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The effect of the legal requirements of Ball III agreement on the lending power and financial stability of the banking sector in Iran by using the system of simultaneous equations

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Abstract

With the application of the two-tier capital agreement and the introduction of the three-tier capital agreement, the discussion of the role of banks' capital in the monetary transfer mechanism and banks' lending decisions has become more important. In this regard, in this research, the effect of the legal requirements of the Basel III Agreement on the lending power and financial stability of the banking sector in Iran has been investigated using the system of simultaneous equations. For this purpose, the data from 19 selected banks and financial institutions were used during the period of 2011-2019. The findings of the research showed that the legal requirements of Basel III had negative and significant effects on bank lending. It was also observed that the legal requirements of Basel III had positive and significant effects on the financial stability of banks.

Keywords: legal requirements, banking stability, lending power, Basel III
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Introduction

The financial crisis in the world is an example of a systemic crisis that has made systemic risk analysis the focus of attention. Systemic risk generally results from the financial distress of a large bank, which spreads to other banks and weakens the entire banking system or even the productive capacity of the real sector of the economy. Therefore, it is necessary to identify and monitor banks. A healthy banking system must ensure the optimal allocation of its capital resources in order to prevent banking crises and their effects on the economy, which also have a high cost. It is one of the important areas in the post-crisis era and before that. Banks will bear different risks in their core business process. For example, granting facilities to customers in its nature is faced with credit risk, and there is a constant possibility of non-repayment of principal and sub-facilities granted to customers for various reasons, which affects both the lending power and the stability of the banking sector. Therefore, banks should always establish a suitable ratio between capital and risk in their assets, because capital plays an important role in the financial stability of any

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bank and enables the bank to have the ability to repay its debts in different situations. Therefore, according to their important functions, including access to payment and liquidity services, asset conversion, risk management, information processing and monitoring of borrowers, banks are exposed to various risks such as asymmetric information, banking rush, inappropriate selection and ethical risks that harm It increases their susceptibility to crises and makes them fragile, which can ultimately lead to serious disruptions in banks' performance, such as financial intermediation, credit crunch or lack of financing for new investments and consumer activities.

Specifically, after the financial crisis of 2008, financial and accounting standards as well as banking supervision faced fundamental changes in order to clarify the reporting of financial items in the balance sheet and financial statements and banking operations, and banks had to comply with very strict regulations and operate within the framework of legal supervision. Complications were required. In this regard, in 2010, the legislators, in the form of the Basel III Agreement, amended the laws related to capital requirements in response to the global financial crisis in 2007-2008. Also, BCBS proposed new liquidity standards to minimize the maturity mismatch of banks. Specifically, in this context, the Net Stable Funding Rate (NSFR) was designed to stabilize the structural liquidity position of banks in a one-year time horizon. The minimum total capital ratio (TCR) also remained at 8% for risky assets, but the Basel III agreement also included newer requirements for the total capital of banks [26].

Therefore, it can be said that the Basel Committee in the framework of Basel III proposes to strengthen the liquidity and global capital regulations with the aim of increasing the flexibility of the banking sector. In a way, the goal of the reform package of the Basel Committee is to improve the ability of the banking sector to withstand shocks caused by financial and economic pressures, which reduces the risk from the financial sector to the real economy. Also, the purpose of this reform package is to develop regulations and management along with strengthening transparency and disclosure in banks [25].

The reason for these reforms is that banks change the content related to the weight of risky assets. During this process, corporate loans are risky at first; By turning into interbank loans, their risk is reduced, using new accounting rules, and the weight in risky assets (RWAs) is underestimated. Accordingly, during this process, the capital adequacy ratio and other capital measures are overestimated because they underestimate the risk-weighted assets and thus can affect bank stability. And also bank lending has an effect [1]. In this regard, it is argued that liquidity and capital requirements can affect the lending and financial stability of banks. In this regard, in this research, this issue has been investigated in the banking sector of Iran. In the continuation of the article, in the next section, the theoretical foundations and the empirical background of the research are discussed. Then the research methodology and model and variables will be presented. After that, the data is analyzed and finally, the results are analyzed and the content is summarized.

