DETERMINANTS OF INTEREST RATE SPREAD IN BANKING INDUSTRY

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Abstract
This study is done to consider affecting factors on spread rate and define a suitable model of spread rate in banking industry. Spread rate is a difference between two related interest rates. In banking industry, spread rate is the difference between debts rate (especially for deposit) and assets rate (Especially for loan). Interest rate spread has always been one of the most important and significant economic issues in different countries of the world.
In this study, affecting factors on spread rate are considering in an Iranian bank during the last 19 month. Some variables such as NPL ratio, ratio of demand deposits on deposits, non interest income, and interest assets to assets, capital adequacy ratio, ROA ratio and inflation and exchange rate are analyzed on spread rate and a model is defined for bank according to prior studies and economical issues of Iran.

Key words: *Spread rate, affecting factors, loan and deposit rate*

JEL Classification: *E4, E5, G1*

I. INTRODUCTION

Banking is one of the most profitable and effective industry. Banks have extraordinary features and special privileges that give them a high potential profitability. All economic activities including productive and unproductive, value adding or non-value adding, socially useful or useless and etc., need to access to loan and credit from banks, to be successful (Atabaki,2006)

Only a few economic activities (that mainly should find them in micro and small-scale sectors) will be able to finance completely their activities through internal resources. Firms need loan and credit to finance investment, which aims to develop activities and even in the ordinary course of their existing activities. Moreover, the investment financing (or long-term financing) can also be made through share issuance or other shapes of participation and capital accumulation; although long-term financing is also carried out through receiving loan and credit, however, in the short and medium time scale, the most important external source of financing is bank credits (Ahmadian and Kyanvnd, 2015).

Thus, banks are in a position that economic actors have to refer to them and their activities are dependent on the interaction with other banks. This is an exceptional opportunity for the bank's profitability. The bank can freely and without social concern allocate or not allocate financial resources to the applicant only in accordance with the logic of profit maximization. Furthermore, the low attraction of demand for the loan applicant puts the bank in a dominant position to impose its conditions on the applicant. In fact, the strong demand of entrepreneur or economic activist for resources, which in case of inaccessibility to them, has to stop the activity and tolerate serious losses, provides conditions that the bank could easily and with bearing the lowest possible cost, collects some profits from the investment in the form of interest. However, the bank unlike other economic activities that the profitability is not ensured in advance, in exchange of the origin and profit of the loan, takes pledge or different guarantees and thus bears no risk. In fact, the position of bank in terms of profitability and intolerance of risk is not comparable with any economic activities (Maudos and De Guevara, 2004)

Nevertheless, the main cost of the Bank's activities is interest paid on deposits. In fact, bank achieves the main benefit from the difference between interest paid on deposits and interest received from facilities and loans.

The difference between these two rates is called spread rate. This index with multiple definitions in the banking literature generally equals to the difference between the average interest earned from interest-earning assets and average interest paid for resources (Atabaki, 2006, p.1, Demirgüç-Kunt, Huizinga, 1999, p.379)

II. SPREAD RATE THEORETICAL FOUNDATIONS

Interest rate spread has always been one of the most important and significant economic issues in different countries of the world. Significant studies and researches were carried out by banking system researchers in order to find the reason of fluctuations of this rate and affecting factors on that.

Important factors that affect in banking variable, have proved that the level of inflation, the provisions related to the legal reserves, market structure and bank performance are affecting factors on the mentioned variable (Nazarian, Hashemi Nejad, 2010, p.131, Afanasieff, Lhacer et al., 2002, p. 183).

