Study of the relationship between competition and financial stability in the banking industry of Iran

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Abstract: Financial stability in the banking industry, is a key feature for successful economies in the world, financial stability in the banking industry as the largest institution of mediation, can prevent the onset of the economic crisis. The financial stability in the banking industry has a particular importance to which be addressed in this study. Competition is one of the effective factors in banking industry. In the present study, using data from the banking industry since 1385 to 1393 in 18 state and private banks, and also the application of generalized torque, the relationship between competition and financial stability of the banking industry in Iran has been studied. To analyze the issue of competition indicators, it has been used Lerner & Boon's Z-score of financial stability indicators and non- current receivables. Evidence suggests that not only competition in the banking system, but also the financial stability in the banking industry has been decreased.

The results of the study show that whatever the economic growth increases, the amount of non-current demand increases, which is indicating the banks' activities. Furthermore based on research findings, increasing of financial stability results in reduction of competition in the banking industry of Iran.

Keywords: Financial stability, competition, banking industries, generalized torques

INTRODUCTION

Today's economists believe that economic development is not possible without the development of efficient financial system. There are two traditional school in the economic development of the financial sector in economic development. The first school says that the financial sector serves for financial services, because the financial sector comparing with other factors are passive which influence on differences in economic growth, therefore the main factor of stock investment rate, public policies should be focused on the

accumulation of physical funds. In the second school of thought, the financial markets are the main criteria for economic growth in many countries. So in this view, quality and quantity differences of services which is provided by financial institutions could explain an important part of the difference in economic growth.

Anyway different doctrines have not been ignored the role of financial markets in economic development. Banks have an unavoidably, complex and important role in the global financial markets. The evaluation of the financial sector of Iran's economy reflects the importance of the banking industry which any instability of that has destructive consequences on the economic body. Bank stability is important for four reasons. First, a stable banking system provides a suitable environment for attracting deposits, second, it helps the transmission of monetary policy, and third, the stable banking system is created efficient financial intermediaries, and enables them to act successfully in allotment of resources in order to investments, So it can improve economic and investment growth. Fourth, stable banking system increases the performance of the banking system and improve the distribution of resources in the economy. Bank stability should be considered from different perspectives in banking systems.

Bank stability can explain structures of bank resources and secureness financial asset.

According to health literature and bank stability, based fund can help banks to compensate for financial losses and funds as a reduction factor in transition of thorn and also reduction of some risks which lead to increasing bank loans. In other hand, increasing of resources casts leads to lower profitability of banks, therewith banks funds become decreasing, so in this condition the banks should consider the profitable opportunity in order to achieving higher interest rate.

Amplification of interest rates in the banks can prevent decreasing of the banks funds in the future. (Van den Heuvel, 2012).

According to available evidence in Iran's economy and other countries' experiences, the financial stability has a significant important in banking system, this is very sensitive in Iran's economy because its economy is so week in the investment sector and also it's not consider as a successor of bank sector in recurrence financial. As well as increased economic sanctions and the reluctance of the international organization to solve problems such as the provision of facilities, create an incentive for this study in order to establishing the process and effective factors on Iran's largest economic sector. In fact, the issue is whether the banking system's financial stability have financial stability and which factors can improve it.

REVIEW OF LITERATURE

Financial stability

Financial stability refers to a condition in which financial system without any problem and deficiency be able to perform both in its duty in the allocation of economic resources and risk management and also effective function of payment systems in other word has enough flexibility in order to deal with both domestic and external shock. One of the main indicators to evaluate the financial stability is the non-current demand. Accurate and fast flow of resources and banks usage reflect the safety systems of banks and effectiveness of their performance in order to provide and outfitting resources, resources consumption, and how to their return have significant importance. Grant resources as input of banking

system and payable facilities have been considered as output of banking system. Of course, any damage in any of those areas will be lead to problems in the process of system. Facilities recovery at the determinate time, determines the correct procedure, using of resources in order to establishing facilities, develop economic activities as well as direct resources into right areas of investment. One of the fundamental problems which banks faced with is non-current demands or their unrecovered facilities. The non-current demands whether make involved resources unused in credit sector or took the opportunity of other customers in order to use banks resources, therefore it leads to reduction of banks profitability, among these factors we can refer to stagnation in the real economy. Dominant stagnation on economy's sectors cause inability of facilities repayment in contrast it can increase non-current demands. In fact, non-current demands lead to block an important sector bank resources which could be used in manufacturing sector, as a result the manufacturing sector will faced with more recession. Other factors affecting non-current demands international sanctions have had a negative effect on the manufacturing sector. As a result, the manufacturing sector dropped to repay the loans, continuity of this process in future periods will exacerbate the non-current demands.