Literature and research background

In the rules and regulations of Basel 3, according to the report of the Basel Banking Supervision Committee, the two main goals are to strengthen global capital and liquidity under the rules and regulations with the aim of promoting more flexibility in the banking sector and improving the ability of the banking sector to absorb economic and financial shocks and pressures. It has the ability to reduce the risk of such events according to the laws and regulations and, in addition, to control the risk of the shock spreading to the financial sector of the economic system. To achieve these goals, Basel 3 has made three main methods the focus of its activities. These three axes are:

1. Capital reforms (including capital and capital return), full risk coverage, leverage ratios and the introduction of precautionary deposits and anti-cyclical capital buffers
2. Liquidity reforms (short and long-term ratios),
3. Other elements related to the general improvement of stability in the financial system [11].

Based on this, the new regulatory goals and rules of Basel 3 can be classified into 6 chapters:

1. Increasing the quality of capital: Based on this, current capital and profitability should be the main part of the first capital component instead of debt instruments (above 50%), there should be coordination and simplification in the second component, and overall reduction for capital components with minimum Ability to absorb minority interests, hold financial instruments and tax-deferred assets, etc.
2. Increase of ordinary shares from 2 to 4.5% in Basel 3: although the minimum capital adequacy remains at the level of 8%, at least 6% of this 8% must be allocated to first-class capital. In Basel 3, taking into account

the conservative precautionary shield and anti-cyclical precautionary shield (2.5) percent, the capital ratio will increase to 13 percent.

3. Reducing leverage through the introduction of new leverage ratios: According to the 2013 laws, the introduction of monitoring through leverage ratios and the review of their effect will be key until 2018. These ratios introduce the rules and methods of measuring capital and its imposed risk.

4. Increasing short-term liquidity coverage: This ratio helps the bank in terms of having a high level of satisfaction with cash assets against stress and shocks, and of course, helps bank supervisors to monitor the bank's performance and prevent bank bankruptcy. Therefore, the liquidity coverage ratio (LCR) helps the bank to invest in stocks with maximum quality and degree of liquidity and in order to be flexible against the stresses of the financial sector.

5. Increasing the stability of financing: identifying stable financing through the net ratio of stable financing and identifying stable financing through the ratio of determining new weights to assets from zero to five percent for cash and government bonds, 65 percent for bonds Mortgage is done 85% for small loans and 100% for other assets.

6. Risk control: the approach of credit risk models has become more dynamic and internal models are measured in crisis periods and using banking stress tests.) Increasing the correlation of financial instruments and their compatibility and flexibility in crisis conditions and adapting to new laws. Capital and improvement of risk management standards take place [14]. Based on this, the Basel Committee has determined the use of two types of legal requirements for banks: one is legal requirements for liquidity and the second is legal requirements for capital. Regarding the legal requirements of liquidity, in order to evaluate the liquidity adequacy of banks in short-term and long-term crisis conditions, which includes the liquidity coverage ratio and the other ratio of net stable financing. Capital requirements include requirements related to the capital adequacy of banks [2].

The purpose of a net stable financing ratio is to ensure the adequacy of the bank's liquidity in the long term (one year). Therefore, the bank's resources (the items on the left side of the balance sheet) are measured in terms of stability, classification and with the bank's need for stable or long-term resources, the items on the right side of the balance sheet, as a result of which the bank's stable resources must provide sufficient coverage for its long-term needs. In fact, this ratio emphasizes the optimal adjustment of the maturity of assets and liabilities and prevents banks from adjusting their financing in longer periods and their debts in shorter periods [4].

$$\text{Stable net financing ratio} = \frac{\text{Stable financial resources available}}{\text{Sustainable financial resources required}} \geq 100\%$$

This ratio is obtained by dividing the available fixed financial resources (long-term liabilities weighted according to stability and maturity) to the required fixed financial resources (long-term assets weighted according to stability and maturity). The amount of available fixed financial resources means the amount of liquidity, shares and debts that mature after one year, and the amount of fixed financial resources required is the amount of assets that are not expected to be repaid within the next year. In other words, Basel 3's statement requires banks that the amount of fixed financing available is greater than the amount of fixed financing required during a one-year period of crisis. Banks must comply with this ratio of at least 100% from 2019. [14].

