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The role of past maturing debts on private selected banks profitability abstract.

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Abstract

These days, banks as most important of market element have important role in country economy. To development of financial market, increase financial institutions and the banks activities and, the economic development is not possible without considering the money markets and the role of banking. The banks are the main providers of financial resources of economy sectors (industry, agriculture and services) and in addition to its main function, the bank's primary motivation for the mobilization and allocation of resources and give various service to customers. is revenue and gaining interest as other financial institutions.

Due to the special role of banks in the economic system of the country, any shock, disruption or inefficiency in the economic system affect directly the financial institutions and banks activities and events such as banking debts of past maturity and some economic variables such as inflation will be effective directly and indirectly on operating cost and money and finally profitability of banks, moreover to financial dependence of productive sectors on this important economic institution, any inefficiency and the crisis in the banking system can face the various sectors of economy to many problems.

This paper examined the past maturity banking debts on bank profitability of Iran private bank. According to the result of model estimation, the impact of inflation rates, interest rates on bank deposits and past maturity debts on banks profitability is negative and significant. Also the impact of inflation rate on private banks profitability in the %95 confidence level isn't significant and finally the impact of interest rate of bank deposits on banks profitability has negative impact and significant.

Key words:

Profitability – Islamic contracts- non performing loans- inflation- interest rates of facilities.

1. Introduction

These days, banks as most important of market element have important role in country economy. To development of financial market, increase financial institutions and the banks activities and, the economic development is not possible without considering the money markets and the role of banking. The banks are the main providers of financial resources of economy sectors (industry, agriculture and services) and in addition to its main function, the bank's primary motivation for the mobilization and allocation of resources and give various service to customers is revenue and gaining interest as other financial institutions. Due to the special role of banks in the economic system of the country, any shock, disruption or inefficiency in the economic system affect directly the financial institutions and banks activities and events such as banking debts of past maturity and some economic variables such as inflation will be effective directly and indirectly on operating cost and money and finally profitability of banks, moreover to financial dependence of productive sectors on this important economic institution, any inefficiency and the crisis in the banking system can face the various sectors of economy to many problems.

The banks earn money by providing banking services to customers. That is issues done by getting (attracting) people deposits with low interest rates and granting facilities with higher interest rates that the banks income is difference two rates wich it calls interest marginal profit. If the bank can use a bank profitability influence controllable internal factors of the bank management and economic conditions and factors in the country and environmental factors that affect it. Therefore to avoid any deviation factors affecting to profitability and divided two main groups: internal and external determinants.

External factors are controllable of bank management and they are basically the reflect of the difference in the policies of the bank management and decision – making in regard to resources and the use of debts and assets portfolio, capital adequacy and liquidity management and costs. The high management motivation is effective in doing optimal of things in banks profitability which can be examined by balance sheet and profit and loss accounts.

On the other hand external factors are beyond the bank’s management that they divided two factors: the debts of past maturity which dependence on the characteristics of banks and inflation and the rates of deposits interest that depends on economic conditions in the country that this research examined these factors (external factors in the form of bank’s past maturity debts and macro-economic factors). So due to mentioned, this research examined the debts of bank past maturity (and some variables of macro-economic) on profitability of private selection bans.

2. Theoretical

Factors affecting the profitability of banks are divided in two categories internal and external factors.

- Internal factors

Internal factors controlled by bank management include:

- Capital

Capital in economy is claim or interest of institution owners against the assets of that institution. This value is obtained subtracting the liabilities from the total assets (Nobari,1390).

- Liquidity management

Liquidity management means the ability of bank to perform its financial obligation during the time. Liquidity management is one of the biggest challenges facing the banking system. The main reason for this challenge is that many bank sources are determined of banks short-term deposits. In addition to the facilities granted by banks use to invest in assets that is relatively low degree of liquidity. The banks gold in liquidity management should be to achieve the strategy that the maximum profit be possible with the least risk (Ahmadpour.1387).

- Expenses management

Expenses management is set of actions that manager do to ensure customer satisfaction with continuous management is activities of business establishment this emphasis is to achieve target of production and services with quality and minimum cost that this very important (Rezaeian et al,1388).

