Investigating the Role of Past Maturity Demands and Delayed Demands on Profitability of Bank Mellat Khozestan (2007 to 2011)

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ABSTRACT

This survey has been performed with the aim of stating the relationship between past maturity demands and delayed demands and profitability of branches of Bank Mellat in Khozestan, Iran. For this purpose, banking and financial indicators have been used for period of 2007 to 2011 for 80 branches of Bank Mellat. The survey method is application in respect of goal, and descriptive correlation type in respect of collecting data. In this survey the regression model has been used for evaluating the relationship between variables and for testing hypotheses. This survey is a casual-comparative study and the data of this survey has been provided through branches of Bank Mellat, and to analyze them SPSS software has been used. The results of this survey indicate that there is a reverse relationship between dependent variable and independent variable, and this means that by increasing past maturity demands and delayed demands, bank profitability decreases, and by decreasing these demands, bank profitability increases.

KEYWORDS: Demands, Past Maturity Demands, Delayed Demands, Profitability

INTRODUCTION

Nowadays the topic of banks demands is one of the most fundamental subjects discussed in all meetings, committees, lectures, and conferences of managers and presidents of branches and banks, and undoubtedly the first issue after resources and expenditures of banks, is demands and their legal affairs. Since one of the bases of bank is to offer services to the community and different strata of individual and legal entities at different levels of production, industry, services, agriculture, building,… in terms of credit instruments and paying loans, the issue of demands and bank demand from those who have received loans and did not perform their commitment in certain due date is raised.

Currently the banks attempt to pay loans from domestic resources, duty loans, quota, presentations, and other various ways, so that as they attempt to mobilize resources, they pay expenditures and determined roofs too, and thus they consume bank resources accurately and in application uses in the framework of various loans contracts. But the point that to what extent the banks can rotate this cycle correctly and with necessary risks and controls arises an issue called past maturity and delayed demands of banks that seems to have impact on bank profitability. In fact those demands of banks that their due date have been ended, but have not been paid at due date by customers are transferred into past maturity demands accounts, and provided that they are not settled in determined deadline (maximum 6 months) they are transferred into delayed demands account. In practice creating such demands causes temporary or permanent withdrawal of a part of bank resources from operational cycle, and causes bank to confront with problems like reduction of liquidity and profitability. Investigations indicate that in many of the studies the issue of past maturity demands and delayed demands have been dealt with. Some of the studies like Godlewski [1] has used return on assets ratio as banking performance indicator, and have investigated its impact on delayed demands. The results obtained from his investigation indicate that decrease of delayed demands causes increase of banking system profitability. Barth et al. [2] have investigated the relationship between supervision and regulations framework on developing banking section, which the results obtained from their investigation indicate that observing capital adequacy decreases delayed demands. Pasiouras [3] investigates the relationship between capital adequacy and banking system efficiency that there is positive relationship between them. He also declares that the more financial constraints are reduced, the profitability of banking system decreases and bank confronts with higher risk and hazard, and delayed demands increase. Dewatripont et al. [4] have investigated the impact of capital constraints on delayed demands that the results obtained from their study indicate that the more capital constraints are, the delayed demands increase. With regard to the importance of past maturity demands and delayed demands in banking systems of countries and the role that demands can have on profitability, in this article it is tried to investigate the role of past maturity demands and delayed demands on bank profitability.

Granting loans in banks for obtaining profit margin is accomplished to cover operating and non-operating expenses. Provided that the process of granting loans is not associated with appropriate validation, not only it will not result in profitability, but it will also result in more expenses such as legal costs and spending time and energy of human resources. Moreover, the higher the flow rate loans of one bank is and the volume of

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delayed items allocate small percentage of granted loans, the profitability would be more, and ultimately results in employees and customers' satisfaction and paying more profit to stockholders and entering more resources from granted loans and their profit to the system for granting new loans.

Past maturity demands are those demands which 2 months have been passed from the maturity date of its principal and interest or date of cessation of paying installments, and it has not exceeded 6 months yet. Delayed demands are those demands which more than 6 months and less than 18 months have been passed from maturity date or the date of cessation of paying installments.Profitability is the most important mission, objective, and existence philosophy of organizations. Profitability shows that the applied resources have productivity and output, and systems work properly and value is created for community and all stakeholders. Bank profitability is a kind of indicator for determining risk-taking behavior of bank managers. Those banks which confront with high profitability, are under pressure for creating income, and thus participate less in risky activities. Those banks which have low efficiency confront more with problematic loans. Those managers who act poorly in costs management also enter into risky activities and cause their customers suffer losses more than others.