Economists suggest that efficient banks with better performance, reduce their costs and thus they can allocate more market share for themselves. According to this view, the competitive environment may create more efficient and focused banking system. The existence of legal institutions prevents monopoly in the banking system so that it can improve the spread rate (Demirgüç-Kunt, Laeven et al., 2003, p.1, Afanasieff, Lhacer et al., 2002, p.183, Ahmadian, Kyanvnd, 2015, p.15)

The high spread rate declares the problems in the regulatory environment of bank and asymmetry of information. In other words, higher spread rate can improve profitability of banking system, the depth of banking and financial stability with increased tolerance against negative shocks (Doliente, 2005) and also the high spread rate cannot always be a good indication of the efficiency of the banking system, but it may indicate inadequate regulation and banking system instability. If a bank is with poor performance, it tries to reduce lending interest rates in order to obtain a greater share of the market (Brock and Suarez, 2000, p. 113, Nazarian, Hashemi Nejad, 2010, p.131)

High spread rate indicates the low efficiency of the banking system and non-competitive market conditions. On the other hand, according to them, high amount of this variable indicates inadequate regulations and high level of information asymmetry and reflects the high risk of banking. In these circumstances, bank instability increases (Nazarian and Hashemi Nejad, 2010)

Some studies examined some hypotheses about the interest rate spread and concluded that the spread rate increases with capital to assets ratio of banks. Therefore, it seems that the increased cost of capital (that arises from capital regulations) is transferred to the borrowers (Atabaki, 2006)

A positive relationship exists between spread rate and market structure that reflects the non-competitive pricing behavior in the centralized market. Market power hypothesis suggests that banks that have a large share of the market can get market power in pricing and a larger share of the market. High spread rate may be inappropriate because it causes the lack of intermediation. Low interest rate on deposits would be the cause of reduction in depositing. High Interest rates on loans, on the other hand increases the cost for investors. Hence, the high spread rate can be indicative of inefficiency in the banking system (Ahmadian, Kyanvnd, 2015, p. 15, Saunders, Schumacher, 2000, p. 813)

In the determination of interest margin for the US banks using annual data, rate spread was considered as a function of variables of non-payment risk, interest rate risk, and the interaction between the risk of interest rate and non-payment risk, liquidity risk (liquid assets to total asset ratio), Liabilities to net assets ratio, cost of resources without interest and performance management. The results show that variables of non-payment risk (non-performing loans ratio), cost of opportunity of non-interest provisions, the ratio of debt to equity, the ratio of capital to total assets and management efficiency (ratio of income earning assets to total assets) are statistically significant. Moreover, they are directly related to the interest rate spread and liquidity risk variable is associated with it, inversely (Angbazo, 1997, p.55, Ahmadian, Kyanvnd, 2015, p. 15)

Some factors have important role in the definition of the interest rate spread, such as direct taxes, required provisions, and transactional costs and imposed conditions by environment (Hanson and de Rezende Rocha, 1986)

The share of bank as market power, observed an important difference in the spread rate of small and large banks. This means that small banks have different and higher profit rates than larger banks (Nazarian and Hashemi Nejad, 2010)

Some authors have considered the effect of rules and principals of 6 to 15 Basel on the performance of the banking system. Indicators of return on assets, return on shareholders' equity and banking rate spread have been considered as performance indicators in the banking system. The results indicate that the use of rules of the Basel would cause to improve the bank's spread rate as an indicator of performance of the banking system. In fact, the provisions of the Basel with prevention of bankruptcy can improve the performance of the banking system

(Atabaki,2006)

A systematic comparative analysis of the determinants of interest rate spreads of banks in Central and Eastern European and Western European countries is done. According to result, concentration levels, operative efficiency, capital adequacy and risk management are important determinants of interest rate spreads in both groups of countries. Institutional reforms initially cause risky bank behavior, which is manifested in higher interest rate spreads. However, as institutional reforms advance, they result in narrower spreads as a result of greater competitive pressure (Claeys and Vander Vennet, 2003). These results contrast with some research on the effects of financial liberalization measures in Colombia in the early1990s (Barajas, Steiner et al., 1999)

They find that liberalization has no direct impact towards narrower interest rate spreads. They conclude that the effects are mainly related to the change of the level of significance of particular factors which affect the interest rate spread (Azvajy, Farhadi Kia,2008, p. 119, Ahmadian, Kyanvnd, 2015, p. 15)

One of the bank's duties is managing risks that they face. If there is no risk management, banks will face bankruptcy. To prevent bankruptcy, banking regulations are enacted. On the other hand, the banking regulations can affect competition in the banking market. These regulations can affect performance if they eliminate monopoly or push banks to compete (Darabi and Mowla'ii, 2012)