The liquidity coverage ratio also expresses the adequacy of liquidity in the short term. This ratio is proposed to evaluate liquidity adequacy in the short term and it shows the ratio of liquid and quality assets required by banks to settle the net outflow of cash in the next 30 critical days, which is obtained according to the folloBasel formula:

$$\text{Liquldity coverage ratio (LCR)} = \frac{\text{High Quality Liquid Assets (HQLA)}}{\text{Total net liquidity outflows over 30 days}} \geq 100\%$$

and in general, to calculate this ratio, quality liquid assets are weighted according to the probability of turning into cash in the desired time interval and on the net cash outflow within the next 30 days, which is predicted through the net cash outflow of deposits. and other resources are obtained, and divided. be made Quality assets are assets that can easily be converted into cash in emergency situations.

The Basel Committee in the declaration related to capital adequacy, which started its implementation in 1988, the global standard of capital adequacy ratio (CAR) is a measure of bank capital. This ratio is based on the percentage of loans weighted by risk by Derra [8]. Also known as the capital-weighted asset-to-risk ratio, it is used to protect

depositors and strengthen the stability and efficiency of financial systems around the world. In this ratio, two types of capital are measured: Tier 1 capital, which can absorb losses without the bank having to stop trading, and Tier 2 capital, which can absorb losses but provides less protection from offers depositors [20]. These capital levels are introduced in the form of Basel contracts as follows:

Tier 1: Tier 1 capital is capital that is permanently and easily available to absorb losses incurred by a bank without the bank having to stop its operations. A good example of Tier 1 capital for a bank is its common share capital. The first Basel agreement requires banks to maintain the capital adequacy ratio at the level of 8%. Second-tier agreement: Second-tier capital is capital that provides less protection for depositors and creditors in case of losses for the bank. This capital is used to absorb losses if the bank loses all of its Tier 1 capital.

Third Party Agreement: It is an international regulatory agreement that has created a series of reforms to improve regulation, supervision and risk management in the banking sector. The Banking Supervision Committee of the Ball issued the first version of the third ball in late 2009, giving banks approximately three years to meet all the requirements. Broadly, in response to the credit crisis, banks are required to maintain appropriate leverage ratios. The Third Basel Agreement is part of the ongoing effort to strengthen the banking regulatory framework. These documents are based on the first Basel and the second Basel and seek to improve the ability of the banking sector to deal with financial stress, improve risk management and strengthen the transparency of banks. The focus of the third Basel is to strengthen more resistance at the level of certain banks in order to reduce shock risk [15].

Therefore, each bank should always establish a proper ratio between capital and risk in its assets because capital plays an important role in the financial stability of each bank and enables the bank. To have the ability to repay his debts under different conditions. One of the methods of measuring the ratio between capital and asset risk is the capital adequacy ratio, which represents the bank's credit position and the basis for making decisions for each person's transaction with the bank, and because of the protection that this ratio provides against unexpected losses. It is the main source of public trust in the bank and if they do not keep enough capital to cover their losses, their debts will increase from their assets and cause bankruptcy. In addition, since the maintenance of reliable funds and capital sources reduces the risk of bank depositors, it is considered one of the important indicators for evaluating the financial status of banks. In short, the meaning of capital adequacy is that the bank has enough capital to deal with possible crises so that it does not end up in a situation of closure and bankruptcy, and in order to reduce the risk of losses to depositors, it is necessary to comply with minimum capital adequacy ratios [18].

$$\text{Capital adequacy ratio} = \frac{\text{Basic capital}}{\text{Total risk} - \text{adjusted assets}} \geq 8\%$$

Basic capital = Tier 1 capital to Tier 2 capital

Tier 1 capital (principal capital): It is the most reliable asset that the bank has in difficult situations. can rely on it and it should not be less than 50% of the total base capital of the bank, which includes the folloBasel:

Paid capital and announced reserves (disclosed (legal reserve - precautionary reserve - general reserve) - accumulated profit - spending on shares - undivided profit or the current year's profit of minority shares in the bank.