Godlewski [1] has used return on assets ratio as banking performance indicator, and has investigated its impact on delayed demands. The results obtained from his investigation indicate that decrease of delayed demands causes increase of banking system profitability. Sinkey et al. [5] showed that banks confront with lower rate of delayed debt by observing capital adequacy in a long term period, and on the other hand those banks that have higher capital adequacy participate more in risky activities, and thus their delayed demands increase. Barth et al. (2004) have investigated the relationship between supervision and regulations framework on developing banking section, which the results obtained from their investigation indicate that observing capital adequacy causes decrease of delayed demands. Pasiouras [3] investigates the positive relationship between capital adequacy and banking system efficiency that there is positive relationship between them. He has also stated that the more financial constraints are, the banking system profitability decreases, and bank confronts with higher risk and hazard, and delayed demands increase .

In the obtained interviews and questionnaires from some of the bank debtors, the vast majority of them knew economic condition of the country as the most important factor creating demands, and requested governmental protection in this respect. Heidari et al. [6] state that macroeconomic conditions and government and central bank interferences in economics along with business periods shaped in the context of global economy, can stimulate the profitability of firms and individual borrowers, and impact on loans and delayed demands of banking system. The shock impact of economic variables which is created by performing monetary and financial strategies like inflation, non-oil gross domestic growth, liquidity volume, interest rate of loans have respectively highest impacts on delayed demands of banking system Farman [7] states that by increasing one unit in returned check, credit history, and amount to average inventory ratio variables, the probability of loans becoming delayed increases, and by increasing one unit in creditor turnover of the applicant's current account, the probability of loans becoming delayed decreases.

MATERIALS AND METHODS

The aim of this article is to investigate the role of past maturity demands and delayed demands on profitability of bank Mellat Khozestan. For this purpose, basic data of received interest, average of granted loans, paid interest, average of term deposits, total of common income, income obtained from loans, other income, free resources, operational costs, non-operational costs, total of past maturity demands and total of delayed demands in all branches of bank Mellat Khozestan which are totally 80 branches for time period of 2007 to 2010 have been used. Survey methodology is application in respect of goal, and descriptive correlation type in respect of collecting data. In this survey the following linear regression model has been used for evaluating the relationship between past maturity demands and profitability, and for testing the first hypothesis of survey. The dependent variable in this model is profitability of bank Mellat, and the independent variables are past maturity demands, common incomes, other incomes, operational costs, non-operational costs, average of loans. Using logarithm variable instead of variable itself is for the regression model to be better.

Profitability $it = \beta_0 + \beta_1$Past Maturity $it + \beta_2$Income $it + \beta_3$Other Income $it + \beta_4$Cost $it + \beta_5$Other Cost $it + \beta_6$Loan $it + e_{it}$

And for testing second hypothesis, that is investigating the relationship between delayed demands and banks profitability, the following linear regression model has been used. The dependent variable in this model is bank profitability, and independent variables include delayed demands, common incomes, operational costs, non-operational costs, and average of loans.

Profitability $it = \beta_0 +$Delayed $it + \beta_2$Income $it + \beta_3$Other Income $it + \beta_4$Cost $it + \beta_5$Other Cost $it + \beta_6$Loan $it + e_{it}$

For calculating bank Mellat profitability, the profitability formula existing in branches of bank Mellat, retrieved from instruction of calculating profitability of branches of bank Mellat, has also been used.

The regression procedure is in a way that the significance of the whole regression model should be firstly tested, and then the significance of individual coefficients of independent variables should be investigated. If Y changes in regression cannot be attributed to X changes, then the existence of linear

relationship between X and Y is rejected. The impact ratio of independent variable(s) on dependent variable is measured by coefficient (β); another word provided that the independent variables coefficients) is equal to zero, regression model is not significant (there is no relationship between variables), thus the hypothesis i=1, 2, 3, n should be tested. For testing this hypothesis analysis of variance can be used. This test is performed by using the F-statistic. In these article statistical analyses with Pearson correlation tests of significance, Durbin-Watson test, and F (Fisher) and T tests have been used to investigate regression significance. In this survey the desired error level has been determined 5 percent, which in this case the reliability level would be 95 %. Before performing survey hypotheses test, the tests related to classic assumptions of regression have been performed.