World Bank in1998 examined the determinants of interest rate spread by using cross-sectional data for eighty countries. The survey includes several variable factors such as some variables of banking-accounting, macroeconomic conditions, explicit and implicit tax (legal deposits), deposit insurance rules and generally financial structure and legal regulations. Researchers found that the interest rate spread is directly affected by the ratio of net assets to total assets, the ratio of loans to total assets, bank size (measured by total bank assets), and operating cost to total assets ratio, inflation and short-term interest rates. Non-interest income to total assets ratio is inversely related to interest rate spread. All mentioned variables are statistically significant and growth variable of gross domestic product seems to have no effect on spread rate (Atabaki, 2006)

III. SPREAD RATE CALCULATION

The methods of calculating the spread rate classified into two types: pre-performance method and post-performance method (Ahmadian and Kyanvnd, 2015)

Pre-performance method: This method is obtained according to approval rates and with the remaining share of net loans and deposits, regardless of the amount of the profits at the end of the financial period. In this method, the weighted average cost (Interest) paid to each of the financing resources is deducted from the interest which is calculated as a weighted average.

Post-performance method: This method is based on the performance of bank at the end of a financial period, which is calculated by using the remaining of items in balance sheet and profit and loss statement that is achieved at the end of the financial period.

According to approval of the Money and Credit Council in Iran, the rate of interest should be determined based on the inflation rate plus a specific percentage as expected real return of depositors. Lending interest rate should also be considered four percentage points higher than that. In other words, the approved difference must be four percent and that is something that has never been practiced in recent years. Some carried out studies and calculations in Iran (based on the pre-performance method) shows that there are significant differences in how to calculate this rate.

There is no consistent definition on how to calculate the interest rate spread. In general, the method of calculating the interest rate spread is divided into two definitions of narrow and broad. In addition, there is another method, which is called weighted average method, and many conducted studies in the recent years in Iran have been based on this method. However, because this method estimates the expectations of earnings and payment of cost of financing abstractly, it has less reliability (Mazroii Rad and Salehi et al., 2013)

Accordingly, the dependent variable (interest rate spread) will be calculated as follows by using the definition of interest rate of loans and deposits and is obtained from the following equation:

$$\textbf{Interest Rate Spread} = \frac{\textbf{Interest gained from loans}}{\textbf{Total loans}} - \frac{\textbf{Interest paid to deposits}}{\textbf{Total deposits}}$$

This equation shows the result of the Bank's activities on absorption and allocation of resources based on the rate and since the share of bank trading offices (Foreign exchange, stocks, bonds and other assets) are not significant to their bank offices, applying this definition would be the best option.

World Bank has provided a report on the spread rate's situation in countries around the world. In addition, they admit that the high spread rate in some countries means higher cost of capital, investment reduction and tend to do short-term risky investment projects and causing a deviation from the long-term late return investments with higher social achievements. Moreover, rates of high spread rate damages small and medium businesses and strengthen non-official economy (Darabi and Mowla'ii, 2012)

IV. PRIOR STUDIES OF CHOSEN INDICATORS

In table 1, prior studies of whole variables which used in this study are shown.

Table 1 , variables prior studies

Variables	Author	Title of research
NPL	Georgievska, L ,.et al (2011)	Determinants of lending interest rates and interest rate spreads
	Afzal,A. (2012) and Mirza, N.	Determinants of interest rate spreads in Pakistan's commercial banking sector
	Nazarian, R. Hasheminejad,AA. (2009)	Determinants of interest rate spreads in Iran's network of state banks
	Atabaki, M (2006)	Determinants of interest rate spread in Iran's economy
	Angbazo, L.,(1997)	Commercial Bank Net Interest Margins, Default Risk, Interest Rate Risk, and Off-Balance Sheet Banking"
SDD	Nazarian, R. Hasheminejad,AA. (2009)	Determinants of interest rate spreads in Iran's network of state banks
NIR	Afzal,A. (2012) and Mirza, N.	Determinants of interest rate spreads in Pakistan's commercial banking sector
	Nazarian, R. Hasheminejad,AA. (2009)	Determinants of interest rate spreads in Iran's network of state banks
RAR	Angbazo, L.,(1997)	Commercial Bank Net Interest Margins, Default Risk, Interest Rate Risk, and Off-Balance Sheet Banking"
CA	Georgievska, L ,.et al (2011)	Determinants of lending interest rates and interest rate spreads
	Afzal,A. (2012) and Mirza, N.	Determinants of interest rate spreads in Pakistan's commercial banking sector
ROA	Georgievska, L ,.et al (2011)	Determinants of lending interest rates and interest rate spreads
	Afzal,A. (2012) and Mirza, N.	Determinants of interest rate spreads in Pakistan's commercial banking sector
	Chortareas,GE., Et al(2009)	Market structure, Profits, and spreads in the Mexican Banking industry
INF	Nazarian, R. Hasheminejad,AA. (2009)	Determinants of interest rate spreads in Iran's network of state banks
	Atabaki, M(2006)	Determinants of interest rate spread in Iran's economy
EXR	Nazarian, R. Hasheminejad,AA. (2009)	Determinants of interest rate spreads in Iran's network of state banks

