



The financial risk and unusual return of share in the banks of the Tehran Stock Exchange

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Abstract

The aim of this research is to identify the factors and investigate the relationship between financial risk and the unusual return of share in the banks of the Tehran Stock Exchange. In this research, a concept called the earnings response coefficient was studied as the ratio of unexpected gain to unusual profits of banks as a criterion for the logical decisions of investors and other financial users. In this study, commercial banks on the Bourse between 2011-2015 were studied and used the factor analysis technique to reduce 18 financial ratios in order to calculate the risks to be included in the regression. Current research demonstrates credit risk, interest rate risk, liquidity risk and capital adequacy as an effective factor in the relationship between financial risk and the unusual TSE. In addition, the results indicate that there is a positive and relevant effect of liquidity risk and credit risk on abnormal bank yields and two other risks (interest rate risk and capital adequacy risk). have no significant effect on the abnormal returns of banks.

Keywords: Liquidity risks, Credit risk, Unpredictable profit, Abnormal returns.

Introduction

One of the most important elements of financial reporting is the announcement and dissemination of the benefits that may have attracted the attention of all stakeholders, including investors. The profit of a business unit is always used and valued by a wide range of investors, creditors, accounting professions, financial managers, stock analysts, etc. In addition, the most important source of information for investors, creditors and other users of bank information on the stock market is the forecast of the benefit provided by the management of banks at certain intervals. The use of management judgments creates the possibility of managing profits. In this way, managers choose methods or make estimates that accurately reflect the economic situation of the companies under their management (Noroz Beygi 2015).

Investors in the capital market display different responses to earnings news and, therefore, their expectations are based on published news. The profit announcement is one of the published information in the market that causes the share price to change and, therefore, causes changes in returns and results in the actual return differential with the expected returns that this is due unusual returns. Unusual returns change as unexpected profits change over time: the process of increasing or decreasing unexpected returns or profits has a slow, gradual movement that can be done randomly or predictably, which lasts a few months after the announcement of the profit (Saghafi

2004). Risk is the likelihood of a change in the expected benefits and benefits of a decision, event or condition in the future. The probability is not to be sure of the changes. If there was sufficient assurance of the change, there would have been a change in the scope of the expected benefits and benefits, while the inability to predict the likelihood of change would be a risk to benefits and benefits. The change refers to any reduction or increase in interest. In the sense that it is not just the undesirable changes covered by the risk framework. On the contrary, the optimal changes in this direction are also within the framework of risk.

The decision, event or mode of reference refers to the voluntary and involuntary conditions in which the risk prevails. A decision can be made voluntarily; its benefits and its assessed benefits, and the particular risk prevails over its benefits and benefits. On the other hand, the event or state in the future can be deliberate and predictions of its benefits and benefits are subject to the possibility of change. The risk arising from the balance sheet structure includes sectors such as assets, asset structure and asset / liability management. In this area, more attention is paid to how different combinations of assets in the balance sheet are. In other words, is the combination of assets likely to change their value in the future greater or is the stability of most of the assets of the combination important? The ratio of fixed assets to current assets, the ratio of financial assets to physical assets and the volume of financial assets is one of the indicators used to evaluate this type of financial risk.

Studies show that abnormal returns can be affected by the company's financial information. In other words, a number of investors could not calculate the expected rate of return using a number of financial ratios because of the lack of knowledge of cyber investors about this relationship, this information is not reflected in the real price of the share and creates additional returns for this group of investors who have knowledge of this relationship. . As a result, if most investors are aware of this relationship, abnormal returns to the capital market will be reduced to some extent and market efficiency will increase. As a result, the identification of published financial information and its relationship to abnormal returns are very important. (Bahram far 2004).

The risks in each zone have the ability to be mentioned that one of the most important of this area is the banks; Because banks, on the one hand, collect the capital of the people who are responsible for them and, on the other hand, use these funds to carry out operations and banking activities (Mehrabi 2010). The nature of the risk in the banking system due to factors such as the number and diversity of banking transactions, the different nature of the transaction, the bank's capital status and limitation, the maintenance of the interests of shareholders and depositors depositors' resources and the frequency of their resources and the lack of expertise in the areas of resource management and recording of high financial transactions are completely different from the risks in other sensitive, complex economic units and more difficult than risk management in other economic units. In this research, the researcher seeks to determine whether the relationship between the coefficient of profit and financial risk (liquidity risk, credit risk, capital adequacy risk, interest rate risk) and the unusual shares of the commercial banks the stock market there?

Background of the research

Chang Acehan (2015), "Investigating the effect of liquidity risk on internal banking performance has shown that liquidity risk is critical to the bank's internal performance and liquidity risk to include current assets and dependence (2014), "A study of the determinants of the unusual makes stock exchange performance for examples of Malaysian and Australian banks over the period 2000-2012". the study showed that accounting profit is a price-related variable that has a simultaneous effect on the share price of a bank.

Chang & Ariff (2013), "Study of the effect of adverse factors of bank risk on the growth rate of the profit-to-earnings ratio". The results showed that the determinants of bank risk affect the magnitude of the earnings response coefficient and, as a risk factor for banks, has an important role in the relationship between returns, an important factor that should be taken into account in evaluating the price of a bank's shares. Pornamasary (2012) "Investigating the relationship between the risk of

non-payment of debt and the return on investment of Indonesian banks" In this research of 22 Indonesian commercial banks between 2008 and 2010, the risk of non- debt and negative returns on investment are negative, but the growth opportunity factor has a significant effect on it. In addition, two financial risks have no significant effect on return investment.

Chang and Nasir (2010) studied the relationship between financial risk, price risk, market risk and the response rate of Chinese commercial banks. The results of their research showed that there is a significant relationship between financial risk, market risk and profitability. Chena, Lia and Vanga (2010), "studied important information of influence on the abnormal returns that create to rivals." In this study, conducted in Hong Kong, they examined 47 countries (19 years) from 1990 to 2009.