Second-tier capital (supplementary capital): This capital has a lower quality than first-tier capital and is accepted up to the maximum equivalent of first-tier capital, which includes the folloBasel: undeclared reserves (which are mentioned in the bank's annual reports for reasons It cannot be done, but it is accepted by the regulatory authorities) - asset revaluation reserve (maximum 55% reserve) - general reserve reserve for doubtful debts, maximum up to 1.25% of risky assets) (dual-purpose capital instruments) (with the characteristics of capital and some of Debt characteristics) - Subordinated long-term debt (up to 50% of Tier 1 capital) - Cumulative permanent preferred stock.

Explanation that dual-purpose capital instruments and long-term sub-debt (a loan that cannot be redeemed in a long-term range and its payment does not have priority. They are among the instruments with an interest rate mechanism that help reduce the bank's risk when losses occur, but in Iran does not have such tools due to the elimination of interest from the banking system and the fact that banks are state-owned.

Regarding the impact of banking monetary law and capital requirements on the lending power and financial stability of banks, in December 2010, the Basel Committee, which is responsible for supervising the banking sector, for the first

time introduced two liquidity requirements in the Basel III agreement. Slow: Liquidity coverage ratio, which ensures that the bank has a sufficient amount of assets with high liquidity, for 30 days of resistance in crisis conditions, and the stable net investment ratio, which motivates the financing of activities. Banks with more stable resources increase the bank's resistance in longer time horizons. In this ratio, the bank's resources are classified in terms of stability, and on the other hand, the bank's need for stable or long-term resources is measured. A bank's stable resources should provide adequate coverage for its long-term needs [7]. To cover 30-day liquidity in critical situations, deposits are classified in terms of withdrawal risk and a number is obtained that indicates the probability of withdrawal of resources in the next 30 days; for example, large deposits have a higher withdrawal risk than small deposits or deposits. related to employee rights. High-quality cash or liquid assets are classified in terms of stability, and on the other hand, the bank's need for stable or long-term resources is measured. The bank's stable resources must provide sufficient coverage for its long-term needs. These calculations are presented through very precise formulas.

According to the provisions of Part III, banks will be strictly required to double their capital as a risk reserve to cover potential losses, cut dividends and operating expenses when reserves are depleted, and grant facilities when they are booming. economic limit.

In Basel III, difficult conditions are considered for commercial and corporate investments, which practically forces banks to withdraw from these types of investments. In other words, in Basel III, resources for major investments in commercial companies must be provided by the bank shareholders themselves. should be prepared and depositors' resources should not be used in this matter. The rules related to liquidity, regulating the quality of providing facilities, being prepared to deal with crisis situations and preventing double investments are among the other strict regulations of Ball III.

Chiaramonte and Caso [6], examine the determinants of bank stress for 513 banks from 28 EU member states. Using a logit model, they found that banks with higher liquidity were associated with a lower probability of bank stress. Li et al. [19], investigate how the pace of adjustment of US banks with a stable net funding rate requirement affects systemic risks. They find that when banks react more quickly to the new regime and increase the net stable funding rate, systemic risk slows down. Therefore, in general, previous research indicates that if banks adhere to the III liquidity standard, the lending power and banking stability will increase [20]. in relation to the impact of banking monetary law and capital requirements on lending power and bank financial stability, theoretically, the greater impact of capital on the balance sheet of banks is clear. Higher capital acts as a buffer against losses. They also provide incentives for better supervision and borrowers to make the bank more likely to survive. However, the empirical literature is inconclusive on whether better capitalization is beneficial for bank stability [27].

Liu and Xi [18], have investigated this issue in a study on "Liquidity, capital requirements and shadow banking". In this research, the role of capital requirements in adjusting market liquidity is examined. Liquidity is an essential factor and suppresses the problem of risk shifting in the event of a negative shock. However, hoarding too much liquidity is costly because it hoards efficient capital. Capital requirement in commercial banks reduces deposit yield. Therefore, it is clear that one of the consequences of the implementation of Basel III agreement, and specifically the two capital and liquidity requirements, can affect the stability of the banking sector as well as banks' lending, and this issue needs to be investigated.