V. MAIN QUESTION

The main question in this study is what are the affecting factors on spread rate in banking industry?

VI. RESEARCH HYPOTHESIS

According to prior studies and research model, nine hypotheses are considered as follows:

- ✓ There is a significant relationship between spread rate and Non- performing loan ratio (NPL).
- ✓ There is a significant relationship between spread rate and ratio of demand deposits on deposits (SDD).
- ✓ There is a significant relationship between spread rate and non-interest income (NIR).
- ✓ There is a significant relationship between spread rate and interest earning assets to assets (RAR).
- ✓ There is a significant relationship between spread rate and capital adequacy ratio (CA).
- ✓ There is a significant relationship between spread rate and return on asset ratio (ROA).

VII. RESEARCH METHODOLOGY

- **Research type**

This study is applied research in terms of aim and is Cross-correlation in terms of way.

- **Research Variables**

Spread rate is dependent variable in this study. There are 6 variables such as NPL ratio, ratio of demand deposits on deposits, non interest income, and interest earning assets to assets, capital adequacy ratio and ROA ratio as independent variables. There are 2 variables such as inflation (INF) and Exchange rate (EXR) as control variables.

- **Variables definition**

✓ **NPL ratio:** This is equal to the average of the past due receivables, overdue and doubtful to total loans.

✓ **Ratio of demand deposits on deposits:** This ratio is equal to the average of demand deposit and interest free deposit to deposits.

✓ **Non-interest income ratio:** This ratio is equal to revenues and fees from services other than banking facilities to assets.

✓ **Interest earning assets to assets:** This ratio is equal to total interest assets such as average net facilities, bonds, and investments to assets.

✓ **Capital adequacy ratio:** This ratio is the ratio of capital to weighted asset.

✓ **Return on asset ratio:** It is the division of net income or return on assets.

✓ **Inflation:** Inflation is the consumer price index growth rate that is extracted from Central Bank of Iran data in formal website.

✓ **Exchange rate:** This ratio is the average of U.S.D price that is extracted from Central Bank of Iran data in formal website.

- **Data collection**

Data which is used in this study is gathered from annual financial reports of an Iranian bank during 19 months from September 2014 up to March 2015 and some reports of central bank of Iran's website.

- **Research analysis**

The data are analyzed with SPSS, Eviews and Microsoft Excel software.

- **Research model**

The article is tried to consider hypotheses with this formula:

$$Rate\ spread_t = \beta_1 + \beta_2 (NPL)_t + \beta_3 (SDD)_t + \beta_4 (NIR)_t + \beta_5 (RAR)_t + \beta_5 (ROA)_t + \beta_6 (INF)_t + \beta_7 (CA)_t + \beta_8 \log (EXR)_t$$

VIII. RESULTS AND DISCUSSION

- **Descriptive statistics**

In table 2, descriptive statistics are calculated. Minimum and maximum and also, mean and stead deviation of variables are shown.