Chang and Nasir (2009), "studied the effect of the size of a company on stock prices at the time of the publication of the shares". This effect was measured by the response to the earnings coefficient, so that the standard unexpected returns and the size of the firm had a negative relationship. Chang and Nasir (2008) determined factors of abnormal return on bank shares for an example of Malaysian and Australian banks during the period 1998-2006. "The results showed that accounting profit is a price-related variable that has a simultaneous effect on the share price of a bank.

Akml and Saalm (2008) studied an article on "technical efficiency of the banking sector in Pakistan" and using information from 30 state banks, 18 local banks and 8 foreign banks, and the two factorial factor analysis method steps. bank-specific factors and macroeconomic factors on bank efficiency. In the first step, the factor analysis method was used to estimate technical efficiency and scale, and then, using the Tobit regression, it studied specific macroeconomic and banking effects. The results of the study showed that banking efficiency has improved since 2000 and that foreign banks are more efficient than local private banks and public banks.

Veek (2004), "Research on the nature of risk in the banking system", research has shown that the nature of risk in the banking system due to factors such as the number and variety of banking, different nature the state of depositors' resources and its frequency and the lack of expertise in the areas of resource management and the importance of financial operations are very different from the risks incurred by other economic units and all this necessarily requires that risk management in banks be more sensitive, complex and difficult than risk management in other economic units. In addition, certain risks are specific to the bank and are not relevant to other companies. On the other hand, the characteristics of certain operations in Islamic banks have made risk management more sensitive and complex.

In any case, the occurrence of risk in both conventional banking and Islamic banking systems leads to a decrease in the bank's profitability, which in three forms of profitability is lower than predicted goals, the loss of all expected profit and eventually loss is shown. Meanwhile, harm is the most destructive form of risk that can lead to the loss of all or part of the bank's capital, or even a portion of the deposits, and in the acute form of all bank deposits, and endangers the existence of the bank. Hence, identifying risks in the first stage and then managing them in a systematic way can be a means to prevent the occurrence of these adverse events.

Akso (2003), "Investigated the Context of the Effect of Size, Ratio of Book Value to Market Value and Past Information on Extra Returns". The research is carried out on companies listed on the Turkish stock exchange. On average, the sample consists of 86 companies that have had extra returns during the 14 months before the publication of the information. The results of the research show that the financial statements published by the companies have information content. One of the most abnormal results is that significant extra returns continue through the research methods used over time intervals.

The existence of longer term periods of additional returns is consistent with the provisions of several unconventional theories that try to explain the abnormal returns and cause some questions about the market model and market efficiency. Another analysis of the returns from the companies showed that the excess returns observed are not only due to high risk or wrong pricing of stocks in the market, but also the size of the company can be a determinant factor in this relation. Also, the

results prove that the published financial statements of smaller companies have higher informational content.

Collins and Kootari (1999) examined the relationship between systematic risk and earnings response coefficients and found that one of the factors reducing the coefficient of reaction is profit. In addition, they found that the factor of the growth opportunities is also affected by the (β) positive systematic risk on the earnings response coefficient.

Ferret (1998), in an article titled "The Relationship Between Projected Profit and Corporate Value and Abnormal Stock Returns," by studying 716 newly-listed companies in the New Zealand Stock Exchange between 1977 and 1992, investigated the relationship between estimated earnings and company value and shares abnormal return of these types of companies at the initial stage of supply. It was concluded that earnings forecasts are related to the value of the companies with the primary supply of shares, and are more significant than other tools such as accumulated profits and there are positive relationships between profit forecast error and abnormal returns.

Halliwall and Reynold (1994), "Investigated the Effects of Business Risks on Earnings Reaction", and stated that, in addition to systematic risk, the risk of non-payment of debts could also reduce the coefficient of earnings response. They used the ranking of bonds to measure the risk of non-payment of debts, and by controlling the risk factors and the stability of the profitability process, they proved that the risk of non-payment of debts could also be negatively coefficient on earnings response.

Halliwall, Lee (1991), in an empirical study, investigated the relationship between unexpected earnings and unusual returns of securities with the impact of financial leverage. They hypothesized that the coefficient of return was related negatively to the financial leverage. The financial leverage in this research was measured as the average during the research period, based on the ratio of the book value of long-term debt to the market value of the equity. The results of this study indicate that the Earnings Reaction coefficient for companies with no leverage or with a low leverage ratio is larger than leverage companies or with a high leverage ratio.

The concept of basic risk in earnings response coefficient studies

In 1990, Kalinz & Gotary investigated the relationship between systematic risk and the coefficient of response to earning. They found that the only beneficial factor in making a profit is systematic risk. In addition, they provided evidence that companies in which the market considers growth opportunities for them, their rate of profit response will be high. In fact, his research showed that, like the profit response coefficient, it enables the explicit test of the relationship between prices and the return that is found in the financial valuation model, by interfering with risk variables and systematic growth, it is possible to explain some of the differences in the same benefit response coefficient.

Scott (2003) sets out the reasons for the market reaction to reported earnings based on historical cost, as follows: if the sequence or expected future exit order of the banks is riskier from the point of view of the investor risk aversion will have less value. For various investments (portfolios), beta is a criterion for calculating the risk of assets. . The investor looks at the gains of the current year as an indicator of future profitability and profitability. Future yields will be more risky, investors' reaction to unexpected profits will be less. Coalition and Craft (1989) Weiston (1989), in empirical research, concluded that the high beta of the stock market had a lower coefficient of response. Freeman et al. (2004) also investigated the effect of risk on the profit response coefficient in another study. They argued that the coefficient of profit response could increase with the company's final risk, since the company's final risk is positively related to the sensitivity of dividend profit expectations in the company's special news. They define the final risk as uncertainty about future dividends with future earnings. The news about the value of the company makes the investors to think again about their expectations of future earnings of the company. This revision will change stock prices. The changes in prices will be related to the news of value, which will be important as the risk increases. Dalival (2003) in a research titled "Risk Impact on Valuation" used valuation

theories of the organization to predict the inverse effect of risk to predict the basis of the variability of the benefit coefficient of the reaction. Intuitively, it is obvious that the high risk base will be accompanied by market expectations with less sustainability. As a result, the effect of each level of unexpected gain on stock yields in the market decreases equally. The evidence gathered by Dalival in the US market was in line with this theory. The investigator used leverage levels and guarantee rates as a reference point for benchmark risk assessment. The results of this research show that there is an inverse relationship between the changes in the benefit reaction coefficient and changes in the base rate risk.