COMPETITION

Today, the relationship between competition and financial stability is one of the issues that in the past two decades and especially since the global financial crisis in 2007 has been of interest to researchers. Although competition has a positive effect on efficiency, quality and innovation in many sectors of the economy, competition between banks is always one of the controversial issues. There are two opposite views on competition and financial stability, competition-fragility suggests that the relationship between competition and financial stability is negative, because increased competition between banks will reduce profit margins and market power. So the banks are forced to accept more risk to their activities, but the competition-stability theory, competition leads to increased financial stability. Since whatever the competition between banks will be increase as well as the interest rate become decreasing, therefore adverse selection and moral hazard among lenders becoming reduced consequently the dishonor of loans decreases, which lead to an increase in the banks' stability. Recent studies show that the relationship between competition in the banking system and financial stability is as a U-shape.

The relationship between stability and competition particularly in the financial sector both in theory have been studied in various experimental research. It has been noticed that there is no significant consensus on whether competition in banking system leads to more or less stability.

On the one hand, competition may be due to rising costs of unstable banks and exit them from markets which lead to more banking stability. On the other hand, banks may have to compete in order to earn high profits to stimulate activities with higher risk, and thus increasing competition led to the financial crisis and financial instability.

HISTORY RESEARCH

Agorayk and his colleagues (2011) examined the relationship between regulation, competition and risk-taking in the Eastern European banks. Their results show that market power has a negative relationship with the bank risk-taking behavior. Liu et al (2012) had examined the relationship between competition and risk-taking in five countries of South Asia. Their results show that competition does not lead to

reduction in the stability of banks. Pak and Nvmakhnva (2013) are discussed the effect of market power on credit risk in Kazakhstan. Their study shows that the increasing in market power resulting in a positive effect on financial stability. Their study shows that the increase in market power resulting in a positive effect on financial stability, Pino &Arya (2013) have examined the un-uniform effect of market power on the relationship between competition and financial stability in Shilay banks.

Jimz et al (2013) studied the relationship between competition and industry banking in Spain, their result indicate that there is a nonlinear relationship between them.

Feo et al (2014) studied the relationship between competition and financial stability using the data which collected from 14 countries, their results show that that the higher concentration increases the banks' financial fragility and low pricing power of the banks leads to reduction of bankrupt in banking system. Kasmn & Kasman (2015) have studied the relationship between concentrations, competition and financial stability in the banking industry of Turkey since 2002-2012, their results show that competition has a positive relationship with Z-score criteria. And also the effect of concentration on Z-Score criteria is a negative scale and, the results from nonlinear model estimation show that square of compatible index has a positive effect on Z-Score criteria, therefore overall evidence suggests that competition and instability hypothesis is confirmable. Shaygani & Aran (1390) using data from Iranian's banking system since 1380-1387 could study the stability into banking sector of Iranian economy.

The results indicate that all Iranian banks in the mentioned periods had a low degree of the financial stability, and also growth of impure production leads to increasing financial stability. Degradation of national many values; in other hand; leads to reduction of financial stability.

Increasing the proportion of loans in relation to banks assets, had a major impact on banks' financial stability as well as in private banks the impact is much significant, it means that the private banks are more effected with management factors than public banks. The management features include the determination of financial ratios within the banking system. Pustinchi (1392) in one study using data from 18 banks since1384-1390 and panel data shows that there is an inverse relationship between competition in bank industry and postponed demands. The ratio of loans to assets, the ratio of profit to asset, and the ratio of total assets and economic freedom have a significant, effect directly on those demand.

Darestani (1393) had studied the effective factors on stability in banking system, he also used Z-score index for determining the data which collected since 1384-1392 (for 8 years). The results show that bank lending cause a meaningful reduction in financial stability of banking system.

Moreover, whatever investment efficiency and profitably have been increased, the ratio of banking stability increased as well, in other words the banks have more power in risky conditions.