RESULTS

In table 1 it is observed that the profitability average of branches of bank Mellat is 0.49, and profitability of bank branches is between minimum -10.11 to 13.27, and its standard deviation is also 4.57. It is also observed that the average of past maturity demands of branches of bank Mellat of Khosetan province that their natural logarithm have been used in this survey is equal to 13.79, which its minimum is zero and its maximum is 16.03, and its standard deviation is also 2.41. Table 1 shows that natural logarithm of delayed demands is at least zero and maximum 18.00, and its medium is equal to 14.41 and the results of this survey show that branches of bank Mellat of Khozestan province have high average of delayed and past maturity demands. In table 1 descriptive statistics of other variables of survey has been presented.

Table 1. Descriptive Statistics of central indicators and diversity of variables of survey

Variables	MIN	MAX	MEAN	SD
Profitability	-10.11	13.27	.4980	4.57287
Past Maturity	0.00	16.03	13.7939	2.41656
Other Income	0.00	18.05	14.7248	2.53605
Income	0.00	17.71	15.9715	2.66029
Cost	0.00	19.31	16.0121	2.67252
Other Cost	0.00	18.45	15.3557	2.59823
Loan	16.81	20.18	18.1112	.76905
Delayed	0.00	18.00	14.4165	3.24937

In the section of normality of data, survey independent variables, that is bank profitability is investigated by Kolmogorov – Smirnov test. It is observed in table 2 that the significance level of Kolmogorov – Smirnov test for variables as survey dependent variable is more than 5 percent; hence these variables have normal distribution, and with regard to the point that survey dependent variable has normal distribution, for data analysis and testing survey hypotheses, parametric tests are used.

To test independence of errors from each other, Durbin-Watson test is used. As it is observed in table 3, the obtained Durbin-Watson value for the first hypothesis is 2.104, and for the second hypothesis it is 1.978 which is between 1.5 and 2.5; thus the hypothesis of independence of errors is accepted.

Table 2. Statistics and Significance Level of Kolmogorov – Smirnov Test

Parameters	Profitability
Statistics value of Kolmogorov – Smirnov	0.507
Significance Level	0.959

Table 3. Summary of Model

Model	R	R^2	Adjusted R^2	Std.Error	Durbin-Watson
1	0.740	.548	0.511	3.19722	2.104
2	0.773[a]	.598	0.565	3.01578	1.978

As it is observed in table 3, the obtained coefficient correlation for the first hypothesis is 0.74, and for the second hypothesis it is 0.77, indicating that there is a good correlation between independent and dependent variables. The obtained determination standard coefficient value for the first hypothesis is 0.548. Therefore, only about 54% of changes in model dependent variable are due to model independent variables; another word 54 percent of changes in profitability of bank branches is due to model independent variables, and the obtained determination standard coefficient value for the second hypothesis is 0.598. Therefore, only about 59 percent of changes in model dependent variable are due to changes in model independent variables; another word 59 percent of changes in profitability of bank branches is due to model variables.

In order to test existence of linear relationship between independent and dependent variables, F (Fisher) parametric test, and analysis of variance (ANOVA) are used in this survey. As it is observed in table 4 the significance level of F test has been lower than 5 percent (zero). In order to make regression model better, (F value) and instead of using variables themselves, the logarithm of model coefficients independent variables is

also used, that would not make any problem in respect of statistics. Thus, according to this table, the assumption of existing linear relationship between independent and dependent variables, and existence of linear relationship in survey model is confirmed, and linear regression can be used for assumptions analysis.

Table 4. Analysis of Variance

	Model	SS	DF	MS	F	Sig.
1	Regression	905.754	6	150.959	14.768	.000[a]
	Residual	746.224	73	10.222		
	Total	1651.978	79			
	Model	SS	DF	MS	F	Sig.
2	Regression	988.050	6	164.675	18.106	.000[a]
	Residual	663.928	73	9.095		
	Total	1651.978	79			

In order to investigate the significance of estimated coefficients of survey model, it is observed in table 5 that the estimated coefficients for past maturity demands variable is equal to -1.106, and considering significance column, it is observed that estimated coefficients in 95% reliability level is significant, because its significance is 0.019, and this number is less than 5% accepted error level in this survey. Therefore, existence of relationship in 95% reliability level between past maturity demands and profitability of branches of bank Mellat is confirmed. Negative coefficient of this variable means that this relationship is negative, that is by increasing past maturity demands, profitability of branches decreases.