Based on the investigations, it is clear that the current research has the folloBasel innovations compared to the previous research:

1. In terms of subject matter, so far no research has been done to examine the consequences of the implementation of Basel III agreement and specifically the simultaneous effects of two capital requirements and liquidity on the stability of the banking sector and also bank lending, which can be considered as an aspect of innovation. In the current research, it can lead to the development of literature related to the development of the banking sector in the two fields of banking sector stability and bank lending power.

2. In terms of time, the current research uses the latest data available in Iran, which can be considered as another aspect of the innovation of the current research.

Research methodology

This research is considered to be an applied research in terms of its purpose, because the results can be used in the decisions of the national authorities. Also, from the aspect of inference regarding the research hypotheses, it is placed in the descriptive-correlation research group, because the correlation coefficient of regression techniques will be used to discover the relationships between the research variables. Also, since we will reach a conclusion through testing the

available data, it is a cross-sectional research from a time point of view. Regarding the implementation stages of the research, at first, by studying the sources, including Persian and Latin books and articles, and translating the articles, entering the main discussion will be done and collecting theoretical information on the subject will be discussed.

The subject area of the current research is the topics related to the requirements of the banking monetary law, capital requirements, lending power, financial stability and the relationship between them. The statistical population of this research is the banking sector of the country including commercial banks and credit financial institutions active in the stock market (19 companies including Ansar Bank, Saman Bank, Pas Bank, Iran Zameen Bank, Capital Bank, Mellat Bank, Saderat Bank, Tourism Bank, Pasarguard, Tejarat Bank, Sina Bank, Entrepreneur Bank, New Economy Bank, Bank *D*, Hikmat Iranian Bank, Eindho Bank, Parsian Bank, Middle East Bank and Shahr Bank) from 2011 to 2020.

In order to investigate the impact of the banking monetary law and capital requirements on the lending power and financial stability of active banks admitted to the Tehran Stock Exchange, according to Choi & Park [7]. It has been used:

$$\text{Lending}_{\text{it}} = c0 + c1\ \text{Liquidity}_{\text{it}} + c2\text{Capital}_{\text{it}} + e_{\text{it}}$$
$$Z - \text{Score it} = c0 + c1\text{Liquidity}_{\text{it}} + c2\text{Capital}_{\text{it}} + c3\text{Lending}_{\text{it}} + e_{\text{it}}$$

where in:

Lending index: It is defined and calculated as the growth rate of bank loans.

Bank Stability Index (*Z*-Score): It is calculated based on the folloBasel relationship:

In which, ROA represents the rate of return on assets, which is defined as the ratio of net income to total assets of the bank. Capital ratio is defined as the ratio of equity to total assets, and ROA represents the standard deviation of the return on assets.

Bank Monetary Law (Liquidity): It is defined as a virtual variable that has a value equal to one for banks whose Net Stable Funding Rate (NSFR) is greater than 100% and otherwise has a value equal to zero. The net fixed rate is calculated as follows:

$$\text{NSFR} = \text{ASF}/\text{RSF}$$

ASF = total available stable funds, which is calculated as the sum of equity + liabilities with a maturity of more than one year.

RSF = total stable funding requirement, which is calculated as the sum of the bank's capital + liabilities with a maturity of more than one year.

Due to the fact that this variable is defined according to Ball III law, it is considered as zero and one.

Capital requirements: Due to the non-compliance of the capital adequacy ratio by most banks in Iran, in order to classify banks more precisely in relation to capital requirements, it has been done in such a way that the banks whose capital adequacy ratio is less than zero, a value equal to one, banks whose capital adequacy ratio is between zero and 4, a value equal to one, banks whose capital adequacy ratio is between 4 and 8, a value equal to 2 and for banks that If their capital adequacy ratio is greater than 8, a value equal to 3 will be considered. in order to estimate the research patterns and analyze the data, simultaneous equation system methods are used using Eviuse software version 9.