RESEARCH METHODOLOGY

The main objective of this study was to investigate the effect of competition on risk and stability in banking industry of Iran, for this reason, to test the hypothesis, the researcher used 1-3 equation. (Kasman & Kasman 2015)

$$\text{risk}_{it} = \alpha + \beta \text{risk}_{it-1} + \gamma \text{com}_{it} + \varnothing dp_t + \theta_1 \text{size}_{it} + \theta_2 LR_{it} + \theta_3 \text{pri} + \theta_4 \text{infl} + \varepsilon_{it} \quad\quad (1\text{-}3)$$

In equation (1) i.represents the designated bank, and t. represents time. The dependent variable in this study (risk) which shows the markets' risk has been calculated by Z-score index. Â coefficient shows the convergence of long-term risk of banks. Measurement criteria of competition (com) is calculated between banks by Loner index. As regard to business cycles in the economy has a synchronization process with lending process, moreover in Iran there are some significant impacts on the banks' risks, therefore growth rate of impure production (gdp) has been used as a variable, which represent the business cycle. As respect that the banks are heterogeneous, therefore the researcher has used some variables such as banks' size, composition of asset (LR) in order to determine the specific effects of banks. Banks' sizes are equal to the logarithm of total assets and the composition of assets (LR) which is the ratio of total loans to total assets. INFLis the ratio of inflation on the basis of 1383 that is calculated from the variable index. Regard to Bergar et al (2009) and Jimenez et al (2013) studies there is a nonlinear relationship between competition and financial stability. It has been used not only model (1) but also model (2)

$$risk_{it} = \alpha + \beta risk_{it-1} + \gamma_1 com_{it} + \gamma_2 com_{it}^2 + \varnothing gdp_t + \theta_1 size_{it} + \theta_2 LR_{it} + \theta_3 pri + \theta_4 infl + \varepsilon_{it} \quad (2)$$

In this type of relationship between research variables, the study of Y-2 Y-1 has a significant important, as an example positive ratio of each parameters shows that increasing market power or increasing of Loner index leads to increasing banks' risks. In the case of negative ratio of parameters , the increasing in markets power lead to banks' risk reduction, but if the Y-1 is negative and Y-2 is positive, the U-shape model will show the relationship between competition and risk ratio, in other words with increasing market power, gradually the amount of risks become lower after a while the amount of the risk again start increseaning. To estimate the relationships (1) and (2) the GMM method has been used, because this method considers the inbreeding between variables, and also heterogeneity of variance to the 2SLS method which has more efficiency. Hal (2005) due to the variable interval which is depend on the right side of the equation as on explanatory variable, could create some complications to estimation, since the error is related to Arnold & Bond method(1991), in other words they suggested GMM method in order to overcoming the problems.

Calculation of indicators of competitiveness and financial stability

Loner's index has been used to measure competitiveness, this index also measure the difference between the prices of the final cost, it is in form of the connexion of 3-3 so that whatever the amount of competiveness became increase, the Loner index tend to zero, in other word Loner index is zero but in some special condition it becomes one.

$$lerner_{it} = \frac{p_{it} - mc_{it}}{p_{it}} \quad (3)$$

In equation (3), p represent price that is equal to the ratio of total income (interest and non-profit incomes) to total assets, but MC represents the marginal cost of bank (I in t time).

Kooter et al (2012) stated that equation (3-3) assume implicitly which there are profit and cost efficiency and also pricing opportunities arising from market power may not be scheduled therefore loner index adjustment has been used.

$$\text{Adjusted Lerner} = \frac{\pi_{it} + C_{it} - mc_{it.} q_{it}}{\pi_{it} + c_{it}} \quad (4)$$

It bank profit (i) at time C-it is the total cost of bank (i) at time (t). q is the output which is equals to the total assets of bank. Adjusted index values is also between 1 and zero. One of the main studies in recent years is the measurement of final costs, but in this study we are used Transloog function in order to measure the final cost which we is derived from banks assets. Therefore we are used marginal random model to estimate the function of Transloog cost with respect to total output (total asset) and three input (labor, physical capital and financial resources). The cost of bank (i) at time (t) in equation 5 has been determine.

$$lnC_{st} = \alpha_0 + \beta_1 lnQ_{st} + \sum_{j=1}^{3} \beta_j lnW_{jst} + 1/2 \left[\alpha_{QQ} \left(lnQ_{st} \right)^2 + \sum_{j=1}^{3} \sum_{m=1}^{3} \beta_{jm} lnW_{jst} lnW_{mst} \right]$$

$$+ \sum_{1}^{3} \beta_{Qj} \ln Q_{st} \ln W_{jst} + v_{st} + u_{st} \tag{5}$$

The price of labor power has been calculated by dividing the cost into number of workers. The price of physical capital has been measure by dividing pure cost operation of personal cost on fixed assets, and the price of financing is calculated by dividing total interest expenses to total borrowed resources. The final cost is used derivative of equation (5) toproduction.