- Credit list management

The risk is potential loss which is directly obtained of capital and income lesses or indirectly from restrictions that reduce the bank ability for acheine the goals of its commercial and financial. Risk management is one of the important element of bank the affect the set of risks.

- The composition of liabilities (deposits)

One of the most important factors to maintain organizations such as banks is attracting more financial resources and different deposits and the optimal use of this sources in social services, commercial, industry and infrastructural that both the banks and the customers has benefited and the country economy cycle will work better (Rostami,1390).

– The combination of assets (granting facilities)

Granting credit facilities the main field of bank activity and the main sources of income for banks.

Staff: the senior managers of successful service organization have found that in modern services sector pay attention to factors that resulted profitability in the modern-days. These factors are including investment in people and the technology of staff support, reform and modernize recruitment and training activities to relate salary and benefits with performance of employees at all levels.(Janson, 1995,pp60). One of the effective internal factors on bank profitability is increasing knowledge of bank staff by holding educational courses. In fact educational is one of the most important planning activities of any organizations and increasing insight, knowledge, ability and skills of employed people in organization to execute tasks which have been assigned ; and those achieve the goal of organization with more and better efficiency and effectiveness.(Awni,1387)

External factors:

External factors are beyond the control of bank management that include:

- **Inflation**: Inflation is as one of the most important economic problems during the economic life of the country. The changes is caused due to inflation in raw material prices, endanger the firm's profitability and considering that the many manufactures and suppliers using the facilities of bank to expand their own business, this issue can cause nonperforming loans on the granting facilities banks(Rostami,1390). If the predicted inflation and interest and interest rates are set according to it, as a result, the bank income increase faster that the increase in cost and this has positive effect on profitability of banks. But if inflation is not predicted so it is possible that bank's costs increase faster than their income and therefor have an adverse effect on profitability (Bagheri,1385).

- Central bank policies expansionary and contractionary monetary policy could also have a potential impact of bank profitability. For example, an interest rate is one of the monetary instrument that play an important role in economic activity. So that the like of transmission of monetary policy in considered to the real economy (Azojy and Farhadikia, 1386). The most important effect that increase deposits interest rate on banks resources is the change of composition of banks deposits. Increasing deposits interest rates cause that the people invest their funds in the bank by long – term deposits instead of keep their in current or short-term account. This issue lead to increase long-term deposits of banks and increase banking income. First, increasing long-term deposits lead to increase banking sources duration. The variable of duration is the time average needed to repay bank debts. In these circumstance simply the bank deposits durability increase. This issue enable banks to give longer-time facilities to their customers and thereby receive more returns. And, the ratio of law deposits that the banks must hold the central bank is lower for long-term deposits. So increasing long-term deposits cause that the banks received any deposits to hold a lower share in the central banks that this cause to increase facilities of banks (other than what preserve in the central bank); and the result of this process will lead to increase the profitability of banks also the effect of facility interest rate on bank's profits is through two cannels of revenue. First, the growth in facilities interest rate causes of bank's income which acquires from new assets increase. Second, the effect of interest rate depends on the loans and securities which hold by banks. In fact in the event of rising interest rates, interest rate of loans are increased of the securities rate and therefor creates strong incentives for banks that instead of buying the securities, grant more loans (Noori Broujerdi, Jalili and Mardani, 1389).
- **Gross Domestic Product (GDP)** : Gross Domestic Product is the total value of production of goods and services in a country at market prices during certain time period (usually one year). In the other hand, Gross Domestic Product is the total of added value in the all strong of production of all goods and services produced in a country during a particular time period. Usually the capitation income are used as a criterion to determine the level of living in a country. Capitation income is equal to the sum of Gross Domestic

Product divided by the number of people in each country. Usually when GPD is higher than the expected are expected to increase profits (Athanasoglou,2008).