Research findings

Description of the statistical sample

After collecting the data and calculating the variables used in the research, the descriptive parameters of each variable are calculated separately. Table 1 shows the statistical description of dependent, independent and control variables for all the observations of this research. These parameters include information related to central indicators such as mean, median, minimum and maximum, as well as information related to dispersion indicators such as standard deviation, skewness and kurtosis.

As can be seen in Table 1, the average bank lending power index is equal to 0.19 and its median is equal to 0.15, which shows that most of the data related to this variable are centered around the average. Dispersion indices are generally a measure to determine the extent of data dispersion from each other or the extent of their dispersion relative

Table 1: Statistical description of research model variables

Variable	Lending power	banking stability	Liquidity requirements	Capital requirements
symbol	LENDING	ZSCORE	LIQUIDITY	CAPITAL
Average	0.180745	0.694729	0.573099	1.847953
Middle	0.150854	0.606321	0.660121	1.000000
Maximum	0.659049	1.124316	1.000000	4.000000
At least	0.039084	0.061063	0.000000	0.000000
standard deviation	0.093870	0.258445	0.496080	1.422605
crookedness	3.042334	1.839930	-0.295574	0.343302
Elongation	4.670594	2.737582	1.087364	1.759691
Number	171	171	171	171

Source: Research findings

to the average. One of the most important dispersion indices, which is the ideal condition for entering the variable into the regression model, is the standard deviation. As can be seen in Table 1, the standard deviation of the variables is not zero and they have this condition. The skewness parameter shows the degree of asymmetry of the frequency curve of the variable. If the coefficient of skewness is zero, the society is completely symmetrical, and if the coefficient is positive, there will be a skew to the right, and if it is negative, there will be a skew to the left. For example, the coefficient of skewness of the bank lending power variable is positive and equal to 3.04, which means that the frequency curve of this variable in the studied society is skewed to the right and deviates from the center of symmetry to this extent. Also, the elongation of this variable is equal to 6.67, which is more than the number 3 corresponding to the normal distribution, and as a result, it is more elongated than the normal distribution. Finally, it can be seen that the number of observations for the bank lending power variable and other variables is equal to 171 observations.

Estimation of models by the system of simultaneous equations method.

In panel data econometrics, it is assumed that the data used have cross-sectional independence. This assumption, like other assumptions, may not be true, so the first step in the econometrics of panel data before performing any test is to detect cross-sectional dependence or independence. In this research, the cross-sectional dependence test of pesaran [22]. was used and its results are in Table 2. Come.

Table 2: The results of cross-sectional dependence test of pesaran for the variables of the system of equations

Variables	The value of pesaran test statistics	(Prob) meaningful
Lending power	13.63	0.000
banking stability	21.63	0.000
Liquidity requirements	3.74	0.000
Capital requirements	9.25	0.000

Source: research findings

In this null hypothesis test, it indicates the absence of cross-sectional dependence in the tested variables. As the results of Table 2 show, the probability value of the pesaran test statistic for the variables is less than 0.05, so the null hypothesis of the pesaran test is rejected and there is cross-sectional dependence in the mentioned variables.

When cross-sectional dependence is confirmed in panel data, the use of conventional panel unit root methods such as Levin et al. [17], Im, Pesaran & Shin (IPS) [13], tests, etc. will reduce the possibility of false unit root results. will increase To solve this problem, there are several tests such as Pesaran [22], unit root test and Hadri and Rao unit root test [12], to check stationarity. The advantage of Hadri and Rao stationarity test over Sonsran's unit root test is that it considers structural failure and cross-sectional dependence simultaneously. Therefore, Hadri and Rao [12] unit root test was used in this study.

The null hypothesis in this test is the stationarity of the tested variables. If the critical values at the 99, 97.5, 95, and 90 percent levels are greater than the stationary statistic, then the null hypothesis is not rejected, and as a result, the desired variable is stationary. According to the results of Table 3, the critical values of all variables are greater than the static statistic, so the null hypothesis is not rejected and all variables are stationary.

In the system of simultaneous equations, before estimating the model, the identifiability of the equation must be determined. According to the condition of degree and rank in the ability to identify the equation in the system of simultaneous equations which is given in Table 4, the equations used in the system of equations are too specific. Therefore, it can be estimated.