Table2. Descriptive statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
IRS	19	1.61	5.53	3.48	1.23
CA	19	15.75	20.05	18.59	1.29
ROA	19	-1.60	4.41	2.47	1.50
NIR	19	-0.76	1.77	0.7329	0.66
RAR	19	66.06	76.53	72.15	2.59
NPL	19	5.96	9.52	7.54	1.45
SDD	19	5.23	7.23	5.91	0.71
INF	19	15.6	40.4	28.01	9.52
EXR	19	4.39	4.44	4.41	.01
Valid N (listwise)	19				

In table 3, one-sample Test is done based on test value, zero. The lower and upper level of each variable is in 95% confidence interval of the difference with significant 2-tailed of zero.

Table 3. One-Sample Statistics

Variables	N	Mean	Std. Deviation	Std. Error Mean
IRS	19	3.49	1.23	0.28
CA	19	18.59	1.29	0.30
ROA	19	2.48	1.50	0.35
RAR	19	72.15	2.59	0.59
NIR	19	0.73	0.66	0.15
NPL	19	7.54	1.45	0.33
SDD	19	5.91	0.71	0.16
INF	19	28.01	9.52	2.18
EXR	19	4.41	.017	.00

In table 4, the Correlations between variables are discussed. Correlations are significant at the 0.05 and 0.01 level (2-tailed) as follows.

Table 4. One-Sample Test

Variables	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
IRS	12.351	18	.000	3.49	2.89	4.08
CA	62.836	18	.000	18.59	17.97	19.21
ROA	7.172	18	.000	2.48	1.75	3.20
RAR	121.479	18	.000	72.15	70.90	73.40
NIR	4.843	18	.000	0.73	0.41	1.051
NPL	22.657	18	.000	7.54	6.84	8.24
SDD	36.325	18	.000	5.91	5.57	6.26
INF	12.829	18	.000	28.01	23.42	32.60
EXR	1110.585	18	.000	4.41	4.40	4.42

- **Estimation of model**

According to extracted results, the model of spread rate is shown as follow. In this model spread rate as dependent variable equal to some coefficient multiple independent variables plus a fix amount. This model is finalized at bank based on information during 19 months. This model can predict the relationship between spread rate and some affecting factors in bank for future.

IRS =5.26 - 0.97*NPL + 2.76*SDD - 0.796*NIR - 0.38*RAR + 0.67*ROA - 0.2*INF - 0.3*CA - 0.48* EXR

In table 5, results of estimation are calculated. This is clear that Prob (F-statistic) is about 0.00004 and less than 0.05, so, this model is accepted and there is a logical relationship between dependent and independent variables and also, all coefficients are significant.

According to results, R-squared is equal to 0.96 and this is shown that estimation can explain variables well and the changes of independent variable were presented with independent variables completely. If the model considers degree of freedom, Adjusted R-squared is close to one and is equal to 0.93. Amount of these R-squared and Adjusted R-squared show that the specified model makes the certainty properly for deciding and other analyses.

Durbin-Watson statistic is suitable to distinguish autocorrelation disturbance components in regression model. As the results are shown the auto correlation from first level does not exist in model.

Table 5. Estimation results

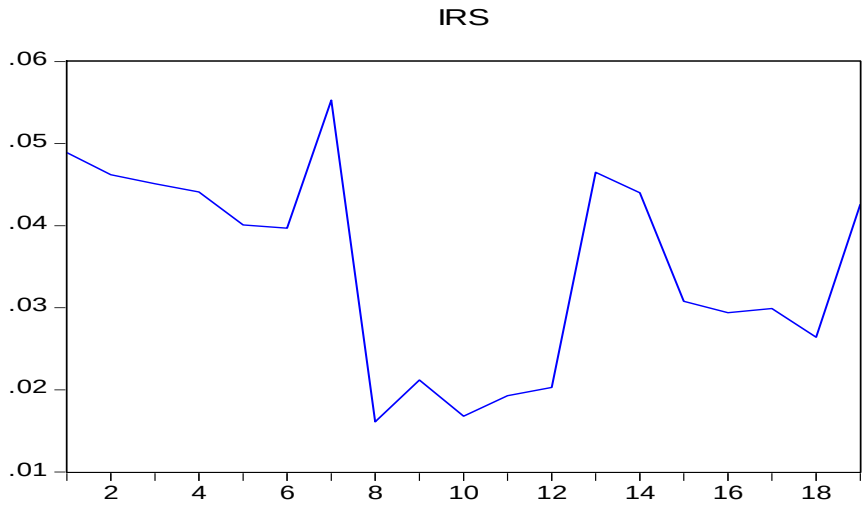
Dependent Variable: IRS
Method: Least Squares
Date: 07/15/15 Time: 15:05
Sample: 1 19
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.79	0.21	3.69	0.0042
NPL	-0.98	0.44	-2.21	0.0517
SDD	2.77	0.74	3.74	0.0038
NIR	-0.76	0.34	-2.20	0.0520
RAR	-0.38	0.08	-4.99	0.0005
ROA	0.66	0.16	4.10	0.0022
INF	-0.19	0.05	-3.49	0.0059
CA	-0.33	0.12	-2.70	0.0223
EXR	-1.80	5.99	-3.00	0.0132