$$MC_{st} = \frac{\partial LnC_{st}}{LnQ_{st}} = \frac{C_{st}}{Q_{st}} \left[\beta_1 + \alpha_{QQ} lnQ_{st} + \sum_{j=1}^{2} \beta_{Qj} lnW_{jst} \right] \tag{6}$$

Competition index Boon

Boon in 2008 has proposed a new model to measure the degree of competitiveness. In fact, this proposal is that banks with higher performance should earn a greater share of the market, and earn profit of bank due to lack of performance, in other word competition leads to reinforcement the efficient banks but weaken of inefficient banks. Boon index can be estimated by experimental model (7).

$$Ln\left(ms_{st}\right) = \alpha + \sum_{t=1,\dots,(t-1)} \beta_t D_t \times Ln\left(mc_{st}\right) + \sum_{t=1,2,\dots,(t-1)} \theta_t D_t + \in_{st} \tag{7}$$

In equation (7), Ms, and, mc respectively represent the bank's portion of market and the final cost of them. D variable is related to time and reflects the factors which is effected on banks during the time, but being positive of Boon index indicates that banks with higher final cost has been gained a high portion of markets.

The financial stability index

The first indicator is the ratio of non-performing loans and doubtful to total loans and it has been showed as NPL, In fact it shows that for a specified amount of the facility how much the loan is not repaid, and the second index to calculate the bank stability is Z-score criteria. This in fact measure the standard deviation, which is different with bankruptcy and financial distress. This criteria can be measure as equation (8).

$$z_{it} = \frac{RoA_{it} + (E/TA)_{it}}{\sigma_{(ROA)_{it}}} \tag{8}$$

In equation (8), ROA measuresthe return assets, E\TA measures the amount of owners' profit to total assets. $\sigma_{(ROA)_{it}}$ is the standard deviation of return assets which is calculated with 3 years cycle. Whatever the criteria is higher ,the probability of bankruptcy will be increase, in fact the high criteria shows banks' credit, this measure is calculated for all banks every year.

DATA COLLECTION AND ANALYSIS

As for the present study which studies the relationship between competition and financial stability in banking industry, therefore using bank-level data is essential.

In thisstudy the researcher has used the data collected from 18 public and private banks in a period, (since 1385-1395).

Diagram (1) shows the Z-score variable in the period of the study, but because of lack of access to data of the year 1383 and also estimation of standard deviation periodically, the diagram (1) has calculated the mean of index of the year 1383. Whatever this criteria become higher, it means that the probability of bankruptcy will be increase in other word financial stability will be increase,(its low means the unfit situation of the banks)
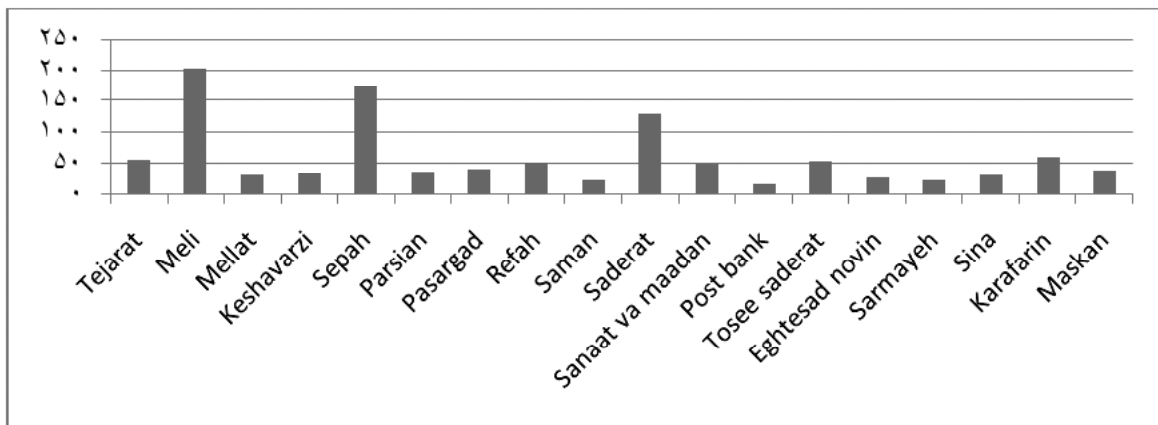