The next step is to estimate the system of equations using two-stage least squares in tabular data. The model

Table 3: Hadri and Rao [12] unit root test results for the variables of the system of simultaneous equations

Variable	Critical values at different confidence levels				P-Value	Static statistic	Result
	99%	97.5%	95%	90%		HR	
Lending power	18.459	13.274	11.347	9.219	1.000	0.374	static
banking stability	7.314	6.297	5.374	4.963	1.000	0.224	static
Liquidity requirements	18.526	14.231	12.927	10.729	1.000	0.428	static
Capital requirements	7.634	6.347	5.924	5.634	1.000	0.294	static

Source: research findings

Table 4: Diagnosability of the system of simultaneous equations

	The number of endogenous variables in the equation is minus one (M-1)	The number of predetermined variables left out of the equation (M-K)	Diagnosability
Degree condition	1	2	too specific
	The rank matrix of coefficients of variables (endogenous and predetermined) outside the equation		
Ranking condition	1		Precise or too specific
Degree and ranking condition			too specific

Source: research findings

estimation results are given in Table 5. Limer and Hausman's F test was used to determine the type of model estimation (panel data). The value of Limer's F statistic is given in Table 5, based on which the tabular data is confirmed against pooling. Also, the Hausman test was used to determine the type of panel data model estimation (random effects or fixed effects). Random effects estimation method is selected according to the value of the Hausman test statistic mentioned in Table 5.

Table 5: Estimation results of the system of equations

Variables	Coefficient	Z statistic	Possibility
C0	2.74	1.67	0.000
C1	-0.06	-2.50	0.000
C2	-1.09	-7.31	0.086
C3	0.16	2.36	0.000
C4	1.51	3.31	0.000
C5	0.20	2.80	0.000
C6	-2.15	-3.56	0.000
F Limer	53.97	-	0.000
Hausman test	4.15	-	0.528
R^2	0.7616	-	-
Wald test	289.70	-	0.000

Source: research findings

The mathematical form of the estimated equations is as follows:

$$\text{Lending}_{\text{it}} = 2.74 - 0.06\text{Liquidity}_{\text{it}} - 1.09\text{Capital}_{\text{it}}$$
$$Z - \text{Score it} = 0.16 + 1.51\text{Liquidity}_{\text{it}} + 0.20\text{Capital}_{\text{it}} - 2.15\text{Lending}_{\text{it}}.$$

According to the results of Table 5, it can be seen that the variable of banking monetary law has a negative and significant effect at the 1% significance level on the strength of bank lending. Also, the impact of the banking monetary law on the financial stability of banks is positive and statistically significant at the 1% significance level. In addition, the effect of capital requirements on the financial stability of banks is positive and significant at the 1% significance level. Finally, it can be seen that the effect of lending power on the financial stability of banks is negative and significant at the 1% significance level. With a 1% increase in lending power, the financial stability of banks decreases by 2.15%.

Conclusions and suggestions

The results of the research showed that the banking monetary law had an effect on the lending and financial stability of the banks admitted to the Tehran Stock Exchange. In this regard, it is argued that in the capital channel,

the main emphasis is on the dynamics of the bank's capital and the dynamic change of the ratio of legal capital with the application of monetary policy, which can play a key role in the bank's lending decision by imposing legal capital constraints. Therefore, a bank with a strong financial foundation can obtain a high level of stable net financing ratio, which increases the price of bank assets; But the bank with weak financial base will be helpless in this competition. In this case, the level of competition in the banking system will decrease. In the discussion of risk, determining the degree of uncertainty in the final capital has an effect on the value of credits and its adjustment, which can reflect negative effects on the market. The control and quality of risk management of interbank transactions in critical situations focuses on the internal structures of banks, which, if not managed, may cause problems in the banking industry. In addition, usually risk management and determining the best risk management method is costly and time-consuming and affects profitability, which can ultimately affect banks' lending power. This conclusion is consistent with the findings obtained by Kapan & Minoiu [15], and Adesina [1]. It is also argued about the effectiveness of the banking monetary law on the financial stability of banks admitted to the Tehran Stock Exchange based on the theories of financial intermediation, the role of banks in the economy, providing the necessary liquidity through long-term financial resources, non-cash assets. and cash liabilities. In this way, banks create liquidity and finance non-cash assets through bank deposits. Diamond and Debog show the role of banks in the economy well in their studies. Economic agents have unexpected liquidity needs and banks provide these liquidity needs by providing loans and facilities. By creating liquidity in the economy, banks will have to accept risk for economic agents, however, the role of banks through the creation of liquidity is very important in the economy and the role of banks' resources is much more important in this case. By using the powerful money of the central bank, banks can continue this intermediary role in the absence of financial supervision by the central bank, which can lead to irreparable effects in the economy, which can endanger the financial stability of banks. throw This conclusion is consistent with the findings obtained by Kapan & Minoiu [15], and Mutarindwa et al. [21].

