (Tsai Lin Yeh, 2010).According to Tsai Lain Yeh (2010) and Anandarjan (2005), one of the factors affecting the inefficiency of banks' bad debt reserves is bank size, non-interest income, shareholders' equity, number of branches, and capital adequacy ratio. Because the financial situation and consequently the total risk of banks varies with their size and from one bank to another, it is expected that the method of saving doubtful debts of banks is proportional to their size. Therefore, how the size of the bank affects the reserve of bad debts is the first hypothesis that should be considered and tested.In terms of non-interest income, it can be said

that the more the bank's income from sources other than the interest of the facility is, the lower the reserve for doubtful debts can be considered, due to the reduction of the risk of the entire bank due to the non-collection of claims. Therefore, if a bank, with a low fee income, has also considered a small reserve, the reserve for doubtful claims will be inefficient and misleading. Banks with a higher capital ratio accept less total risk, and hence, a lower reserve for doubtful debts can be considered for them. The number of branches and employees of the banks in the branches are in direct contact with the customers and are continuously evaluating (validating) and granting facilities to the customers. Therefore, the employees of the banks in the branches participate in the credit risk management of the branch and finally the credit risk of the whole bank. Therefore, with the increase in the number of branches, the bank's credit risk increases, so it is necessary to consider the reserve of doubtful receivables. The capital adequacy ratio is obtained from the effective factors in risk control and from the result of dividing the base capital by the total assets weighted by the risk coefficients in percentage terms (Central Bank Regulations, No. MB.1966). Reserve for doubtful debts is used in the calculation of basic capital and in case of deduction of capital adequacy ratio calculations, in such a way that with the increase of reserve for doubtful debts, capital adequacy ratio also increases. Therefore, a bank with a high capital adequacy ratio has less risk and less reserve should be considered.

On the other hand, one of the factors that can have a limiting role in the risks of the banking system is the audit committee. In general, the audit committee can be considered as a new paradigm in the literature of corporate governance, based on the requirements and guidelines, the scope of its responsibilities compared to other mechanisms is expanding due to the uncertainty of the business environment. A review of audit committee literature shows that this committee leads to improving the quality of disclosure, both mandatory (Ho , 2001) and optional (Akhtarudin and Haroun, 2010), targeting payments such as profit sharing (Bushman and Smith, 2001), Improving internal controls (Zhang , 2007), reducing profit management (Cohen and Zarvin, 2008), reducing the risk of financial distress (Rahmat and Iskandar, 2009), reducing information asymmetry (Akhtarudin and Haroun, 2010), improving performance (Bansal and Sharma, 2016) and more conservatism (Sultana, 2015).

On the other hand, Abernathy (2014) believe that the optimal role of the audit committee requires a suitable combination of characteristics that the members of this committee should have. For example, a literature review shows that the independence of audit committee members leads to increased growth opportunities and reduced reporting of consecutive losses (Klein, 2002) as well as improved disclosure and provision of information about the financial condition of companies facing financial crisis. (Carsello and Neal, 2003).In the research literature, the independence of its members is considered the cornerstone of the audit committee's effectiveness (Abernathy, 2014- Cohen and Zarvin, 2011), as well as the inhibiting factor in managers' opportunism and self-interest (Bansal and Sharma, 2016). Beasley (1996) believes that an independent audit committee is less likely to be a victim of the risks associated with financial institutions. In this regard, Abbott and Parker (2000) also state that economic units that have audit committee effectiveness are less likely to face various risks. Pomeroy (2008) also believes that the more effective the audit committee, the better their performance. Therefore, according to the above concepts, this research examines the role of the audit committee's effectiveness in banks' risk-taking.

2-2- Research Background

Nguyen (2022) in the study of audit committee structure, institutional quality and bank stability has shown that smaller audit committees with more independent members can

increase bank stability. Also, the effectiveness of the audit committee has a positive relationship with the stability of the bank. In addition, he found that the effectiveness of the audit committee basically increases the stability of the bank through the effect of reallocation for profit and motivation to maintain capital ratios. Moreover, the relationship between bank stability and audit committee effectiveness strongly depends on the health of each bank and the institutional quality of each country.

In a research, Kuang (2021) examined the monitoring of banks' risk-taking by audit committees and Shariah committees. The results of his study show that an auditor's commitment to independence, the number of meetings, and financial expertise negatively affect the risk-taking of conventional banks, which indicates that the high effectiveness of their audit committees may limit the risk-taking activities of banks. However, such relationships are not evident or observed in Islamic banks. Instead, with a different transmission mechanism, the proportion of female members and financial expertise in Sharia committees have a negative effect on risk-taking, but the size of the Sharia committee has a positive effect on risk-taking in Sharia banks. These results show that the high effectiveness of Shariah commitment can limit risk-taking behaviors in Islamic banks.