Table 5. Model Variables Coefficients

Profitability $_{it}$=β_0+β_1Past Maturity $_{it}$+β_2Income $_{it}$+β_3Other Income $_{it}$ +β4Cost $_{it}$ +β_5Other Cost $_{it}$ + β_6Loan $_{it}$+								
	Variables						Collinearity Statistics	
		B	Std. Error	Beta	T value	Sig.	Tolerance	VIF
1	(Constant)	61.992	9.529		6.505	0.000	-	-
	Past Maturity	-1.106	0.460	-0.585	-2.405	0.019	0.105	9.547
	Income	4.083	0.876	2.375	4.662	0.000	0.024	41.954
	Other Income	-0.786	0.713	-0.436	-1.102	0.274	0.040	25.259
	Cost	0.340	0.652	0.199	0.521	0.604	0.043	23.488
	Other Cost	-2.552	0.834	-1.450	-3.061	0.003	0.028	36.248
	Loan	-3.707	0.579	-0.623	-6.404	0.000	0.653	1.531
a. Dependent Variable: Profitability								

It is also observed in the above table that the estimated coefficient for other incomes is equal to -0.786, and with regard to significance column, it is observed that the estimated coefficient in 95% reliability level is not significant (significance of this coefficient is equal to 0.274 which is more than 5%). Thus, in some models this coefficient should be removed. In table 5 the coefficients of other model variables and significance of each one have been shown, and it is observed that the coefficient of operational costs variables is not significant, because its significance is equal to 0.604 which is more than 5% error level and this variable should also be removed in final model. The final survey model with regard to removing those variables which their significance is more than accepted error level in this survey, that is 5% is as follows. It means that among independent variables in model, variables of past maturity demands, common incomes, and average of loans in level 5% have been confirmed, and the impact ratio of past maturity demands logarithm by removing the impact of other independent variables is 0.585 with level 0.019.

Profitability it=61.992 - 1.106Past Maturity it+4.083Income it-2.552Other Cost it-3.707Loan it+ e$_{it}$

In table 5 it is observed that the estimated coefficient for delayed demands variable is equal to -0.725, and considering significance column it is observed that the estimated coefficient is at 95% reliability level, because its significance is zero and this number is less than 5% accepted error level in this survey. Thus, existence of relationship in 95% reliability level between delayed demands and profitability of branches of bank Mellat is confirmed. Negative coefficient of this variable means that this relationship is negative, that is by increasing delayed demands, profitability of branches decreases

It is also observed in the above table that the estimated coefficient for other incomes is equal to -0.106, and considering significance column it is observed that estimated coefficient is not at 95% reliability level (significance of this coefficient is equal to 0.879 that is more than 5%). Thus, this coefficient should be removed in final model. In table 4.8 the coefficients of other variables of model and significance of each one has been shown and it is observed that the coefficient of operational costs variables is not significant, because its significance is equal to 0.814 which is more than 5% error level, and this variable should also be removed in final model. The final survey model with regard to removing variables which their significance are more than accepted error level in this survey, that is 5%, is as follows, which the impact ratio of delayed demands logarithm is -0.515 in 0.05 level in profitability of bank Mellat.

Profitability it=55.577-.725 Delayed it+3.623Income it -2.559OtherCost it -3.328Loan it+ e$_{it}$

Table 6. Model Variables Coefficient

Profitability $_{it}$=β$_0$+ Delayed $_{it}$+β$_2$Income $_{it}$+β$_3$Other Income $_{it}$ +β4Cost $_{it}$ +β$_5$Other Cost $_{it}$ + β$_6$Loan $_{it}$+ e$_{it}$							
Variables		**B**	**Std. Error**	**Beta**	**T value**	**Sig.**	**Collinearity Statistics**
							Tolerance	**VIF**
1	(Constant)	55.577	9.121		6.094	0.000		
	delayed	-0.725	0.184	-0.515	-3.943	0.000	0.323	3.101
	Income	3.623	0.795	2.108	4.558	0.000	0.026	38.842
	Other Income	-0.106	0.691	-0.059	-0.153	0.879	0.037	26.698
	Cost	-0.148	0.625	-0.086	-0.236	0.814	0.041	24.271
	Other Cost	-2.559	0.777	-1.454	-3.292	0.002	0.028	35.431
	Loan	-3.328	0.554	-0.560	-6.011	0.000	0.635	1.575
a. Dependent Variable: Profitability								