- **Business cycle**: In during economic downturn, the bank reduce lending because these periods are with increasing risk so decrease gross profit. But in period of economic prosperity the demand for granting facilities is strengthened and gross profit increase. Thus, the revenue can increase faster than costs that lead to increase profit, while it may be opposite of during the economic downturn.
- **Liquidity**: The liquidity is the type of assets that depends on time and the cost of their conversion into money, on the other hand the cost of an assets swap to the currency is criterion for assessment it. The experts believe that liquidity must be equal with the goods and services. Increasing of them lead to shortage of the goods and services, thus increase inflation in the society. Also the items change of the monetary base affects on quantity of money. The sources of the monetary base includes the net foreign asset of central bank, net government debt to central bank, the banks debts to central bank and net other assets and liabilities. The changes of above items changes the sources that are in the banks and so affect profitability (karimkhani and farati, 1391).
- **Market share of the total banking network**: The market share can be as competition criterion among the banks. The market share represents the bank's share of the monetary market of economic (Rostami, 1390). This share of monetary market and capacity to attract more financial resources and the share of revenues and serviced that are provided are in the banking industry. So the change in market share can be effective in the potential profits of bank.

The past over due debts and profitability

the absence of timely repayment of facilities threatens the bank profitability is several aspects:

- A projected revenues are not achieved and the bank is faced with the income problems.
- The bank's liquidity management is faced with disorder and in the conditions the bank may be forced to financing with high rates or cause to negative the

bank current account with the central bank and the bank will be forced to pay fines and the profitability of banks will be affected.

- According to the standards of banking accounting, the bank is obliged to make reserve for non-current debits and this deprived the shareholders of access to bank to bank profits.
- Whatever the volume of non-current demand is higher, the volume of bad debts will also be higher .

The factor that reduce profitability and competitiveness of banks is the lack of attention to resources and consumptions, on other hand whatever the resources more expensive and the consumptions are less profit, the profit margins decrease and in the other words are much more important and more sensitive than the resource management and the problems of banks consumptions is over due and defferd debts that the lack of proper management lead to emergence it. In the case of nonperforming loans increase, it lead to bankruptcy of banks and financial institutions and in these conditions the banks to avoid bankruptcy insure their loans.

Nonperforming loans and inflation

With rising inflation combined with slowing economic growth and production in society decrease the real income and consequently reduce the repayment of debts in long-term and lead to increase the nonperforming loans of banks and the high profits of brokerage activities specially in the housing sector lead to decrease the repayment of interest and principal of facilities (Kordbache, Nooshabadi, 1390).

The major part of liquidity in society is in the banks accordingly, this issue has caused that the banks play an important role economic system and adjustment of economic relations. One of the tasks of banks is to attract the funds and saving to customers and provide the funds to the applications as facilities, also the banks must receive the facilities that gave to the customers and use them the economic cycle. So if the facilities that the banks grant not receive and not return again to the banks, he bank couldn’t grant this facilities to other applications. Also non-return resources to banks cause to increase liquidity in the society and as mentioned increasing liquidity create inflation; therefore the banks willingly and unwillingly cause to create inflation by granting facilities and non repayment them.

3- Studies

Foreign studies:

- Bourk (2014) examined in his study the performance of banks profitability in 21 countries in Europe and North America with regard to internal and external determinants affecting it. And for some of the problems in comparison between the banks in different countries introduced the concept of value added and this research was the confirmation for the hypothesis of risk aversion in the banks with a high degree of market power.
- MolyneuxṣThornton, (2013) were examined determinants and profitability of commercial banks in 81 European countries between 2001-2012. In this study main focus was on long-sized banks. The results of research showed negative impact of nonperforming loans on profitability banks.
- Ahmad & Taqados (2013) examined the effects of 9 macro- economic factors (development of foreign export, GDP, inflation, devaluation, the consumer price index, increasing industrial production, increasing foreign investment, unemployment, interest rates) on the increase nonperforming loans for time series in the 1990-2001. They used the method of linear squares committee to explain the variables of macro-economic of nonperforming loans.
- Gurustaunyons, Mugan 2012) examined profitability in Malaysia commercial banks using the analyze the determinants of profitability. The results of this study showed that among the management internal factors was a distributed with higher significantly in banks profitability and among external factors, the market interest rate had inverse effect and inflation had a positive effect in profitability of banks.
- Dimitrios & et al (2012) explained he factors of nonperforming loans in banking system of Greece and also separately in groups of loans (consumer and commercial and mortgage loans) using the method of dynamic panel data.

The hypothesis in this research is that both factors of macro-economic and the banks characteristic are affecting on loans quality and this effect is different in various loans. The results showed that for all types of loans, the banks are affected from nonperforming loans of macro-economic factors (GDP, unemployment, interest rate and public debts) and management factors.