R-squared	0.962285	Mean dependent var	0.034879
Adjusted R-squared	0.932114	S.D. dependent var	0.012304
S.E. of regression	0.003206	Akaike info criterion	-8.342247
Sum squared resid	0.000103	Schwarz criterion	-7.894881
Log likelihood	88.25135	Hannan-Quinn criter.	-8.266535
F-statistic	31.89356	Durbin-Watson stat	2.319449
Prob(F-statistic)	0.000004		

In figure 1, the spread rate curve is shown during 19 months as follow.

Figure 1. Spread rate curve



- **Auto correlation test**

As table 6, is shown the Prob (F-statistic) is more than 0.05 and this point is reviewed there is not autocorrelation from higher than one in the finalized model of spread rate.

Table 6. Auto correlation test

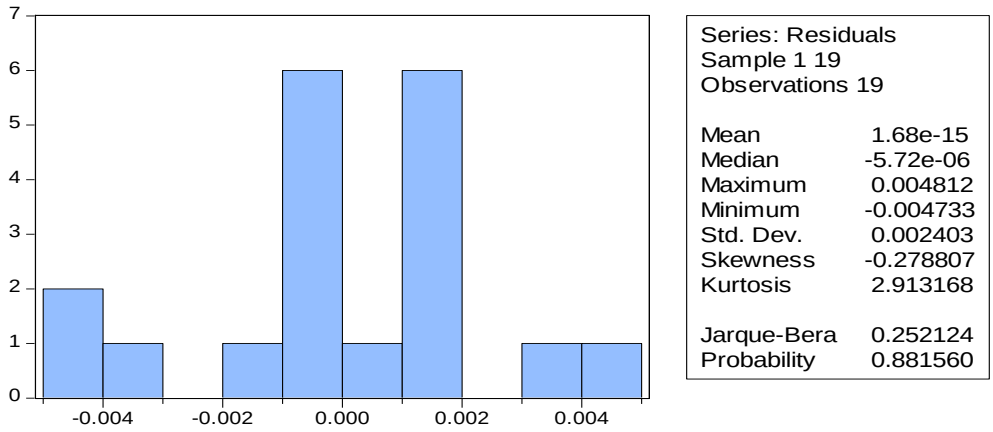
Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	1.681873	Prob. F(2,8)		0.2456
Obs*R-squared	5.624129	Prob. Chi-Square(2)		0.0601
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.082	0.207	-0.396	0.7019
NPL	0.051	0.432	0.117	0.9090
SDD	0.002	0.714	0.004	0.9968
NIR	0.028	0.341	0.083	0.9355
RAR	-0.000	0.074	-0.007	0.9943
ROA	-0.069	0.160	-0.435	0.6749
INF	0.007	0.052	0.138	0.8936
CA	0.149	0.142	1.044	0.3266
EXR	1.940	5.720	0.339	0.7429
RESID(-1)	-0.495	0.388	-1.277	0.2373
RESID(-2)	-0.643	0.376	-1.712	0.1252
R-squared	0.296007	Mean dependent var		3.51E-17
Adjusted R-squared	-0.583985	S.D. dependent var		0.002389
S.E. of regression	0.003007	Akaike info criterion		-8.482707
Sum squared resid	7.23E-05	Schwarz criterion		-7.935927
Log likelihood	91.58572	Hannan-Quinn criter.		-8.390170
F-statistic	0.336375	Durbin-Watson stat		2.414830
Prob(F-statistic)	0.945083			

- **Normality test**

According to normality test result, Jarque–Bera test and probability more than 0.05, it is concluded that the normality of distribution of residual sentences and also the skewness and kurtosis of model are shown in figure 2.