Investigating the relationship between unusual returns and unexpected earnings

In each of profit reporting banks, the unusual stock return is, the surplus of return on equity in the period of announcing the profit from the expected return on shares with respect to the bank with the beta coefficient of the market and unexpected income is also the surplus profit on the expected profit, which has been achieved either through time series models or through analysts of securities. Abnormal returns are closely related to unexpected profits and are always discussed together, so abnormal returns can be considered as a function of unexpected earnings:

$$AR=f(UE)$$

AR=Unusual stock returns

F = (unexpected earnings)

Fama (1965), in his research titled Risk and Investment, stated that the unusual returns are the difference between real stock returns and expected returns. Expected returns are what investors estimate to company declared stock value for them. But the actual returns are (Harm) real profit. The earnings response coefficient is the linear slope of the two axes that has been formed of market returns and share returns. Many of the studies using the regression model have investigated the relationship between returns as dependent variable and earnings as an independent variable. The results of studies that have been conducted on the relationship between return with company's profit and introduce a specific coefficient for unexpected annual earnings regression as independent variables and unusual returns as a dependent variable. Results from Fama & Nasir (2008) suggest that the regression has a specific slope in the following linear relationship:

$$AR_i=\alpha+\beta(UE_i)+e_i$$

Penman studies (1992) have been used as a constant coefficient in the return regression as a function of profit, but this factor is often referred to as a constant coefficient in unexpected returns based on unexpected returns. Always, recent models have attempted to examine the relationship between unexpected earnings and unexpected returns, which generally forms a more complex level of analysis than spending profit to profit return survey. Defining the Earnings Reaction Coefficient in the recent method has the advantage that the review will be done based on the richest content of the theory. Otherwise, the earnings response coefficient would be evaluated only in the context of a very simple and primitive approach from market response. Cheng, along with his colleagues in recent years, learned about the past determinants and the awareness of the trend of stock market changes to examine bank risks in various research studies and achieved important results.

First they proved the bank's credit risk as an effective factor in returns and profits, and considered them as an important factor in valuing the stock price of a bank by the investor. Then, the determining factors the bank's shares unusual returns reviewed for a sample of Malaysian and Australian banks over the 8-year period and showed that a variable accounting profit is related to price variable that has a simultaneous effect on the stock price of the bank. According to Cheng, Ashen (2009) in his study described liquidity risk as determining factor for internal performance. Cheng & Nasir (2010) continued past findings and introduced financial risk, price risk, and market risk, effective on the earnings response rate of commercial banks in China. Purnamasary (2012) examined 22 Indonesian commercial banks in the 2-year period. He underlined the risk of capital adequacy, and Cheng's research further demonstrated that the effect of capital adequacy risk is negative on capital returns, while liquidity and credit risk have not affect the return on investment

of the Indonesian commercial bank. Halivall& Rinoldez also stated that addition to systematic risk, the risk of capital adequacy could also reduce the coefficient of profit response. They used rating of bonds to measuring the risk of capital adequacy and by controlling the systematic risk factors and the stability of the profitability process; they proved that the risk of non-payment of debt could also be negatively affected to the profit reaction coefficient.

Calculation of financial risks by using factor analysis technique

In order to obtain the most important financial components in this phase, the size of the data set is reduced by using factor analysis and grouping of similar variables. In fact, this tool helps in the selection of appropriate ratios, so there is no coherency between variables. It also allows financial analysts to take account of the various financial dimensions of the company as far as possible and to carry out meaningful multi-dimensional analyzes. In this phase some conditions are excluded from the analysis because of their high correlation with other circumstances.

Determination of the variables of each factor (interpretation factor matrix) In the fact matrix, each column represents an agent. The values of each column show the factor loads of each variable by a factor. In the output of the software the agents are placed from the left to the right with the numbers 1, 2, 3 or the last one. Variables are also listed in the first column from top to bottom. Begin should start with the first variable and the associated values should be checked in various factors. Wherever the maximum absolute load factor is present and is statistically significant. Similarly, steps must be performed for other variables. When significant load agents were identified by the agent's matrix, variables were also identified that do not have significant agent load on any of the agents. Now all variables have only a small share of the results. To eliminate the effects of variables that did not have significant agent load, remove them from the analysis, analyze the factor by the significant variables, and interpret the results. By identifying the significant variables of each factor, the appropriate name can be determined according to the nature of the variables of each factor and its coefficients for the factors that the method used in this study.

Financial ratios analyzed by factor analysis technique

Determine appropriate financial ratios:

Finally, in order to rank the risks of commercial banks, 18 financial ratios were used.

The phases of the financial ratios to obtain the main financial components

Counts of factors: For initial estimation, principal component analysis is used. In this method, the linear combination of observed variables is formed. The principal component method only acts to transfer the associated variables to a set of non-interrelated variables. In this phase, the number of factors is determined in terms of value. Factors with a specific value greater than one are included in the factor model.

Specific Values: Indicates how much a factor contributes to explaining the common variance Infrastructure of variables of the underlying are share. If the agent explains all the variance in each variable, each of them has a factor load and a value for a factor of 1 equal to n (the number of variables).

Factor loads: In fact, are the standardized coefficients in a regression equation in which the main variable acts as a dependent variable and agents as independent variables. The existence of negative loads also shows that some variables represent contrary of something that is determined by that factor. Finally, the purpose of factor analysis is to summarize the variables in a number of factors. Therefore, for factor analysis, the method of extracting factors and the criteria for their determination must be determined.