Portetti (2019) investigated the effect of the information content of profit announcements on the independence of the audit committee and concluded that there is a direct and significant relationship between the information content of the profit announcements and the independence of the audit committee.

Ikinci and Poiraze (2019) have studied the effect of credit risk on the financial performance of deposit banks in Turkey and found that there is a negative relationship between credit risk and return on assets, as well as between credit risk and return on equity. This result shows that there is a relationship between credit risk management and profitability of Turkish deposit banks. Accordingly, banks should focus more on credit risk management, especially on controlling and monitoring non-performing loans. In addition, managers should focus more on modern credit risk management techniques.

Elayatan and Bani Khalid (2019) addressed the issue of credit risk and financial performance of Jordanian commercial banks: by analyzing Patel's data, both fixed and random effect models and GLS method were used. The results show that credit risk has a significant negative effect on asset returns and equity returns. While, total deposits and bank size have a positive and significant effect on the financial performance of Jordanian commercial banks.

Susinelli (2018) examined the credit risk in European banks. This article follows the current systematic framework by examining the approaches based on valid internal ratings of banks in improving the risk management methods. They found that banks based on internal ratings are able to control and curb the increase in credit risk caused by economic recession, and this is more favorable than banks that have a standard approach.

Kalu(2018) evaluated the relationship between credit risk management techniques and financial performance of microfinance institutions and collected primary data using questionnaires and secondary data from annual reports of microfinance institutions and showed that identifying And credit risk assessment has a positive and significant relationship with financial performance, while credit risk monitoring and credit risk reduction have a balanced positive and meaningful relationship with financial performance.

Huang (2018) investigated the effect of the audit committee on the types of systematic risk in the Taiwan Stock Exchange. In this research, he found that after the initial establishment of audit committees, favorable and unfavorable systematic risk is generally insignificant in

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companies, as well as the side results of this research. It suggests that state ownership of the firm affects changes in systematic risk for low-growth firms. In particular, companies with low growth, pyramidal ownership structure, lack of family control and finally big 4 auditors face low systematic risk.

Zhao (2016) investigated the relationship between audit committee characteristics and cost of capital. The results of the research have shown that the size of the audit committee has a direct relationship, financial expertise and the number of committee meetings has an inverse relationship with the cost of capital.

De Valaminc and Sarnes (2015) have studied the relationship between audit committee characteristics and financial reporting quality. Their results showed that the characteristics of the audit committee lead to the improvement of the company's financial reporting quality.

Marufkhani (2021) presented a model to evaluate the performance of the audit committee in the capital market. The results of their research showed that in order to evaluate the performance of the audit committee in Iran's capital market, the performance of the committee can be evaluated from 8 main dimensions, including the composition of committee members, committee authority, committee charter, committee meetings, business knowledge, supervision, compliance with ethical principles and It evaluated the regulation and reporting of the committee and 63 indicators of their subcategories. Thus, among the different models of performance evaluation, self-evaluation model was selected to evaluate the performance of the audit committee in the capital market of Iran, and the self-evaluation questionnaire with dimensions and indicators resulting from this research was presented as a proposed model.

Kordmanjiri and Jafarian Sartaei (2021) investigated the relationship between the time period of the formation of the audit committee and internal audit with the error of predicting future cash flows by considering the risk tolerance of companies. The findings of their research show that there is a significant relationship between the period of formation of the audit committee and internal audit with the forecasting error of future cash flows, and the findings also show that risk tolerance has an effect on the relationship between the period of formation of the internal audit and the forecasting error. Prediction of future cash flows is effective, but the relationship between the time period of the formation of the audit committee and the error of forecasting future cash flows was not significant.

Minaei Mahmoudi and Sidi (2019) have investigated the moderating role of the auditor's report on the relationship between the effectiveness of the audit committee and the risk of falling stock prices. The results of this research show that there is a significant relationship between the effectiveness of the audit committee and the risk of falling stock prices. The auditor's report moderates the relationship between the effectiveness of the audit committee and the risk of falling stock prices.

Poursaid and Mohammadipour (2018) investigated the possibility of establishing an internal audit system based on risk and identifying relevant variables in the Islamic Azad University of Iran. The general results of the research show that in the order of human factors, structural factors and technical factors in the form of 8 variables including: organizational goals and processes, training to increase technical ability, acceptance and support of senior managers, the possibility of analyzing and prioritizing risks. Determining control weaknesses and control activities, compiling a risk-based internal audit program, conducting investigation, and presenting a risk-based internal audit report in the Islamic Azad University of Iran are the main factors of establishing a risk-based internal audit system in the Islamic Azad University.