Figure 1: Scoring Z for the years 1386 to 1393

Source: Findings

Evidence suggests that Melli, Saderat, and Sepah banks has the highest Z-score, in fact one of the main reasons for the high benchmark for these banks is stability of return assets over three-years periods, which is the standard deviation tendency is toward zero, while the Post bank has the lowest standard, because in 1385 had negative profit and in the year 1389 had 204 billion Riyals of net profit, Saman and Sarmayeh banks also has Z-score of 25. Compering of return assets criteria represent that Melli bank had the lowest return during the period of study. Pasargad and Karafarin Banks have the highest return assets, estimating of Z-score criteria for all banking systems has been showed in table (3-1). The value

of this benchmark in 1386 was78/88, means that it has risen to its highest value. In the year 1393, amount of the criteria was 51/33, in other words stability of banks' index become increase, but the study of the Z-score index shows that profit of the banks or assets return has reduced during the period of the study, the asset return in the year of 1385 was about 1/74 and in the year of 1393 in a reduction process became 0/9 and also the owners' assets decreased from 13/0 to 08/0 in 1393. The question that is raised in this survey is whether changes to banking stability in the banking system be explained by competition standards?

Table 1
Changes Index Z-Score and the
Non-Current Receivables (NPL)

1393	1392	1391	1390	1389	1388	1387	1386	1385	Year
51/33	88/86	76/86	54/63	37/86	72/68	54	35/78	–	z-score
15/65	15/75	17/36	18/3	16/26	17/72	16/56	13	11/72	npl

Source: Findings

Chart (2) shows Non-Current Receivables for the period from 1385 to 1393 relative changes between different banks. Chart (2) Chart 2 shows that banks, Parsian, Saman and sarmayeh have the highest percentage of Non-Current Receivables ,This means that for any given percentage of the total facility, a very large percentage of them are Non-Current and therefore useful for banks. In fact, this indicates an alarm in the banking system and the inadequacy of existing procedures for repayment is received by the customer. Despite high non-performing loans have a negative impact on bank profitability, and the ability of banks to provide facilities and attracting customers is reduced and eventually led to bank failures, according to the Bank together, creating a problem for a bank to other banks will be transferred, in result the banking network will be in trouble. The low ratio of Non-Current demands for Mskan Banks and Pasargadae represents high performance to provide facilities to entrepreneurs and economic sectors with high
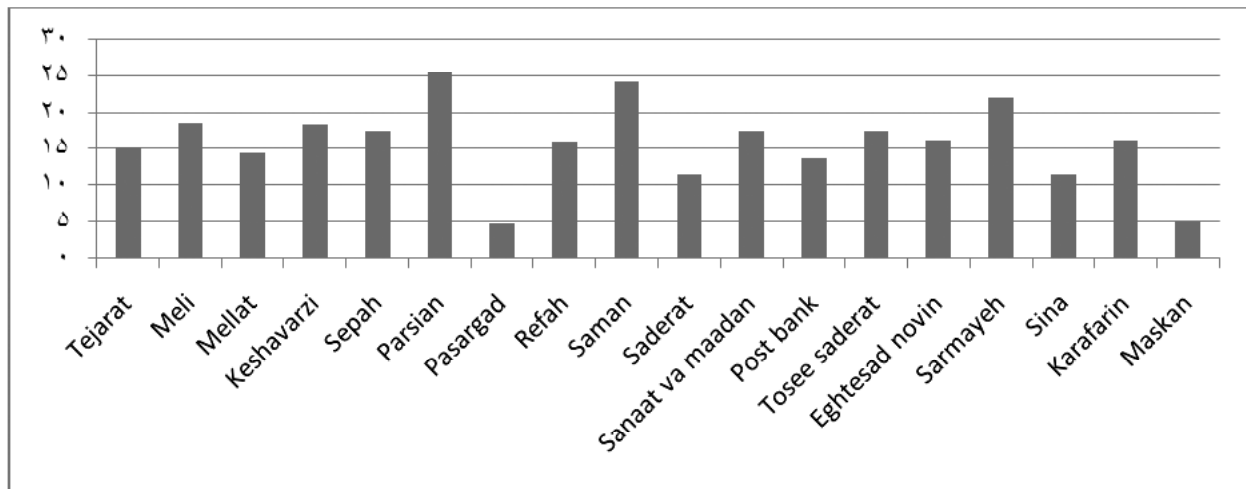
Figure 2: Shows the diffrences of non-current demands ratio for a period of time.
The year 1385 to 1393 among different banks.