Questions of research

- 1- What are effective factors of relationship between financial risk and unusual return share in the banks of the Tehran Stock Exchange?
- 2- Is there a relationship between the coefficient of profit response and financial risks with abnormal returns of stocks in admitted commercial banks in Tehran stock exchange?

Research methodology

Research Method

The present research In terms of purpose is practical and in terms of nature and descriptive method is Correlation type.

Statistical population, sample size and sampling method

In this research, the statistical population of all financial institutions (commercial banks) accepted in the Tehran Stock Exchange (TSE) was 45 banks from 2011 to the end of 2015. Considering that the statistical population of the present study, all financial institutions (commercial banks) accepted in the Tehran Stock Exchange from 2011 to the end of 2015 is 45 banks, so the statistical sample is also considered on the basis of all the same number of 45 banks.

Funding and analysis of research questions

Funding and analysis of research first question

A. The method of extracting factors:

There are different methods for extracting agents that vary in terms of the amount and type of variance explained by the variables of each factor in the model. The most basic method is the analysis of the main components. This point is necessary that there are three variances in the factor analysis. A common variance is a relative variance that is explained by common factors. The specific variance related to a particular variable and the variance of error that results from the discrepancy and uncertainty of the data collected. In the principal components analysis method, the agents justify all the variances of each variable, including the common variance in the set of variables, and also the specific variance of the variables. Therefore, the number of factors in this method in theory should be equal to the number of variables, because all variances of each variable must be explained by agents. In other word, in the analysis of the main components, there are components in number of variables, but factors are extracted that explain the maximum amount of variance.

B.The criteria for determining the factors:

Extracting agents is done according to the following criteria:

Eigen value criterion: Each agent contains one or more variables. The squared loads of an agent represent a percentage of the variance of the correlation matrix, which is explained by the factor, which is called a specific value. It is enough to calculate the correlation coefficient of the variables bring together with one factor and sum together to obtain the specific amount of that factor. Whatever the specific amount of one agent being more, that agent explain more variance. Accordingly, the number of factors is determined according to the specific amount of each agent, and the factors its specific amount is more than one, are considered as significant factors.

Previous Criterion: This method is used when the number of factors is specified by the researcher.

Cutting test criterion (Velicer minimum average partial correlations (MAP): Determines this criterion of factors on the basis that a certain degree of variance has not yet overcome on the common variance, therefore, as long as the amount of the common variance is greater than the specific variance, significant factors are extracted. To determine the number of factors based on this criterion, a specific amount chart is drawn up against the number of factors.

Criterion of Cumulative Variance percentage: In this case, the percentage of variance explained is the basis for decision making and factors are extracted that have a high percentage of variance. If the value of the variance is less than 50%, then variables with a low rate of subscription should be eliminated. In this study, the 18 steps of the financial ratio raised in the previous step were used as entrance (input) of the factor analysis. The factors were extracted by using principal components method. . The frequency of the factors was determined by using orthogonal Varimax method. Because of the complete correlation between some ratios, in this stage, 4 ratios are deducted from

factor analysis and, at the end, 12 ratios remained in the collection finally, they were grouped into four factors and classified according to the common characteristics of the ratios to four factors of liquidity risk, credit risk, non-payment risk, interest rate risk and according to the opinions of experts and previous accredited researches, they have been confirmed and to calculate the four risks studied were use.

Step One: Extracting Agents

First, the amount of the initial and after the extraction of the factors for the variables entered in the factor analysis is presented in Table (1). The table above shows the degree of variable subscription or total variance with the amount of variables factor subscribe. The initial subscription rate indicates all of pre-extraction subscriptions, all of them are equal to one, and all but one exceeds are higher than 50 percentages, which is indicating the ability of the factors determined in the explanation of the variance of the studied variables. The amount of the X18 variable is less than 0.5, so in the first step, this variable is deleted.

Table 1 Initial subscription rates and after factors extraction for the variables entered in the factor analysis.

Table 1:(Subscriptions) Communalities

Variables	Initial subscription rate	Factor share of variables
X ₁	1.000	0.953
X ₂	1.000	0.902
X ₃	1.000	0.735
X ₄	1.000	0.822
X ₅	1.000	0.863
X ₆	1.000	0.961
X ₇	1.000	0.915
X ₈	1.000	0.783
X ₉	1.000	0.971
X ₁₀	1.000	0.852
X ₁₁	1.000	0.734
X ₁₂	1.000	0.701
X ₁₃	1.000	0.914
X ₁₄	1.000	0.970
X ₁₅	1.000	0.925
X ₁₆	1.000	0.741
X ₁₇	1.000	0.841
X ₁₈	1.000	0.437

Second stage: The review of the results of Bartlett's sprite test and KMO statistics

To find out that factor analysis is allowed in this study and appropriate of sampling, the KMO statistic has been calculated. In Bartlett's method, we use the least squares weighting method to estimate factor scores. For each factor, calculates scores with one standard deviation and the factors are independent of each other. In this method, in order to estimate the coefficients, the least squares method is used.

Semi & Kiser argue that when the $KMO > 0.5$ value is greater than the indicators of the adequacy of the sample for analysis, and the implementation of factor analysis is possible. By entering the data of all variables, the KMO was 0.670, which allowed the factor analysis to be at a good level. The Spire-Bartlett test also describes the validity of the factor analysis model. This test indicates the suitability of the data for factor analysis. Bartlett's test, which is judged by the significance level, is

significant with a degree of freedom of 91. This indicates that the matrix of correlation in society is not zero. It means there is a significant correlation between variables.