Also, The skewness and kurtosis test is considered. Skewness is a measure of symmetry or asymmetry of the distribution function. For a perfectly symmetrical distribution, skewness is zero and for an asymmetrical distribution of the strain to the higher, the amount of skewness is positive and the asymmetric distribution of strain on smaller amounts, the amount of skewness is negative. Kurtosis indicates the height of a distribution. In other words, a measure of the height of the curve at the point of maximum strain and strain rate is 3 for normal distribution. Positive strain means the peak of the distribution is higher than the normal distribution and negative strain means a sign below the peak of the normal distribution. With explanations provided here skewness and Kurtosis are negative. It means that amount 0.27- of skewness indicates that the distribution is asymmetric to the smaller quantities drawn and also amount 2.93 of Kurtosis is negative because it is the smaller than normal distribution (which is equal to 3).

Figure 2. The normality test



- **Heteroskedasticity Test**

One of important hypothesis test is Heteroskedasticity Test for finding homogeneity of variance. If there is not the same variance in terms of disruption will be accrued the anisotropy of variance in model. In this model the results of Heteroskedasticity Test based on Breusch-Pagan-Godfrey and also arch types are calculated and are shown (tables 7 and 8) that the Prob (F-statistic) is more than 0.05 and this point prove that the model does not have problem with variance.

Table 7. Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
F-statistic	1.435807	Prob. F(8,10)		0.2906
Obs*R-squared	10.15722	Prob. Chi-Square(8)		0.2542
Scaled explained SS	2.720670	Prob. Chi-Square(8)		0.9506
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.5105	0.0004	-0.0528	0.9589
NPL	0.0002	0.0009	0.2117	0.8366
SDD	-0.0018	0.0016	-1.1301	0.2848
NIR	-0.0007	0.0007	-0.9823	0.3491
RAR	0.0001	0.0001	0.8280	0.4270
ROA	0.0006	0.0003	1.7671	0.1077
INF	6.1305	0.0001	0.5005	0.6275
CA	-9.9805	0.0002	-0.3692	0.7196
EXR	5.2310	1.3208	0.0395	0.9692
R-squared	0.5346	Mean dependent var		5.4106
Adjusted R-squared	0.1622	S.D. dependent var		7.7306
S.E. of regression	7.0706	Akaike info criterion		-20.5750
Sum squared resid	5.0010	Schwarz criterion		-20.1276
Log likelihood	204.4628	Hannan-Quinn criter.		-20.4993
F-statistic	1.4358	Durbin-Watson stat		2.7188
Prob(F-statistic)	0.2906			

Table 8. Heteroskedasticity Test: ARCH

Heteroskedasticity Test: ARCH			
F-statistic	0.229697	Prob. F(1,16)	0.6382
Obs*R-squared	0.254752	Prob. Chi-Square(1)	0.6137

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.0006	2.3706	2.111278	0.0508
RESID^2(-1)	0.1192	0.2488	0.479267	0.6382
R-squared	0.0141	Mean dependent var		5.6806
Adjusted R-squared	-0.0474	S.D. dependent var		7.8606
S.E. of regression	8.0406	Akaike info criterion		-20.5195
Sum squared resid	1.0309	Schwarz criterion		-20.4206
Log likelihood	186.6761	Hannan-Quinn criter.		-20.5059
F-statistic	0.2297	Durbin-Watson stat		1.9459
Prob(F-statistic)	0.6382			

IX. CONCLUSION

The study examines the factors affecting on spread rate during 19 months from an Iranian Bank. The results of the econometric model assumptions have been proven at an acceptable level. Spread rate is a difference between two related interest rates. In banking industry, spread rate is the difference between debts rate and assets rate. Interest rate spread has always been one of the most important and significant economic issues in different countries of the world (Afzal and Mirza, 2012, p. 987, Dabla-Norris and Floerkemeier, 2007, p. 1)

In the banking sector, the major share of changes in spread rate differs by deposits that banks will not pay for the benefit of depositors.