Source: Findings

productivity. And probably because the banks have better collateral and thus has the lowest demands are Non-Current.

But there is one important reason for the low non-performing loans for housing banks, high efficiency is the housing market than other markets. According to the census center of Iran efficiency equal to 30% of housing in the economy in 1391 and in 1393 was equal to 25%. Table 1 shows that on average equal to 81/15 percent of the banks surveyed% of Non-Current facilities. The figure for the Turkish economy is equal to 1.7 percent, compared with Non-Current loans to total loans has been increased from 1385 to 1388 and for the period 1390 to 1393 has been decreasing. But because the facility has been increased during the study period, Bank increased the volume of arrears is absolutely crucial for the banking system which compering the results of the Iranian economy and the Turkish economy shows that the volume of bank loans has been very high for Iran. This is important when the rate of production facilities increased. And this actually shows weakness that banks offer the facility cannot detect low-risk borrowers.

Boone competitive index

The index of β coefficients in equation (6) is obtained for different years and on an annual basis interpretation is that if β is negative, then the banks have lower final cost to acquire a larger share of the market, so competition will reduce the market share of banks with higher marginal costs The higher the level of competition in the market will be higher negative factor, evidence for Iran in Table 2 indicate that the final cost higher with shares less deposit banks on the market.

So a very small share of deposits banks must reduce the marginal cost in order to increase performance, the entry of private banks into the banking system in recent years has failed to increase competition in the banking system. On the basis of Boone, during the period 1385 to 1393 the amount of competition in the banking industry on a regular basis has decreased and this reflects the dynamics of the banking industry. Overall evidence suggests that the economy is not transparent in the field of banking and have no suitable performance, and this is one of the main obstacles to economic growth.

Lerner index and modified Lerner

Lerner index is defined as based on the ability of banks to create the gap between price, and marginal cost and the banking market has increased the amount of increased power and reduced competition in the market. The evidence in Table 2 show that for the economy in the period 1385 to 1393 is actually one of the reasons Lerner index declined in recent years has been the entry of private banks.

Index modified Lerner index is also similar trend, but the number is less than conventional Lerner.Given that the index has been positive so constantly the amount of prices are more than final cost, therefore it represents the kind of market power in the country's banking network. In general, according to Lerner Index in 1385, the gap between marginal cost and price equivalent to 51% of the price which represents low competition in the banking system.

Although the index has volatile, there is lower in the early years of competition in the banking system, However, in the final years of competition in the banking system has increased. Lerner index and modified index respectively 51 and 50 percent in 1385 decreased to 46 percent in 1393.

Table 2
Indicators of banking system competition

Modified Lerner	Lerner	Boon β	
0/5057	0/516	-58/8	1385
0/489	0/507	-56/6	1386
0/506	0/516	-22/13	1387
0/48	0/49	-5/7	1388
0/493	0/506	-3/5	1389
0/492	0/505	-3/02	1390
0/48	0/492	-2/54	1391
0/48	0/487	-0/546	1392
0/468	0/463	-0/038	1393

Source: computing research

ESTIMATE MODEL

Table 3 shows the results of the model, the Lerner index has a significant negative effect on the ratio of Non-Current Receivables (NPL). That is, whatever the Lerner index increases, the Non-Current Receivables decreased. It should be noted that Lerner index means high power of banking markets which whatever the power of the banks increase, the amount of non-current receivable significantly reduced, thus, competition leads to an increase in Non-Current Receivables banking, it represent a conformation of competition-friability hypothesis that is expressed as whatever the competition increases the stability of the banking system decreased. GDP has a positive effect on Non-Current Receivables. So that one percent increase in GDP increases of as much as 27 percent of the Non-Current Receivables, One important reason for this phenomenon in the economy is not strong link between the financial sector and the real economy. The banking system has the opposite process cycle, that not leads to reduction of non-current receivable. Inflation has a positive effect on the Non-Current Receivables.

In this case, the mismatch between funds received (deposits) and payments (credit) have caused banks at risk of bankruptcy,in fact for every one percent increase in inflation of non-current demands, about /0055, but the Z-score index has no significant effect on financial stability,private banks due to lower profitability goals don't exposed to bankruptcy.

Why Non-Current Receivables coefficient is negative and significant, indicating that private banks have more financial stability? Overall for the equation Lerner index as an indicator of competitiveness, competitiveness doesn't leads to a reduction in Non-Current Receivables.