Table (2): statistics of KMO and Bartlett's Test results

statistic(kmo)Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.610
Bartlett) Bartlett's Test of Sphericity (Spit Test)	Approx. Chi Square
	(Degrees of freedom)Df
	Sig.
	805.933
	91
	0.000

Step Three: Review the gained results of the graph and figure

Table (3) shows the variation of the special values in relation to the factors. This chart is used to determine the optimal number of components. According to this diagram, it follows that from the fourth factor, the variation of the specific value is reduced, and then four factors can be extracted as the most important factors in explaining the variance of the data. Attribute Diagram Valid Factors in the Eskeri method, a specific value graph is plotted for each agent. At a point where the shape of the curve for the special values is horizontally. That point, and the factors are on the left called Eskeri. The real factors and the rest of the factors are considered to be errors.

Step Four: Determine the optimal number of factors and categorize them

The total value of the variance explained: This table shows that existing variables can be converted into several factors, and these factors explain and cover several percent of the variance. The specific amount of each factor is ratio of total variable's variance that explains by that factor. This specific amount can be calculated through the sum of squares of the factor loads for all variables in that factor, so the special amounts show the exploratory significance of the factors in relation to the variables. The low level of this amount for one factor means that the factor of the explained variance has little role to explain the variance of the variables. In the column the agents are provided, that their special amount are greater than one. The column represents the set of amounts of the transacted factors after the rotation. By calculating the initial matrix of the factors, it was found that four factors with a specific value is more than 1, which covered 83.514% of the variance of the total variables. In other words, out of the 18 indicators, there are four factors that account for 83.514% of the variations of the specific values of each of the tested indices. If the factors obtained by Varimax are rotated, the first, second, third, and fourth factors are 34.259, 20.100, 15.447, and 13.708, respectively, and a total of 83.514 percent of the variance, respectively.

Table 3: Graph of percentage variance and special values of different factors

	Initial Eigenvalues			of Squared Loading			Rotation Sums of Squared Loading		
	Total	Of Variance %	Cumulative %	Total	Of Variance %	Cumulative %	Total	Of Variance %	Cumulative %
1	5.25	37.50	37.50	5.25	37.50	37.50	4.79	34.25	34.25
2	2.92	20.85	58.36	2.92	20.85	58.36	2.81	20.10	54.35
3	2.10	15.03	73.39	2.10	15.03	73.39	2.16	15.44	69.80
4	1.41	10.11	83.51	1.41	10.11	83.51	1.91	13.70	83.51
5	0.87	6.25	89.77						
6	0.44	3.14	92.91						
7	31	2.23	95.14						
8	0.23	1.65	96.80						
9	0.21	1.49	98.30						
10	0.12	0.88	99.11						
11	0.06	0.46	99.64						
12	0.43	0.307	99.95						
13	0.01	0.030	99.98						
14	0.00	0.02	100.0						

Step Five: Grouping agents after rotation

In order to better interpret the relationships between the data, special rotations and transformations were performed on the agents. In many cases, when a number of variables depend on a particular factor or even on a number of factors, the interpretation of the factors will be difficult. Hence, there are some methods that make it easier to interpret factors without changing the level of subscriptions. Table (3-5) is a component matrix in which the factor loads of the variables are shown after the rotation with the Varimax method.

Factor loads are the correlation coefficients of variables and factors. In this table, the factor loads exactly indicate which variables are included in each factor. By comparing variables related to each factor, we can obtain common features among these variables. By doing so, while the items within each dimension have the highest correlation with each other, we try to reduce our correlation between the different dimensions to the lowest level. Here it is necessary to note that some researchers for the purpose of research also to obtain definitions and naming actions, know higher coefficients of 40/0 in the definition of important and meaningful factors and consider coefficients less than these limits as random factors (Mohammadi Yeganeh, 1391). The naming of an agent is typically based on a researcher's exact assessment of what variables measure with high factor loadings. In fact, agents are named according to the definition of variables and what the common reality is. Therefore, the factors were determined by using the method of the main components of the components with special values greater than 1 and the varimax method used in this paper. As a result of this test, 4 ratios of 18 ratios was eliminated in factor analysis and a total of 14 ratios remained that were classified according to the common characteristics among them in four factors. Also, the share table shows the variables in the agents after the rotation. Each variable is placed in a factor with which the factor has a significant correlation. At present, the reviewed ratios are shown below in order to divide the four financial risks discussed in the hypotheses into the next stage and according to the experts' opinion, past research and their nature.

Table (4) the matrix of elements rotated by the varimax method

Factor 1	Factor 2	Factor 3	Factor 4	variable
		0.930		Current debt / Current assets
		0.887		Short-term facilities / Total facilities
		0.555		Short-term deposit - Short-term loan / Total deposits
0.835				Short-term deposit / Short-term loan
0.780				Requests / Total Facility
	0.991			Total Deposits / Total Facility
0.926				Total Facility / Total Assets
0.840				Short-term liabilities - Short-term facilities / Total assets
	0.982			Total Deposits / Total Debt
			0.876	Distributed profits / Total facilities
			0.554	Capital / Total Assets
0.993				Total Assets / Total Facility
	-0.889			Visible deposits / Total deposits
			0.781	Commitments / Total Assets

At this stage, the four groups formed by factor analysis are grouped into four risks, liquidity, credit, capital adequacy and interest rates. To calculate these risks, we look at the first ratio reported in each group.

First factor: Credit risk

This factor is named with the highest percentage of total variance, 34.259 and with five variables called credit risk:

Table 5. Credit factor factor load

row	Factor load	Description
1	0.993	Total Assets / Total Facility
2	0.926	Total Facility / Total Assets
3	0.835	Short-term deposit / Short-term loan
4	0.840	Short-term debt / short-term facility / total assets
5	0.780	Requests / Total Facility

Each financial sector, including banks, should carry out its activities under a comprehensive and comprehensive credit system to minimize the actual amount of credit risk associated with a recipient of the facility or business partner to avoid adverse selection and so banks need a lot of information to verify the credit of the facility or business partner. The banking system can reduce the credit risk associated with its asset portfolio by using methods such as converting into asset securitization, credit derivatives, debt sales, etc. Banks should have a strong system for valuing bonds and classifying their customers' potential risks. Banks should also have an internal risk pricing system for credit risk management. Such a system should have the ability to rank customers according to a certain degree of credit risk (Khan Wahmad, 2001).