Finally, it was observed that the capital requirements had an effect on the lending and financial stability of the banks admitted to the Tehran Stock Exchange. In this regard, it is argued that the banks that did not have enough capital to cover their risk-weighted assets based on the capital agreement, changed the composition of their asset portfolios in the short term in order to maintain the required legal capital ratio. The lower risk weight of securities compared to loans, the change in the portfolio composition of assets from loans to securities were considered. This explains to some extent the tendency of banks to be present in the securities market instead of operating in the credit market in the condition of low bank capital, and based on many studies such as Berger et al. [5], Tucker [24] and Gerding et al. [10]. The above process properly explains the arbitrage behavior of legal capital of banks after the application of capital Basel one agreement. On the other hand, the above-mentioned approach in the conditions of recession and the application of expansionary monetary policy can lead to a decrease in the efficiency of monetary policy and bring about changes in the usual mechanism of monetary policy transmission. To be more precise, the decrease in bank profit as a result of expansionary monetary policy and decrease in interest rate leads to the contraction of bank capital. Therefore, the reduction of the ratio of legal capital due to the reduction of capital can lead to the ineffectiveness of the expansionary monetary policy in encouraging the lending activity of banks; Because banks will be required to reduce risk-weighted assets and shrink lending activity to maintain their legal capital ratio. In this case, the effectiveness of monetary policy on the lending decision through the capital channel can be somewhat impaired. This issue is depicted to some extent in Tucker's study on the cause of the slow growth of the American economy in the presence of expansionary monetary policy by the monetary authorities. On the other hand, in the lending channel, the bank's capital variable is considered as a static variable in the lending decision.

To be more precise, banks are evaluated based on their legal capital ratio in the market. Therefore, the lower the bank capital adequacy ratio compared to the amount of legal capital, the lower it will be classified in the group of banks with financial health, and therefore it will have a lower credit rating and less access to the external financing market. And in the conditions of applying a contractionary monetary policy, it cannot provide a reduction in deposit resources through the financial market and will face a greater reduction in resources compared to another bank with a higher capital ratio and will be required to further reduce its lending decision. became. This issue has been confirmed in the studies conducted by Keshyap and Stein and Kishan and Apila. The static role of banks' capital in the bank lending channel has even been depicted in the studies conducted by Berger and Odell and Berger et al. in describing the cause of the credit crisis of the early 1990s, and great importance is considered for it. Therefore, theoretically, the relationship between capital requirements and banks' lending power is theoretically confirmed. This conclusion is consistent with the findings obtained by Jorgensen [14], Karim et al. [16], Gambacorta & Marques-Ibanez [9], Allen et al. [2].

Based on the results of the research, it is suggested that the policy makers in the country's banking sector and specifically the Central Bank, which is in charge of the banking sector in the country, should set the necessary rules

and regulations to comply with the liquidity requirements by the banks in order to control and There should be a more careful monitoring of the lending process and the lending power of the country's banks. Also, the legislators and macro supervisors of the country in general and the legislators in the banking sector, the ground for accepting and complying with the liquidity requirements by the managers of the banking sector is provided, so that in this way, while complying with the liquidity requirements and reaching international standards, more stability for the sector The country's banking system should be provided.

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