In this case, the rise in the index means less competitiveness is therefore leads to increased competitiveness of the Non-Current Receivables. The third column shows the estimates of factors affecting Z-Score, Lerner index will increase Z-Score, So whatever amount of reduced competition in the banking industry the health of the banking system increases.

The Bank healthy has the opposite trend with economic growth. The fourth column of estimation has studied the effectiveness of Boon index, the column shows that when the index increases, the health

and financial stability increases, and therefore there is a negative relationship between competiveness and healthy system of the bank. Ratio of loans to total assets of studied banks represent that increasing of facilities has a negative effect on bank healthy, In fact, the diversity of banks' portfolios have significant effects on banks ' healthy when variation increases, the health amount was increased as well.

The evidence to the fourth column shows that an increase of one percent of the facility to the total assets leads to reduce the size of the bank's financial stability approximately 97/0.

Table 3
Estamition of Linear Model

Z-Score	Z-Score	Portion of non-current demands	Portion of non-current demands	
		0.218***	0.345***	Portion of non-current demands
		(2.771)	13040	
	281.9***		-1.700***	Lerner
	(4.286)		(-4.166)	
-5,928***	-5,390***	2.493	27.33***	Economic growth
(-12.29)	(-15.78)	(0.384)	(4.367)	
-36.14*	8.540	-0.327***	-0.348***	Assets
(-1.783)	(1.006)	(-2.673)	(-7.684)	
-0.0076	-0.0026	0.0007**	0.0055***	Inflation
(-0.31)	(0.67)	(2.45)	(3.49)	
0.0553	0.0395	-0.16**	-0.0259***	Private
(1.40)	(0.126)	(-2.43)	(-8.05)	
-94.06**	-28.01	-0.410	-0.656	Facilities on property
(-2.076)	(-0.504)	(-0.884)	(-1.351)	
1.307***		-.00846***		Boon index
(2.641)		(-3.799)		
-	-			ZScore(-1)
0.0872***	0.0818***			
(-48.24)	(-21.74)			
16,459***	1569.6***	-2.079	-65.85***	Intercept
(10.50)	6.68	(-0.109)	(-4.043)	
13.51	12.36	14.23	11.5	Sargan statistics
0.85	0.903	0.978	0.996	The possibility

Sargan test to avoid over setting shows that the null hypothesis is confirmed for all equations and, therefore, instrumental variables were used for this study are valid. The statistic value for all the columns respectively first, second, third and fourth respectively 5/11, 23/14, 36/12 and 51/13, which all confirmed the null hypothesis. For studying of non-linear relationship between banking competition and financial stability, we have used the squares of competition. But this effect is not significant for the Lerner Index,

but the coefficients is significant for the Boone's variables. The estimated coefficients indicate that increased levels of competition increase the bank's declining health over-current receivables.

But whatever the amount of competition reduce in the banking industry, the Bank health increased and the demands of Non-Current ratio decreases, these effects are not established forever. Since the coefficient square variables have opposite signs with variable levels so you cannot expect by reducing the competitiveness, the banking Non-Current Receivables reduce, consequently the bank healthy increase as well. In fact, an optimal level for a number of banks and the level of competition that exists between them must be determined, which should be considered in future studies. The results of the model also indicates that the current level of competition between the banking systems is not optimal.

Table 4
Estimation of Nonlinear Model

Z-Score	Z-Score	Of Non-Current demands	Of Non-Current demands	
		0.663***	0.437	Of Non-Current demands
		(4.056)	(1.355)	
	-124.6		0.956	Lerner to be 2
	(-0.0706)		(0.585)	
	393.8		-0.748	Lerner
	(0.229)		(-0.456)	
-4,188***	-5,123***	0.996	1.417**	Economic growth
(-6.966)	(-4.868)	(0.807)	(1.984)	
-8.070	10.39	-0.00284	-0.0404*	Assets
(-0.534)	(0.861)	(-0.187)	(-1.948)	
-0.0012***	-0.0011	0.0066***	0.0537*	Inflation
(-7.68)	(-0.18)	(2.87)	(1.71)	
0.0537*	0.0581*	-0.2212	-0.2029**	Privacy
(1.71)	(1.68)	(-0.72)	(-1.99)	
-81.52*	-36.89	-0.0775	-0.0583	Facilities on property
(-1.763)	(-0.618)	(-1.243)	(-1.419)	
11.28***		-0.00258**		Boon index
(3.674)		(-2.002)		
-0.462***		4.65e-05**		Boone index to be 2
(-4.142)		(2.558)		
-0.0727***	-0.0824***			Z-Score(-1)
(-23.07)	(-17.17)			
11,688***	-0.846	-2.509	-3.102*	Intercept
(6.846)	(-0.721)	(-0.779)	(-1.829)	
13.08	11.31	14.12	14.17	Sargan statistic
0.873	0.93	0.98	0.97	The possibility