Second factor: interest rate risk

This factor is named with the amount of variance of 20.100% and with three variables called interest rate risk:

Table (6) Factor Rate of Interest Rate Risk

row	Factor load	Description
1	0.982	Total Deposits / Total Debt
2	0.991	Total Deposits / Total Facility
3	-0.889	Visa Deposits / Total Deposits

Banks and financial sectors must have clear policies to control the risk of interest rates. These policies include defining responsibilities and accountability, continuous reporting, and the use of tools and techniques to control the risk of interest rates. The interest rate risk for each component of the bank's assets and liabilities should be determined by maturity, repayment and revaluation. There are many techniques for measuring interest rate risk. The most important of these are gap analysis, crisis test and simulation method based on mathematical and statistical methods and assumptions. By using this method, it is possible to predict Incidents and events related to changing a variable using past information. Banks should also use the pressure or crisis test to examine the possible effect of interest rate changes on the slope of the yield curve (Khan Wahmad, 2001).

Third factor: Liquidity risk

This factor is named with the variance value of 15.447% and with three variables called liquidity risk:

Table (7) the factor load of liquidity risk

row	Factor load	Description
1	0.930	Current debt / current assets
2	0.887	Short-term facilities / Total facilities
3	0.555	Short-term deposits - Short-term loans / Total deposits

Liquidity is an important factor in assessing cash or current inventories for resolving needs. Failure to provide sufficient liquidity to resolve the needs of creditors may result in destroying the bank.

Lack of liquidity has a significant impact on the performance of banks, because investors are always concerned about the bank's ability to secure their capital (Shim, 2001).

Fourth factor: Capital adequacy

This factor is named with the variance of 13.708% and with three variables called capital adequacy:

Table (8) Factor load factor of capital adequacy

row	Factor load	Description
1	0.876	Distributed profits / total facilities
2	0.554	Capital / Total Assets
3	0.781	Obligations / total assets

The risk of capital adequacy is the bank's capital, which is obliged to take care of deposits resulting from the decrease in the value of assets. Whatever the risk be higher, the likelihood of a decrease in bank debt is increasing, and whatever be lower the investors will earn more profit. Therefore, they tend to invest more, which results in an increase in stock prices (Chang, 2007).

Funding and analysis of research second question

There is a correlation between the coefficient of share response and the abnormal return of share of Maliba risks at the admitted commercial banks to the Tehran Stock Exchange.

Table (6): Results of the test of research second question (H2)

$CAR_i = \alpha_0 + \beta_1 UE_i + \beta_1 Lr_i + \beta_2 Car_i + \beta_3 Sr_i + \beta_4 Ir_i + \varepsilon_i$				
Independent variable	Coefficients	Statistic t	Sig.	VIF
Constant amount	0.392	0.872	0.389	
(Liquidity risk)Lr	0.396	2.973	0.005	1.024
(Credit risk)Cr	1.640	2.025	0.039	1.402
Sr(capital adequacy risk)	0.126	0.596	0.555	1.234
(Interest rate risk)Ir	-0.298	-1.421	0.163	1.178
Adjustment coefficient	0.284			
Watson's camera statistics	1.881			
F statistics	4.488			
Significance level of the statistic F	0.003			
The independent variable of the model is significant at the error level of 0.05				

Discussion and interpretation of the research second question results

The results from Table 6 show that the level of significance less than 0.05 was (sig = 0.039) , (Sig = 0.5555), (sig = 163/0), and t statistic is greater than 1.98 (t = 02525), (t = 596 / t), (421 / -t = 1), therefore, at the error level of 5% is not significant , while Liquidity risk at 5% error rate is significant. To determine whether a general model of regression is significant or not, we use F statistics. The results show that the F statistic is 4.488 at 5 percentages error level is significant. Therefore, the estimated model is sufficient to test the sixth hypothesis. To evaluate the fit of the model, we use the adjusted coefficient of determination (R^2 adj). The results show that the adjusted coefficient of determination is 0.284. It is better use the modulated determination coefficient to interpret the fitting of the model. Therefore model has a good fit. The results are acceptable when having no self- affiliation, except for the disorder. For this purpose, statistic of Watson Camera

(DW) is used. If the value of this statistic is between 1.5 and 2.5, That is, the model has no self-affiliation. The results show that the statistic of DW is 1.881, which represents the independence of the remnants. It is also observed that in the general model, credit risk, risk of non-payment of debt, interest rate risk is not significant at 5% level. While unexpected liquidity risk is profitable, it is based on the results of a separate regression. The linear multivariate regression model is as follows:

$$CAR_i = 0.392 + 1.298 UE_i + 0.396 Lr_i + 1.640Cr_i + 8.640Sr_i - 0.298 Ir_i$$

Discoution and Suggestions

Practical Solutions for Liquidity Risk Management of Banks

- Liquidity risk is banks' unwillingness to provide concessional investments or timely repayment of banks, risks with other mixed financial risks, making it difficult to measure and control them.
- The causes of liquidity risk are as follows:
- withdrawal of deposits
- Ability to convert assets into cash
- investment grade
- Time gap in assets and liabilities