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Kian and Faqih (2017) have investigated the effect of audit committee characteristics on company risk in a research. The audit committee is one of the management mechanisms of the company, and there is little evidence regarding its role and characteristics in monitoring and managing the risk of business units. The results of the research showed that the accounting expertise and the independence of the audit committee have a positive effect on the volatility of stock returns as a measure of risk.

3- Research Hypotheses

According to the theoretical foundations presented and to answer the research questions, the following hypotheses are proposed:

Main hypothesis (1): There is a significant relationship between the effectiveness of the audit committee and risk taking.

Sub-hypothesis (1-1): There is a significant relationship between the effectiveness of the audit committee and the standard deviations of return on assets.

Sub-hypothesis (1-2): There is a significant relationship between the effectiveness of the audit committee and the ratio of non-current facilities to total facilities.

Sub-hypothesis (1-3): There is a significant relationship between audit committee effectiveness and bankruptcy risk.

4- Research Method

In terms of its purpose, the present research is considered as applied research. The goal of applied research is to develop applied knowledge in a specific field. In other words, applied research is directed towards the practical application of knowledge. Also, in terms of data collection, this research is descriptive and correlational in terms of type. Because it examines the degree of dependence of the dependent variable and the independent variable on each other. The research method is inductive, in which the theoretical foundations and background of the research are collected through the library, articles and the Internet, and in order to reject or prove the research hypothesis by applying appropriate statistical methods, inductive reasoning is used to generalize the results. In this research, to test the hypothesis, the financial statements of the banks will be used every year. It should be noted that SPSS software (version 21) and Eviews (version 9) were used for statistical analysis.

4-1- Hypothesis Testing Model

In general, considering that in this research, the relationship between the effectiveness of the audit committee and the risk-taking of Tehran Stock Exchange banks has been investigated, therefore, the models and the method of measuring the variables are taken from Kuang's research (2021) as follows.

Sub-hypothesis test model (1):

$$Z_{it} = \beta_0 + \beta_1 ACE_{it} + \beta_2 BSIZE_{it} + \beta_3 ASSQ_{it} + \beta_4 GDP_{it} + \beta_5 DIV_{it} + \beta_6 NLC_{it} + \beta_7 TLOAN_{it} + \beta_8 \Delta LOAN_{it} + \beta_9 A\_CAPITAL + e_{it}$$

Sub-hypothesis test model (2):

$$LLP_{it} = \beta_0 + \beta_1 ACE_{it} + \beta_2 BSIZE_{it} + \beta_3 ASSQ_{it} + \beta_4 GDP_{it} + \beta_5 DIV_{it} + \beta_6 NLC_{it} + \beta_7 TLOAN_{it} + \beta_8 \Delta LOAN_{it} + \beta_9 A\_CAPITAL + e_{it}$$

Sub-hypothesis test model (3):

$ZSCORE_{it} = \beta_0 + \beta_1\,ACE_{it} + \beta_2\,BSIZE_{it} + \beta_3\,ASSQ_{it} + \beta_4\,GDP_{it} + \beta_5\,DIV_{it} + \beta_6\,NLC_{it} + \beta_7\,TLOAN_{it} + \beta_8\,\Delta LOAN_{it} + \beta_9\,A\_CAPITAL + e_{it}$

TABLE (1) NAME AND SYMBOL OF RESEARCH VARIABLES

Audit Committee Effectiveness (ACE)	GDP per capita
Standard deviations of asset returns (Z)	diversity index (DIV)
The ratio of non-current facilities to total facilities (LLP)	Changes in non-performing loans (NLC)
Altman Bankruptcy Risk (ZSCORE)	Total granted facilities (T$LOAN$)
bank size (BSIZE)	Changes in granted facilities ($\Delta LOAN$)
Facility Quality (ASSQ)	Capital adequacy (A_CAPITAL)
Model error (e)	

4-2- How to Measure Research Variables

In the following, the method of measuring each of the research variables is presented:

4-2-1- How to Measure the Effectiveness of the Audit Committee

To calculate the effectiveness of the audit committee, three criteria are used as described above: 1- the size of the audit committee, 2- the independence of the audit committee, and 3- the financial expertise of the audit committee.