In linear investigation of independent variables it is observed that VIF value for most of the variables is values greater than 0.2 and less than 10, and thus we conclude that there is no linear regression between independent variables of this model, and therefore there is no limitation in applying multi-regression model on observations.In order to investigate normality of the residuals, with regard to the diagram of next page which all the residuals are not located around or over fitting line, it can be concluded that the residuals do not have normal distribution, and histogram diagram confirms this point too.
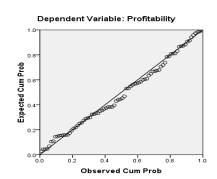
Considering the survey findings, it is observed that the estimated coefficient for past maturity demands as the major independent variable of survey model 1 is equal to -1.106, and with regard to significance column, the estimated coefficient at 95% reliability level is significant, because its significance is 0.019, and this number is less than 5% accepted error level in this survey. Thus, existence of relationship in 95% reliability level between past maturity demands and profitability of branches of bank Mellat is confirmed, and this means confirmation of the first hypothesis of survey. The estimated coefficient for delayed demands variable is also equal to -0.725, and with regard to significance column it is observed that the estimated coefficient is at 95% reliability level, because its significance is zero and this number is less than 5% accepted error level in this survey. Thus, existence of relationship in 95% reliability level between delayed demands and profitability of branches of bank Mellat is confirmed, and this means confirmation of the second hypothesis of survey like the first one. The obtained coefficient for this variable like the variable coefficient of first hypothesis is negative, and this coefficient being negative means existence of reverse relationship between dependent variable which is profitability of bank and independent variable which is delayed demands, and it means that by increasing delayed demands, profitability of banks decreases.

DISCUSSION

One of the main functions of banks is to keep people's deposits. Lending power and the ability to perform duties of bank as a financial, credit, and monetary institution depends directly on the funds available for bank, and the most major resource to obtain funds is people's deposits. Therefore, provided that the banks cannot receive their demands on time, in addition to the point that the times of cash flow in cycle of production and employment is impaired and reduced, the risk sense of interests of depositors will also cause reduction of offering resources to the banks. Profits or losses of banks, primarily comes from the quality of their granted loans. The higher the rate of loans flow of a bank, the volume of delayed items allocates poor percent of the total granted loans and thus more profit, and ultimately results in satisfaction of employees, customers, and paying more profit to stockholders and entering more resources from principal and interest of granted loans into the system for granting new loans. In this article considering the importance of relationship between demands

and profitability of bank, the role of past maturity demands and delayed demands variables on profitability of bank is investigated. For this purpose, linear regression model based on existing theoretical bases and with regard to mentioned variables has been used. In this model, compound data method and statistics of 80 branches of bank Mellat Khozestan for period of 2007 to 2011 have been used. The results obtained from model estimation indicate that there is a reverse relationship between past maturity demands and delayed demands with profitability of bank, meaning that increase of aforesaid demands will result in reduction of bank profitability, and decrease of aforesaid demands will result in increase of bank profitability. This result corresponds with the results obtained from studies of Barth et al. [2]. Like study of Godlewski [1] the results of this article indicate that the higher the profitability of banking system, it will encounter less delayed demands. It is also consistent with the results of Pasiouras' [3] research stating that whatever delayed demands increase, profitability of banking system decreases and bank encounter higher risk and hazard.

Considering the results obtained from survey hypotheses, it is proposed that all bank branches when granting loans to people and companies, by getting bail provide context of profitability. It is also proposed that a powerful supervision system prevents branches of bank Mellat to get high risky bails, and by getting bails with low risk or zero risk helps bank profitability.

The banks can also take into account incentive plans for employees of branches to reduce past maturity demands and delayed demands, so that in respect of preventing past maturity demands and new delayed items, they are concentrated, designed, compiled, and performed, and the highest reward are accrued to those items which have not been transferred into demand headings yet, and getting installments causes liquidity entrance to the bank and by increase of liquidity, the profitability of bank increases.

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