Therefore, one of the most important principles of liquidity risk management is to estimate the future needs of the bank. Managing liquidity is one of the biggest challenges for the banking system. The main reason for this challenge is that most of the banks' sources finance with short-term deposits. In addition, the investments granted by the banks are invested in assets with relatively low liquidity. The Bank's main task is to strike a balance between short-term financial commitments and long-term investments. Maintain insufficient liquidity of the bank with the risk of inability to meet obligations and, consequently, bankruptcy. Maintaining large amounts of liquidity is a special type of inefficient resource allocation that reduces the bank's profitability to public deposits, thus losing the market. Liquidity management is the ability of a bank to meet its financial obligations over time. Liquidity management takes place at several levels. The first type of liquidity management is carried out daily and an alternative liquidity is expected in the future. The second type of liquidity management, which is based on the management of the liquidity process, predicts the liquidity required for longer intervals of six months to two years. In summary, the third type of liquidity management is that banks, if they can not provide financial resources, cannot do this for their clients. The proper management of liquidity risk, as well as the management of other types of risk, require the bank to establish a solution for the effective control of the board of directors and senior executives, as well as for the measurement, management and control of risks of liquidity. In an appropriate process, the complexity of the liquidity management process should be at all risk levels of the bank. The creation of liquidity is one of the main activities of the bank. Many of the direct or indirect activities depend on the ability of banks to provide liquidity to clients. As a result, banks are particularly vulnerable to liquidity problems, as banks with a specific nature and their impact on markets as a whole are vulnerable. The bank's liquidity strategy should include specific strategies related to specific aspects of liquidity management, such as the combination of assets and liabilities, the approach of liquidity management in relation to different currencies from one country to another, relative dependence on the use of the main financial instruments, liquidity and sale of assets. In addition, a proven solution should exist to address potential temporary or long-term liquidity problems. Due to the influence of liquidity risk on the banks' abnormal incomes, they should have in the future an evaluation and monitoring system for the evaluation of future liquidity in and out. One of the most important principles of liquidity risk management is to estimate the future needs of the bank. This estimate can be based on three methods:

- Estimates based on cash resources and expenses
- Estimates based on the structure of assets and liabilities and their conversion rates to cash
- Estimates based on liquidity indicators

In case of connection of the bank with international activities and, as a result, foreign currencies, there should be a measurement and monitoring and control system related to foreign currency liquidity. Liquidity risk is very important in the banking industry. The benefit derived from stock prices is significantly affected by liquidity risk. Because liquidity risk reflects the activity of banks in their ability to generate enough capital to be profitable in the future. Therefore, as the liquidity risk decreases, the rate of return also decreases. Control of liquidity risk in the following actions is necessary:

- Consider the structure of funds to predict net cash flow
- Variety of resources and deadlines to avoid withdrawal of deposit.
- Creation of short-term credit lines with other banks in emergency situations.
- Use of derivative financial instruments to manage funds with respect to the past
- Determination of precautionary measures for the main sources
- Supervision of problematic and injured assets and deposit insurance.
- Increase the liquidity of financial assets and maintain a good level of cash assets.

Practical Solutions for Managing Banks Credit Risk

Lending to customers is one of the most important tasks of banks. The banks in each country distribute these resources after taking funds on various economic sectors.

In fact, this action strengthens the various economic sectors in each country to improve their jobs and ultimately strengthens the necessary conditions for economic growth in each country to better fulfill its tasks and ultimately create the necessary conditions for economic growth in the country. If the banks can achieve this, they will allocate adequate resources to eligible customers. Proper allocation of funds when the above objective is achieved will provide the necessary background for the survival of the banks. In this case, it is important to note that they are duly identified before granting facilities to eligible customers in order to improve the effectiveness of the decisions taken. Obviously, any control of measures after the grant of facilities is ineffective. In order to create an appropriate environment for managing the credit risk, the following solutions are therefore proposed:

- The Board is responsible for approving and reviewing the (at least annually) courses and guidelines of the Bank's credit risk. These strategies should show the extent to which the bank can withstand the risks and the extent to which its expected profitability with different credit risks exists.
- The Bank's management is responsible for implementing the risk management strategies approved by the Board of Directors. In addition, the development of policies and procedures for the identification, assessment, maintenance and control of credit risks is the responsibility of the management. Such policies and procedures should identify the credit risk of the bank in all its activities, both at the individual and portfolio level.
- Banks should identify and manage the credit risk of all their products and activities.
- Banks must ensure that the risks of new products and activities before they are presented or committed are reviewed by appropriate risk management and control procedures and have previously been approved by the Board or other appropriate bodies.
- Lending to banks should be based on appropriate and well-defined criteria. These criteria should include accurate information from the bank's target market, the full knowledge of the borrower or the counterparty, the purpose of its credit and its structure, and the source of repayment of loans.
- Banks should, as well as reforming, refinance existing credits, have clear and transparent procedures for approving new loans.
- All credits must be awarded in the same way. In particular, loans to companies and related parties authorized under the derogations should be carefully monitored and other appropriate measures taken to reduce the risk of non-conventional borrowing.
- Banks should establish a system for the continuous management of their portfolios subject to different credit risks.

- Banks should create a system that takes care of individual credit conditions so that they can also determine the adequacy of reserves and savings.