One of the main problems for the high banking system is facilities granted to total assets ratio. The higher the ratio, the possibility of reduced financial stability, and the results of the Sargan test show that the null hypothesis has been confirmed in all cases and therefore instrumental variables which are used in the estimate were valid.

CONCLUSION

The present study, using data from the banking system of 18 public and private banks for the years of 1385 to 1393 and GMM examines the relationship between financial stability and competitiveness. Evidence suggest that based on Lerner index, the competition increase, but based on Boon index the competition decrease. Based on Amir (2000) studies and Kampler (1999) in many cases there were increase competition rather than reduce the gap between costs and prices, therefore Lerner index on competitiveness recognition has less efficiency than Boon index.

Estimations represent that whatever the competition increases in industry the financial stability decrease as well. Due to the results of the study, competition reduction leads to financial stability enhancement, but this process is not continuous, in fact it's important to determine the optimal number of banks, in other word by decreasing competition, the stability increases, but is has a reduction process which needs to determine the optimal banks.

REFERENCES

Afshari, Zahra. Yazdanpanah, A. and Mary with God (1388), the impact of explicit deposit insurance system on the occurrence of banking crises (in developing countries), Journal of Monetary Economics, No. 1, pp. 55-25.

Shaygany, Beata and Mus'abAbdullahiArani (1390), examining the stability of the banking sector of the Iranian economy, the Journal of Economic Essays, No. 16, pp. 167-147.

Darestani, HossamZalbgy (1393), factors affecting the stability of the banking system, financial-banking Research Quarterly, No. 20, pp. 327-307.

Optical Boroujerdi treaty. Jalili, Mohammad and Fatima Men (1389), The effect on the profitability of state banks in the banking industry concentration and other factors, Journal of Monetary Economics, No. 5, 202-175.

Poustinchi, M. (1392), the impact of competition on bad loans in the banking industry, Economic Journal, n. 7 and 8, pp. 18-5.

Agoraki, M., Delis, M.D., Pasiouras, F., (2011), Regulations, competition and bank risk taking in transition countries. J. Finan. Stab. 7, 38–48.

Allen, F., Gale, D., (2000), Comparing Financial Systems. MIT Press, Cambridge, MA.

Berger, A., Klapper, L., Turk-Ariss, R., (2009), Bank competition and financial stability. J. Finan. Services Res. 21, 849–870.

Fu, X.M., Lin, Y.R., Molyneux, P., (2014), Bank competition and financial stability in Asia Pacific. J. Banking Finance 38, 64–77.

Jimenez, G. Lopez, J and Saurina, J (2007), How Does competition impact bank risk taking? Federal Reserve bank of san Francisco working paper 1-23.

Jimenez, G., Lopez, J.A., Surina, J., (2013), How does competition affect bank risk-taking? J. Finan. Stab. 9, 185–195.

Kasman,S., Kasman, A (2015), Bank competition,concentrationandfinancial stability intheTurkishbankingindustry. Economic Systems, 1-16.

Koetter, M., Kolari, W.J., Spierdijk, L., (2012), Enjoying the quiet life under deregulation? Evidence from adjusted Lerner indices for U.S. banks. Rev. Econ. Stat. 94, 462–480.

Leuvensteijn, M.V (2008), The Boone-indicator: Identifying different regimes of competition for the American Sugar Refining Company 1890-1914.

Liu, H., Molyneux, P., Wilson, J.O.S., (2013), Competition and stability in European banking: a regional analysis. Manchester Sch. 81, 176–201.

Pak, O., Nurmakhanova, M., (2013), The effect of market power on bank credit risk-taking and bank stability in Kazakhstan. Transition Finance Banking Res. 20, 335–350.

Pino, G., Araya, I., (2013), Impact of the heterogeneity in market power on the relationship between risk taking and competition: case of the Chilean banking sector. Emerg. Markets Finance Trade 49, 98–112.

Van den Heuvel, S. J. (2008), The welfare cost of bank capital requirements. Journal of Monetary Economics, 55(2), 298-320.