This score between 0 and 3 is obtained by summing up the values obtained from the three characteristics of the audit committee; If a bank includes all three features, it is given a score of 3 and 2, 1, and 0 respectively. Accordingly, the following mathematical function is expressed:

$ACE_{it} = \Sigma\,(ACIND_{it} + ACEXP_{it} + ACSIZE_{it})$

Where ACIND is a dummy variable that will be one if the directors of the audit committee are independent at the end of the financial year and zero otherwise. To measure the independence of the audit committee, the ratio of non-official members to all members of the audit committee has been used. If this ratio is greater than the median of the independence of the audit committee, the relevant bank has the independence of the audit committee, and in this case it will get a value of one, otherwise it will get a value of zero (Zegarini, 2016 and Idris, 2018).

ACEXP: is a dummy variable that, if at the end of the financial year, more than two members of the audit committee have financial, accounting and management expertise, the number will be one and otherwise, the number will be zero (Zegarini, 2016 and Idris, 2018).

ACSIZE: It is a dummy variable that if the members of the audit committee are at least three members at the end of the financial year, they will get a number of one and otherwise a number of zero (Zegarini, 2016 and Idris, 2018).

4-2-2- How to Measure Standard Deviations of Asset Returns

To calculate this variable based on Kuang's research (2021), the following equation is used:

$$Z = \delta ROA$$

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In the above equation, ROA is the ratio of return on assets (net profit on total assets), which is used to calculate its standard deviation from three-year standard deviations.

4-2-3- How to Measure the Ratio of Non-Current Facilities to Total Facilities

This variable is obtained from the financial statements of banks, the higher the ratio, the higher the credit risk (Shaari and Naderi, 2010). In this research, the following relationship is used to calculate this variable:

$$\text{Ratio of non} - \text{current facilities to total facilities} = \left(\frac{Non - current\ facilities}{Total\ facilities\ granted} \right)$$

It should be noted that non-current facilities include the share of installments received by the bank in the overdue, overdue and doubtful category.

4-2-4- How to Measure Bankruptcy Risk

To calculate Altman's bankruptcy risk, according to Kuang's research (2021), the following steps are taken:

$$Z = 1.2\,X_1 + 1.4\,X_2 + 3.3\,X_3 + 0.6\,X_4 + 1.0\,X_5$$

where X1 is the ratio of working capital to total assets, X2 is the ratio of retained earnings to total assets, X3 is the ratio of earnings before interest and taxes to total assets, X4 is the market value of equity to total assets, and X5 is the ratio of total sales to total assets.

TABLE (2) BANKRUPTCY RISK VALUES

Bankruptcy Possibility	Domain Z
very much	$Z \leq 1.21$
weak	$1.21 < Z \leq 2.99$
does not have	$Z > 2.99$

4-2-5- Control Variables and How to Measure Them

The control variables according to Kuang (2021) are as follows:

Bank size: It is obtained from the natural logarithm of the Rial value of the bank's assets.

Quality of facilities: It is obtained from the ratio of the bank's reserves to the total facilities of the bank.

Gross domestic product per capita: It is the natural logarithm of the gross domestic product (GDP) per capita in a year.

Diversification Index: This variable actually means the share of income other than the income related to the main activity of banks; therefore, to calculate it, the net difference between interest income and other operating profits divided by the total income is used. It should be noted that after the calculation, the absolute value is obtained from this ratio and 1 minus the "absolute value of the obtained ratio" is considered as the diversity index.

Changes in Doubtful Receivables: It is obtained from the ratio of changes in the cost of doubtful receivables of banks.

Total Granted Facilities: It is obtained from the logarithm of the total granted facilities of banks.

Changes in Granted Facilities: It is obtained from the ratio of changes in total facilities granted by banks.

Capital Adequacy Percentage: The following ratio is used to measure this variable:

Capital adequacy rate

$$= \left(\frac{\text{Basic capital}}{(Items\ above\ the\ line\ *\ risk\ factor) + (\text{Conversion factor} * \text{ risk factor} * \text{ items below the line})} \right)$$

5- Society and Statistical Sample

The statistical population of this research includes the banks accepted in the Tehran Stock Exchange, and these banks are tested in the period of 2012 to 2021 has been.

1. To comply with their comparability, the financial year of the companies should end at the end of March every year.

2. During the time period of the research, they have not stopped their activities and have not changed their financial period.

3. All the information required from the banks should be available for research, the selected banks. By applying the above conditions, 14 banks have been included in the statistical sample of this research.

6- Research Findings

6-1- Descriptive Statistics of Research Variables

The results of the descriptive analysis of research variables are presented in table (3).