References

- Ahmad, N. H., & Ariff, M. (2007). Multicounty study of bank credit risk determinants. *International Journal of Banking and Finance*, 5(1), 1–18.
- Ariff, M., & Cheng, Fan Fah (2011). Accounting earnings response coefficient: Extension to banking shares in Asia Pacific countries. *Advances in Accounting*, 27(2), 246–354.
- Baginski S.P, Hassel J.M. Determinants of Management Forecast Precision, *Accounting Review*, 1997; 72(2): 303 – 312.
- Ball R.J, Brown. An Empirical Evaluation of Accounting Income Number, *Journal of Accounting Research*, 1968: 103-126.
- Ball, R., & Brown, P. (1968). An empirical evaluation of accounting numbers. *Journal of Accounting Research*, 6, 159–178.
- Baltaghi H. B. *Econometric analysis of Panel Data*. New York, 3d, John Wiley & Sons Lt;2005.
- Beaver W.H. The Information Content of Annual Earnings Announcement, *Journal of Accounting Research* 1968; 67-92.
- Beaver,W. (1968). The information content of annual earnings announcements. *Empirical Research in Accounting: Selected Studies*, 1968 Supplement to *Journal of Accounting Research*,6, 67–92.
- Bikker, J. A., & Metzmakers, P. A. J. (2005). Bank provisioning behavior and procyclicality. *Journal of International Financial Markets, Institutions and Money*, 15(2), 141–157.
- Chambers, D., Freeman, R., & Koch, A. (2005). The effect of risk on price responses to unexpected earnings. *Journal of Accounting, Auditing and Finance*, 20, 461–482.
- Choi J, L. A. Myers. The Roles that Forecast Surprise and Forecast Error Play in Determining Management Forecast Precision; 2009-A Guide, available at:
- Coën A, esfleurs A. International evidence on the relative importance of the determinants of earnings forecast accuracy, *Journal of Economics and Business*, 2009: 1-19.
- Collins, D., & Kothari, S. P. (1989). An analysis of inter temporal and cross sectional determinants of earnings response coefficients. *Journal of Accounting and Economics*, 11, 143–181.
- Cragg J. G, Malkiel B. G. The Consensus and Accuracy of Some Predictions of the Groh of Corporate Earnings, the *Journal of Finance*, 1968: 67- 48.
- De Young, R., & Rice, T. (2004). Non-interest earnings and financial performance at U.S. commercial banks. *The Financial Review*, 39, 101–127.
- Easton, P., & Zmijewski, M. (1989). Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of Accounting and Economics*, 11, 117–141.
- Elton E. J, Gruber M. J. Earnings Estimates and the Accuracy of Expectational Data, *Management Science*; 1972: 409- 424.
- Fairfield, Sweeney, & Yohn, F. (1996). Accounting classification and the predictive content of earnings. *The Accounting Review*, 71(3), 337–355.
- Fama, E., & French, K. (2012). Analysis of independent and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Finance*, 11(2/3), 143–181.
- Firth, M. and Liao-Tan, C.K. Signaling models and the valuation of new issues: An examination of IPOs in Singapore, *Pacific- Basin Finance Journal*; 2001; 27: 511-526.
- Fischer, K. P., Gueyie, J. P., & Ortiz, E. (2000). Risk-taking and charter value of commercial banks' From the NAFTA countries, paper presented at the 1st international banking and finance conference, Nikko Hotel, Kuala Lumpur, Malaysia.
- Frankel R, McNichols M. Discretionary disclosure and external financing, *Accounting Review*; 1995: 135-150.

- Gallo, J. G., Apilado, V. P., & Kolari, J.W. (1996). Commercial bank mutual fund activities: Implications for bank risk and profitability. *Journal of Banking and Finance*, 22, 1775–1791.
- Georgia, Siougle. Information Content of Earnings Forecast Disclosure 2003; 1-53.
- Gong G, Yue Li L. The Association between Management Earning Forecast Errors and Accruals, *Accounting Review* 2009; 84(2): 497-530.
- Hartnett N, Romcke J. The Predictability of Management Forecast Error: A Study of Australian IPO Disclosures. *Multinational Finance Journal* 2000; 4(1&2): 101-132.
- Hassan, M. K., Karels, G. V., & Peterson, M. O. (1994). Deposit insurance, market discipline and off-balance sheet banking risk of large U.S. commercial banks. *Journal of Banking and Finance*, 18, 575–593.
- <http://www.ssrn.com>.
- Clarkson P.M, Dontoh A. The voluntary Inclusion earnings forecasts in IPO prospectuses. *Journal of Contemporary Accounting Research*. 2002; 14: 601-626.
- <http://www.ssrn.com>.
- Lennox C, Park C. The informativeness of earnings and management's issuance of earnings forecasts, *Journal of Accounting and Economics* 2006; 42 (3): 439-458.
- Hutagaol Y, Siauw F. The determinants of management forecasts error and the IPO under pricing: A case study of Indonesian IPO, 2009; A Guide, available at:
- Jeitschko, Thomas D., & Jeung, Shin Dong (2005). Incentives for risk-taking in banking —A unified approach. *Journal of Banking and Finance*, 29(3), 759–777.
- Jimenez, G., & Saurina, J. (2004). Collateral, type of lender and relationship banking as determinants of credit risk. *Journal of Banking and Finance*, 28, 2191–2212.
- Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control*, 12(2–3), 231–254.
- Kormendi, R., & Lipe, R. (1987). Earnings innovations, earnings persistence, and stock returns. *Journal of Business*, 60, 323–346.
- Kothari, S. P. (2001). Capital markets research in accounting. *Journal of Accounting and Economics*, 31, 105–231.
- Kraft, Evan, & Jankov, Ljubinko (2005). Does speed kill? Lending booms and their consequences in Croatia. *Journal of Banking and Finance*, 29, 105–121.
- Lev, B. (1989). On the usefulness of earnings and earnings research: Lessons and directions from two decades of empirical research. *Journal of Accounting Research*, 27, 153–192.
- Myring, M. (2006). The relationship between returns and unexpected earnings: Global analysis by accounting regimes. *Journal of International Accounting, Auditing and Taxation*, 15, 92–108.
- Nwaeze, E. (2011). Are incentives for earnings management reflected in the ERC. *Advances in Accounting*, 27(1), 26–38.
- Ohlson, J. A., & Penman, S. H. (1992). Disaggregated accounting data as explanatory variables for returns. *Journal of Accounting, Auditing and Finance*, 7, 553–573.
- Payne J. L. The Influence of Audit Firm Specialization on Analysts' Forecast Errors Auditing: A Journal of Practice & Theory 2008; 27(2): 109-136.
- Rees L. Sivaramakrishnan K. The Effect of Meeting or Beating Revenue Forecasts on the Association between Quarterly Returns and Earnings Forecast Errors, *Contemporary Accounting Research* 2007; 24(1): 259-290.
- Richard. R. M. An Examination of the Accuracy of the Earnings Forecasts, *Financial Management* 1977; 78-84.
- Ruland, w. The Accuracy of Forecasts by Management and by Financial Analysts, *The Accounting Review* 1978; 2: 439-447.

Vivian, W. The Role of Management Forecast Precision in Predicting management Forecast Error, Rutgers Business School, Rutgers University, 2009; A Guide, available at: <http://www.ssrn.com>