Internal studies:

- Heidari et al (1393), the influence factors on increasing nonperforming loans of banks divided into two parts: endogenous and exogenous factors and examined the effect of macro-economic shocks on the banks nonperforming loans in 1379-1387. For this purpose used the ARDL model; but since the exogenous variables of the model have the endogenous property, so they try to present the dynamic relation of exogenous variables by VAR model. In order to evaluate the effect of nonperforming loans on economic shocks have used immediate reaction and the analysis of the variance as the instruments for analysis of stress test. According to the fitted model, the impact of economic shocks that occur from the components of monetary and financial policies such as inflation, non-oil GDP, liquidity and the interest rate of facilities have the highest impact on the nonperforming loans of banking system respectively.
- Mohammadzadeh,A, et al (1392) in an article entitled " obstacle identify and prioritize of banking defferd using Dymtl hybrid model of networking and VIKOR" the factors such as a lock of obtain a valid guarantor, economic instability in country, lack of proper coolateral, lack of competence determination of customer, insufficient of central bank has been effective in the formation of nonperforming loans.
- Hashemi, M and Nodehi (1391) examined the causes of nonperforming loans and past over due of Maskan bank during 1365-1390. According to this research, the impact of interest tares and difference in facilities profit rate plus fine rate confirmed with market interest rates of the money unorganized on amount of debts. All the above studies, showed the trend of macro-economic variables with profit (loss) of banks procyclical.
- Kordbache and noorbakhsh (1390) : In their article entitled " explaining the factors affecting the nonperforming loans on Iran banking industry" examined the factors creating the nonperforming loans of commercial banks in Iran banking industry. They concluded by fitting a regression model of econometric that operational efficiency, precautionary behavior and the type of ownership of banks and macro-economic conditions are determinant variables and significant in explaining nonperforming loans.
- Safarpoor (1390) surveyed the impact of banking profit rates on nonperforming loans fluctuations during 1358-1387 by autoregression distributed lag model (ARDL). The results showed that in long-term the

difference in interest rate of banking facilities with the market interest rates of unorganized money and country risk have weak significant on the ration of non performing loans. Also determining long-term model explain sustainability of the estimated coefficients. So that there is positive and significant relation between the ratio of nonperforming loans and independent variables of model such as the size of book, country customs input the oil income.

- Izadinia and Taki (1390) used a sample of 99 companies listed to the Tehran Stock Exchange during 1382-1388 for examining ralarion between commercial unit profitability and working capital management. The results of this research showed that there is negative relation between profitability, measured by the ratio of gross profit, and cash conversion cycle and its components and is statistically significant.

4- Model estimation

In order to estimate quantitatively hypothesis in this research and evaluation of past over due of Islamic contract on the profitability of private selection banks, below model represent according to the article of Angela Roman[1] basic (2012):

ROA = f (NPL , INF , INT)

$$ROA_{i,t} = \alpha_0 + \beta_1 NPL_{i,t} + \beta_2 INF_t + \beta_3 INT_t + \varepsilon_t$$

In this model i represent private bank and t represent the year of study. Also in the regression model ROA (Return On Assets) as an indicator of profitability is dependent on the role of variables; and NPL(nonperforming loans) INF (inflation) and INT (interest). The variables of the rate of return on assets and past over due of selection banks is obtained using the banks balance sheet data and the variable of inflation and interest rate is obtained time series data os cenntal bank.

[1] Angela Roman(2012) : "Analysis of Profitability Determinants: Empirical Evidence of Commercial Banks in the New EU Member States "Alexandru Ioan Cuza" University of Iaş i" Faculty of Economics and Business Administration, Department of Finance, Money and Public Administration

For the variable of interest rate in accordance with the definition of central bank have been used the average of interest rate.

According to Levin,Lin Chu test results that is in table 1, all variables are steady in level and without worrying of false regression is estimated the model.

Table 1 : the result of the reliability of the model variable

description	probability	Computational statistic	variable
stationary	0.0442	-1.70358	Return on assets
stationary	0.0063	-2.49407	Past over due debts
stationary	0.0000	-4.79050	inflation
stationary	0.0034	-2.70726	interest

Reference: application exits

The probability calculated for variable indicate that zero hypothesis on a unit has been rejected and in confidence level of 95% are steady in the all of the model variables.