TABLE (3) DESCRIPTIVE STATISTICS RESULTS OF RESEARCH VARIABLES

Variable	Mean	Median	Max.	Min.	STD	Skewness	Kurtosis
Standard deviations of asset returns (Z)	0.015	0.008	0.108	0.001	0.023	0.843	2.846
The ratio of non-current facilities to total facilities (LLP)	0.184	0.160	0.478	0.016	0.121	0.937	3.099
Audit Committee Effectiveness (ACE)	2.207	2.000	3.000	0.000	0.841	-0.797	2.861
Bank Size	19.761	19.787	23.029	15.536	1.408	-0.045	2.790
Facility Quality (ASSQ)	0.068	0.053	0.318	0.015	0.061	3.169	13.270
GDP per capita	8.465	8.607	9.050	7.832	0.375	-0.350	1.986
diversity index (DIV	-0.145	0.383	0.998	-3.641	1.281	-1.497	4.260
Changes in non-performing loans (NLC	0.624	0.263	3.467	-0.775	1.156	1.245	3.538
Total granted facilities (T$LOAN$)	0.566	0.606	0.728	0.129	0.128	-1.221	4.190
Changes in granted facilities ($\Delta LOAN$	0.351	0.262	1.293	-0.153	0.335	1.376	4.480

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Capital adequacy (A_CAPITAL)	0.015
Altman Bankruptcy Risk (ZSCORE)	Year- Banks with low probability of bankruptcy: 82 Year - Banks with high probability of bankruptcy: 48
Financial expertise of the audit committee (ACEXP)	Year - Banks without financial expertise of audit committee: 41 Year - Banks with financial expertise of audit committee: 89
Independence of Audit Committee (ACIND)	Year - Banks without audit committee independence: 57 Year - Banks with audit committee independence: 73
Audit committee size (ACSIZE)	Year- Banks with less than three members in the audit committee: 5 Year- Banks with three or more members in the audit committee: 125

According to table (3), the number of bank-year observations based on balanced composite data, 140 observations were equal to 14 banks in 10 years. According to the descriptive statistics, the above indices can be divided into central indices, dispersion and other indices, where the central indices are mean and median indices, dispersion indices are standard deviation indices and other indices are The index is maximum, minimum, skewness and elongation. In short, the variable of financial expertise of the audit committee shows that the year-banks without the financial expertise of the audit committee is 41 observations and the year-banks with the financial expertise of the audit committee is 89 observations. The independence of the audit committee shows that the year-banks without the independence of the audit committee are 57 observations and the year-banks with the independence of the audit committee are 73 observations. The size of the audit committee shows that banks with less than three members in the audit committee have 5 observations and banks with three or more members in the audit committee have 125 observations. Regarding the negative skewness coefficient of some variables, it can be said that this indicates the existence of skewness to the right and the tendency of these variables to have smaller values. Also, the positiveness of the coefficients of elongation indicates that it is higher than the normal distribution and the data are around the mean is centered.

6-2- Normality Test of Dependent Variables of the Research

Since in conducting this research in order to estimate the parameters of the model, the ordinary least squares method is used and this method is based on the assumption that the dependent variables of the research have a normal distribution and its non-normal distribution leads to exceeding the assumptions of this method to estimate the parameters. Can be done, in this study, this issue is investigated through the Kolmogorov-Smirnov (K-S) test.

TABLE (4) THE RESULTS OF EXAMINING THE NORMALITY OF THE DISTRIBUTION OF DEPENDENT VARIABLES

Variable	K-Stest results					
	Mean	Std.	Positive	Negative	K-S	Sig.
Standard deviations of asset returns (Z)	0.015	0.023	0.108	0.001	1.105	0.068

The ratio of non-current facilities to total facilities (LLP)	0.184	0.121	0.478	0.016	1.079	0.087
Altman Bankruptcy Risk (ZSCORE)	Considering that the bankruptcy risk variable is measured virtually (0 and 1), it is obvious that this variable is not normal.					

According to the table above, the significance level of the Z statistic of the KS test for dependent variables (standard deviations of asset returns and the ratio of non-current facilities to total facilities) has increased to above 0.05, so the H0 hypothesis that the distribution of dependent variables is normal for sub-hypotheses The first and second are accepted and it shows that the mentioned variables have a normal distribution, therefore parametric statistical methods are used to test the hypotheses, but considering that the bankruptcy risk variable is measured virtually, it is obvious that this The variable is not normal and non-parametric statistical methods should be used to test the hypotheses related to this variable.

6-3- The Results of the Research Hypothesis Test

The results of the default test and the regression test are as follows.

6-3-1- Flimer Statistic Results For Research Hypotheses

In order to determine which method (consolidated or panel data) should be used to fit the model, we should test the F-limer or Chau test, considering that the significance level of the F-limer statistic is lower than the acceptable error level (5 percent). so the panel data method is preferable to the pooled data method.