The ratio of deposits to total deposits (SDD) in accordance with the theoretical expectations with the plus sign and the numeric value is the highest among other explanatory variables. The estimated coefficient for this variable indicates that if the share of this kind of deposits increase one per cent, the difference in spread rate will increase by 2.76 percent, so in accordance with the theoretical foundations, there is a positive relationship between the ratio of low-cost deposits and spread rates.

Non-performing loan (NPL) coefficient states that if the growth rate of this variable one percent increases, the spread rate will increase by 0.97 per cent decline. In other words, the increase in non-current loans, the mount of loans receivables and profit reduced and eventually lead to a reduction in spread rate. Results show there is a significant correlation between the ratio of NPL and spread rate.

As mentioned a source of income for banks is revenues from providing banking services from fees that it called non-interest revenue (NIR).

Revenue services such as opening letters of credit (LC), issuance of bank guarantees, transfers of funds, electronic banking services and other services do not need to spend resources including non-interest revenues. Each of these types of revenues will decrease the bank reliance on revenues from loan. The theoretical basis and the difference between the variable spread rates are negatively correlated. The results of the econometric model estimates show an increase of one percent of non-interest income is reduced the spread rates by 0.79 percentages.

Income-earning assets to total assets ratio (RAR) including management performance indicators, had a negative relation with spread rate. Therefore, the relationships between these two indicators are not meaningful, but statistically significant amount.

In weak banking system such as Latin America (Peru and Bolivia), when NPL increase, spread rate reduce and when capital adequacy increase, it does not impact on spread rate. While the strong banking system, such as Argentina, Chile, Colombia and Mexico when NPL increase, spread rate increase too and when capital adequacy increase, spread rate decrease (Mazroii Rad and Salehi, 2013)

High capital adequacy ratio has a positive effect on the bank's interest rate. They believe there is only one possibility for the opposite case and that is when the bank's capital adequacy ratio is very high in the low-risk assets are likely (Eg. government bonds) and thus leads to a difference in interest rate spread (Georgievska, Kabashi et al., 2011)

In most cases, high levels of capital adequacy in banks caused by the growth of risk assets (reducing the denominator) and capital growth (increase the numerator) had less impact. As a result of this, however, there is a positive effect on indicators of "capital adequacy", but there is a negative effect on "the profitability of the banks" too. According to research done in the past, the overall capital adequacy rate is inversely related to the facility.

In other words, higher capital adequacy could be the result of much lower interest rates than bank assets or facilities and therefore more competitive environment in the market will have credit and banking facilities. The high capital adequacy ratio represents additional potential sources of financing of credit.

In this study, the output corresponds to the capital adequacy with this interpretation, the effect of capital adequacy rate margin is statistically significant and negative, as if the capital adequacy ratio decreased by 0.33 percentage, interest rate spread increase 1%.

As mentioned, the return of assets (ROA) measures the profitability of the dividend comes to total assets and represents profits from asset value per unit and the ability to manage the efficient use of capital and financial resources of the bank to create profits shows. In this study, based on theoretical grounds, this variable is positively related to bank profit margins and the results also showed a significant and positive coefficient of this variable.

Unlike the theoretical foundation, the empirical results show the existence of an inverse relation between exchange rate fluctuations and rate spreads, and also inflation and rate spreads. This suggests inflation may affect economic decisions owners and to accept or reject an investment investor influence.

But what this decision is heavily influenced and the owners of capital will be encourage to the confidence market is risk. Undoubtedly, the banking system is one of the safest markets for investment and small to large depositor's confidence that their money is not only the injured but also benefit from a minimum profit and for much of the population is satisfactory.

The exchange rate fluctuations can influence decision of people who are not willing to risk, therefore it can be concluded that in uncertain situations, the increase in inflation and exchange rate fluctuations, will be increased deposit in banks. As the results show, despite the effect of inflation and exchange rate on spread rate's banks is slight, but the relationship between them is significant.

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