Estimate the model of the profitability of private selection banks

To estimate the profitability of the private selection banks must determine the kind of model estimation and for this issue first intercept test (F test) are done. If zero hypothesis is rejected, cause the Hausman test to determine fixed affect model.

The first test (intercept equality test)

To determine the optimal model, the first examine the profitability of private banks by the first test and select between method pooling data and panel data method. The statistic of this test have F explanation and zero hypothesis showed that the α_i is steady for all subcategories of financial markets is fixed and can be applied OLS method:

$$H_0: \alpha_0 = \alpha_1 = \cdots = \alpha_n = \alpha$$

$$H_1: \alpha_i \neq \alpha_j$$

$$F(n-1, nt-n-k) = \frac{(RSS_{UR} - RSS)_{R/(n-1)})}{(1 - RSS)_{UR/(nt-n-k)})}$$

The amount of F presented in the following table:

Table 2 : F test

Leamer test reslts Test cross-section fixed effects			
probability	Degree of freedom	Test statistic	test
0.0000	(4,47)	22.673201	F test
0.0000	4	59.118266	Khi2 test

Source: application exits

The obtained statistics compare to table statistics in the significant 5% level since this statistics is bigger than table statistics, H_0 hypothesis is rejected and this means that the intercept is different for different level. In this case, the use of OLS will be inconsistent and deficiency. As a result must used fixed method or random effects model.

The second test (Hausman test: choose between fixed or random effects)

Now that in the F test, H_0 hypothesis is rejected against H_1. Which model is must examine? The fixed effects or random effects. And it must determined that which is better. Hausman in 1987 has proposed a test which the difference between fixed effects and random effects considered as zero hypothesis. So to reject zero hypothesis use the fixed is better. In this test, zero hypothesis arise by considering the lack of correlation between α_t and X_u. As said the main idea of Hausman test the rater of fixed effect and random effect that one of them is consistent under the zero hypothesis and the opposite hypothesis. The significant difference between two rater showed that couldn't accept zero hypothesis .

The result of hausman test is in the table below:

Table 3: the result of Hausman test

The result of hausman test Test period random effects			
probability	Degree of freedom	Khi2 test statistic	test
0.7957	1	0.067012	Khi2

Source : application exits

Since Hausman test statistics ($\aleph^z$) of table statistic isn't more 5%, the zero hypothesis didn't reject and the use of random effects would be more appropriate.

After the examination of the validity of variables of the model and ensure the lack of fuls regression and also after diagnostic test to select the appropriate model for profitability private banks must estimate the model.

The estimation results of the model isbelow table:

Table 4 : the results of the profitability of private anks

Dependent variable: profitability of bankd				
Method: Panel EGLS (Period random effects)				
probability	Test statistic	Standard deviation	Effective coefficiant	variable
0.0298	2.240209	0.006216	0.013925	Fixed part
0.3617	-0.921170	8.26E-05	-7.61E-05	inflation
0.0156	-2.472936	3.88E-08	-9.62E-08	Past over due debts
0.0288	-2.294805	0.000411	-0.000942	interest
Regression to technical specifications				
15.36556	F statistic		0.695909	Coefficient of determination
0.000000	F statistic probability		0.650619	Adjust coefficient of determination

Source : application exits

According to this model the effect of inflation, interest and past over due debts on the profitability of private banks is negative and significant. Due to result of estimate the model based on the effect of negative and significant of past over due debts on the banks profitability confirm the research.

The effect of interest on the banks profitability is negative and significant.

5- Recommend

Due to the negative effect of nonperforming loans on the banks profitability is suggested that the micro-level, the banks consider macro-economic variables in assessment of the technical and economic of the project for granting facilities be returnable.

Due to the negative impact of interest rate is recommended that the economic policy markers do more carefully to determine interest rate so that not to cause reduction of profitability of the banking.

To the researcher recommend that the effect of focus on bank industry on important parameters other than profitability.

It is suggested that the future research examine interactions of risk and focus on bank profitability.

It is suggested that the success of banks in capturing saving of the people is examined and determine what factors have the greatest impact on attracting saving of society.

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