TABLE (5) THE RESULTS OF FLIMER STATISTICS FOR RESEARCH HYPOTHESES

Hypotheses	The value of the statistic	Significance level
The first sub-hypothesis	4.845	0.000
The second sub-hypothesis	10.932	0.000

6-3-2- Hausman Statistic Results For Research Hypotheses

There are two methods for estimating the pattern using panel data, which are fixed effects and random effects, determining which of these two methods should be used for a sample of data is done through the Hausman test. Since the significance level of H-hausman statistic is less than the accepted error level (%5), therefore, the regression method with fixed effects is preferable to the regression method with random effects.

TABLE (6) HAUSMAN STATISTIC RESULTS FOR RESEARCH HYPOTHESES

Hypotheses	The value of the statistic	Significance level
The first sub-hypothesis	33.521	0.000
The second sub-hypothesis	45.568	0.000

6-3-3- The results of White's Statistics for Research Hypotheses

One of the important issues that we deal with in econometrics is the issue of heterogeneity of variance. Variance heterogeneity means that in estimating the regression model, the values of the error sentences have unequal variances. If the significance level of the White statistic is higher than the accepted error level, we are not faced with variance heterogeneity, but if the significance level of the White statistic is lower than the accepted error level, we are facing the problem of variance heterogeneity. The method of least squares is adjusted.

TABLE (7)THE RESULTS OF F-WHITE STATISTICS FOR RESEARCH HYPOTHESES

Hypotheses	The value of the statistic	Significance level
The first sub-hypothesis	10.127	0.000
The second sub-hypothesis	3.156	0.000

6-3-4- Godfrey Statistic Results For Research Hypotheses

One of the important issues we deal with in econometrics is serial autocorrelation. In statistics, the autocorrelation of a random process describes the correlation between the values of the process at different points in time as a function of two times or time differences. Considering that the significance level of Godfrey'sstatistic is higher than the acceptable error level, the regression does not have the problem of serial autocorrelation.

TABLE (8) THE RESULTS OF GODFREY'S STATISTIC FOR RESEARCH HYPOTHESES

Hypotheses	The value of the statistic	Significance level
The first sub-hypothesis	2.572	0.098
The second sub-hypothesis	2.187	0.114

6-3-5- The Results of the First Sub-Hypothesis Test

Sub-hypothesis (1-1): There is a relationship between the effectiveness of the audit committee and the standard deviations of asset returns.

$$Z_{it} = \beta_0 + \beta_1 ACE_{it} + \beta_2 BSIZE_{it} + \beta_3 ASSQ_{it} + \beta_4 GDP_{it} + \beta_5 DIV_{it} + \beta_6 NLC_{it} + \beta_7 TLOAN_{it} + \beta_8 \Delta LOAN_{it} + \beta_9 A\_CAPITAL + e_{it}$$

TABLE (9) MODEL ESTIMATION RESULTS FOR THE FIRST SUB-HYPOTHESIS OF THE RESEARCH

Variable name and symbol	Regression coefficient	t statistic	The significance level	VIF statistic
Audit Committee Effectiveness (ACE)	-0.011	-3.473	0.000	1.257

Bank Size (BSIZE)	-0.006	-1.414	0.160	1.519
Facility Quality (ASSQ)	0.244	6.439	0.000	2.125
GDP per capita	-0.022	-2.428	0.016	1.760
diversity index (DIV)	0.002	1.496	0.137	1.271
Changes in nonperforming loans (NLC)	-0.002	-2.419	0.017	1.164
Total granted facilities (T$LOAN$)	0.000	0.003	0.996	1.276
Changes in granted facilities ($\Delta LOAN$)	0.003	0.715	0.476	1.397
Capital adequacy (A_CAPITAL)	-0.011	-3.881	0.000	2.044
Constant	0.309	1.973	0.051	-
F statistic (The significance level)	11.526 0.000	Durbin Watson statistics	1.621	
(The coefficient of determination)	0.691	Jarko statistics (The significance level)	7.058 0.069	

Based on the results of the first sub-hypothesis test presented in table (8), considering that the F statistic (0.000) has a significance level below (5 percent), therefore the regression has explanatory power. The coefficient of determination of the model also shows that 1.69 percent of the changes in the standard deviations of asset returns are explained by the variables entered in the model. Also, in the examination of the assumptions of classical regression, the results of the Jarcobra test show that the residuals obtained from the estimation of the model at the confidence level of %95 have a normal distribution, so that the significance level of this test is greater than 05.0 (069.0). Also, considering that the Durbin-Watson statistic value of the model is between 5.1 and 5.2 (621.1), therefore, it can be said that there is no residual autocorrelation problem in the model. Finally, according to the significance level of the effectiveness variable of the audit committee (independent variable) which is below 0.05 (0.000), therefore, there is a negative and significant relationship between the effectiveness of the audit committee and standard deviations of return on assets. Among the control variables, the quality of facilities has a positive relationship with the standard deviations of return on assets, and GDP per capita, changes in doubtful claims and capital adequacy have a negative and significant relationship with the standard deviations of return on assets. Finally, with the collinearity test between research variables, the value of VIF (Variance Inflation Factor) for all variables is smaller than 5, indicating that there is no strong collinearity problem between research variables.

6-3-6- The results of the Second Sub-Hypothesis Test

Sub-hypothesis (1-2): There is a relationship between the effectiveness of the audit committee and the ratio of non-current facilities to total facilities.

$LLP_{it} = \beta_0 + \beta_1 ACE_{it} + \beta_2 BSIZE_{it} + \beta_3 ASSQ_{it} + \beta_4 GDP_{it} + \beta_5 DIV_{it} + \beta_6 NLC_{it} + \beta_7 TLOAN_{it} + \beta_8 \Delta LOAN_{it} + \beta_9 A\_CAPITAL + e_{it}$

TABLE (10) MODEL ESTIMATION RESULTS FOR THE SECOND SUB-

HYPOTHESIS OF THE RESEARCH

Variable name and symbol	Regression coefficient	t statistic	The significance level	VIF statistic
Audit Committee Effectiveness (ACE)	-0.055	-3.356	0.001	1.257
Bank Size (BSIZE)	0.015	0.707	0.480	1.519
Facility Quality (ASSQ)	0.393	2.069	0.040	2.125
GDP per capita	-0.067	-1.444	0.151	1.760
diversity index (DIV)	-0.017	-2.357	0.028	1.271
Changes in nonperforming loans (NLC)	-0.008	-1.428	0.156	1.164
Total granted facilities (T$LOAN$)	0.258	2.155	0.038	1.276
Changes in granted facilities ($\Delta LOAN$)	-0.055	-2.284	0.031	1.397
Capital adequacy (A_CAPITAL)	-0.055	-2.297	0.030	2.044
Constant	1.054	1.346	0.181	-
F statistic (The significance level)	12.006 0.000	Durbin Watson statistics	1.663	
(The coefficient of determination)	0.700	Jarko statistics (The significance level)	8.119 0.068	

Based on the results of the second sub-hypothesis test presented in Table (9), the coefficient of determination of the model also shows that %70 of the variable changes in the ratio of non-current facilities to total facilities are explained by the variables entered in the model. Also, in the examination of the assumptions of classical regression, the results of the Jarcobra test show that the residuals obtained from the estimation of the model at the confidence level of %95 have a normal distribution, so that the significance level of this test is greater than 05.0 (068.0). Also, considering that the Durbin-Watson statistic value of the model is between 5.1 and 5.2 (663.1), therefore, it can be said that there is no residual autocorrelation problem in the model. Finally, according to the significance level of the audit committee's effectiveness variable (independent variable) which is below 0.05 (0.001), therefore, there is a negative and significant relationship between the effectiveness of the audit committee and the ratio of non-current facilities to total facilities. Among the control variables, the quality of facilities and the total amount of granted facilities have a positive relationship with the ratio of non-current facilities to total facilities, and the diversity index, changes in granted facilities and capital adequacy have a negative and significant relationship with the ratio of non-current facilities to total facilities.

6-3-7- The Results of the Third Sub-Hypothesis Test

Sub-hypothesis (1-3): There is a relationship between the effectiveness of the audit

committee and Altman's bankruptcy risk.

$ZSCORE_{it} = \beta_0 + \beta_1 ACE_{it} + \beta_2 BSIZE_{it} + \beta_3 ASSQ_{it} + \beta_4 GDP_{it} + \beta_5 DIV_{it} + \beta_6 NLC_{it} + \beta_7 TLOAN_{it} + \beta_8 \Delta LOAN_{it} + \beta_9 A\_CAPITAL + e_{it}$

To test the hypotheses in the research sample, the following binary log it maximum likelihood regression model was used:

TABLE (11) MODEL ESTIMATION RESULTS FOR THE THIRD SUB-HYPOTHESIS OF THE RESEARCH

Variable name	Coefficient	Z statistic	Prob.	VIF statistic
Audit Committee Effectiveness (ACE)	-0.153	-0.454	0.649	1.257
Bank Size (BSIZE)	0.132	0.632	0.526	1.519
Facility Quality (ASSQ)	1.830	0.321	0.748	2.125
GDP per capita	-0.725	-0.787	0.431	1.760
diversity index (DIV)	-0.474	-2.188	0.028	1.271
Changes in nonperforming loans (NLC)	-0.093	-0.433	0.664	1.164
Total granted facilities (T$LOAN$)	-0.717	-0.314	0.753	1.276
Changes in granted facilities ($\Delta LOAN$)	-1.472	-1.606	0.108	1.397
Capital adequacy (A_CAPITAL)	-13.892	-2.722	0.006	2.044
Constant	4.746	0.452	0.651	-
Maximum Likelihood Test (LR Test) Significant level (Prob.)				55.785 (0.000)
HL statistics Significant level (Prob.)				9.289 (0.318)
Andrews Statistic Significant level (Prob.)				11.723 (0.143)
McFadden's coefficient of determination R-SQ				0.325

The significance level of the LR statistic (0.000) is less than the accepted error level (%5) and the whole regression model is significant. The results of the goodness of fit test (HL and Andrews tests) also show that the mentioned regression model has a good fit. Also, considering the probability level (Prob.) of the Z statistic is high from the accepted error level, for the coefficient of 1β (independent variable), the test results show that there is no significant relationship between the effectiveness of the audit committee and Altman's bankruptcy risk. But from the control variables, there is a negative and significant relationship between the diversification index and capital adequacy with Altman's bankruptcy risk. McFadden's coefficient of determination also shows that the variables included in the regression were able to explain %5.32 of the changes in Altman's bankruptcy risk variable.

Finally, with the collinearity test between research variables, the value of VIF (Variance Inflation Factor) for all variables is smaller than 5, indicating that there is no strong collinearity problem between research variables.

7- CONCLUSION

The audit committee must be independent from the management of the organization in order to fulfill its supervisory role and protect the interests of the shareholders. On the other hand, considering that the audit committee is one of the corporate management mechanisms, it plays a fundamental role in monitoring and managing the quality of information of business units. Therefore, the members of the effective audit committee will be able to prevent the management from manipulating the financial results. Based on this, this study seeks to investigate the relationship between the effectiveness of the audit committee and the risk-taking of banks admitted to the Tehran Stock Exchange. The results indicate that there is a negative and significant relationship between the effectiveness of the audit committee with the standard deviations of asset returns and the ratio of non-current facilities to total facilities. However, there is no significant relationship between the effectiveness of the audit committee and Altman's bankruptcy risk. The results of the first and second sub-hypotheses agree with the results and findings obtained in this research with the theoretical foundations presented in the researches of Nguyen (2022), Quang (2021), Minaei Mahmoudi and Sidi (2019) and Kian and Faqih (2020). And the result of the third sub-hypothesis is contrary to the results and findings of the aforementioned research. Regarding the analysis of the results, it can be said that the audit committee is one of the sub-committees of the board of directors and it is formed directly by the selection and appointment of the members of the board of directors (which can result in the independence of the audit committee). Informational symmetry plays an essential role and is a limiting factor. Accordingly, when banks have an effective audit committee, the risks associated with banking business, including deviations in asset returns and the ratio of non-current facilities (which can have a fundamental and negative role in banks' profitability) are reduced. This can lead to the absence of negative news. Regarding the non-significance of the audit committee's effectiveness and Altman's bankruptcy risk, it can also be said that the result of this hypothesis does not affect the effectiveness of the audit committee, probably considering that the method of calculating bankruptcy risk based on Altman's model is not specific to the banking industry and also considering Because the criterion for assessing bank bankruptcy risk is the capital adequacy ratio, no significant relationship has been observed between the effectiveness of the audit committee and the bankruptcy risk.

According to the results, the users of financial statements should always pay attention to variables such as the effectiveness of the audit committee when analyzing to buy bank shares, because this variable leads to the reduction of risks related to banking business, also considering that the goal of managers is to provide the trust of the company owners, so they should consider this point that they should always seek to reduce the deviations of the return on assets and the ratio of non-current facilities, which will increase the investment in the economic unit in an optimal way, in this regard, one of the limiting factors For the two mentioned variables, it can be effective to try to establish an audit committee. In addition, in order to determine the real value of banks, clarify their information and better understand their performance, the stock exchange organization should adopt rules and regulations that economic units use tools that have an effective audit committee, so that this will lead to the reduction of risks. Be related to banking business. The results of this research also contain useful information for economic managers, financial analysts, researchers and students; because it is very important to examine the relationship between the effectiveness of the audit

committee and the risk-taking of banks.

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