INVESTIGATING THE EFFECT OF RESOURCES AND CONSUMPTION COMPONENTS OF SHAHR BANK ON ITS LIQUIDITY

Mahnaz Ghorbani and Masoud Ghorbanhosseini*

[1]Department of Accounting, college of human science, Saveh Branch, Islamic Azad University, Saveh, Iran

*2Department of management, Saveh Branch, Islamic Azad University, Saveh, Iran

Corresponding author: E-mail: mghorbanhosseini@gmail.com

ABSTRACT: *The objective of present study is to determine the effect of resources and consumption components on Bank Shahr liquidity, first, categorizes resources and consumptions in fourteen components. The components of the resources are: current deposits, loans and similar deposits, long-term deposits, liabilities to Central Bank, liabilities to banks and credit institutions, deposits from other banks and institutions; other income and deposits and consumption components are: receivables from Central Bank, receivables from other banks and financial institutions, facilities-exchange contracts, facilities-participation contracts, past due receivables, other assets and costs. To find out the effect of the components of the target population that all changes in the fourteen components since the opening of Shahr Bank till 2014, using available sampling, the remaining of the end of the month was taken as sample, from the beginning of the year 2009 to the end of the year 2013. After data analysis using SPSS and running multi-regression, the authors came to the conclusion that, from among the fourteen components, current deposits, deposits and other loans and deposits increase the amount of the cash, and components with negative effects include income, facilities-participation contracts, facilities-exchange contracts and costs. The result can help bank managers in the optimal management of liquidity.*

Keywords: Cash, cash management, Resources, Consumptions, Shahr Bank

INTRODUCTION

Banks, as the largest financial institutions of money market, should manage liquidity supply and demand properly so that they can make their business without risk and do not face liquidity risk. In terms of open and global economy, this task is very essential and challenging [1] Liquidity risk arises from the inability of banks to provide funds for the payment of deposits or timely payment of debts such as deposits. Liquidity management is the ensuring of the bank to perform its contractual commitments. In fact, liquidity management is the ability of bank for the optimum management of deposit reduction and other liabilities, along with the loan portfolio growth management and other assets and off-balance sheet items; so that banks can compensate lack of resources in the fastest time possible and acceptable expenses In practice, one of the ultimate objectives of liquidity management is to maintain a balance between assets and liabilities [1]

Imbalance between assets and liabilities is because, naturally, banks issue cash debt, while they invest in non-cash assets [2]. Maintaining inadequate levels of liquidity cause banks to face with the risk of inability to fulfill its obligations, and, therefore, they come across bankruptcy. Keeping plenty amount of liquidity also leads to an inefficient allocation of resources, reduction of the rate of interest to deposits and loss of the market Thus, Bank's ability to assess and manage the supply and demand for liquidity is essential to maintain banking activities. If a bank fails to meet its liquidity gap, it faces with liquidity problems; as a result, it encounters with other problems such as high interest rate risk, capital requirements or bank deposits and reputation risk [1].

Banks will, along with meeting the needs of liquidity, minimize the volume of low-yielding assets while increasing competition of banks, on the one hand, and the withdrawal of deposits due to differences in interest rate in different economic sectors, on the other, intensifies the attempt to optimize this type of non-profitable assets [3].

Cash is the most liquid financial asset of financial sector whose management is of utmost importance. Surplus or deficit liquidity causes problems for the organization each of which impose some costs to the organization. Identifying the inflow and outflow of liquidity and the main factors affecting this flow will be very entrepreneurial for cash flow management. Identifying input and output factors and statistical methods such as multiple regressions can be used to manage system resources and expenses well and manage liquidity better. In this paper, after introducing the components of the Bank's resources and consumptions, other major factors affecting on liquidity of this bank using multiple regression will be discussed.

THEORETICAL LITERATURE

Today, banks, as the biggest financial intermediaries, play an important role in providing the required capital for firms. These financial institutions face with serious challenges in liquidity management to fulfill their role better [4].

One of the biggest challenges that the banking system faces with is liquidity management [5]. The main reason for this challenge is that most of the resources of banks are provided from short-term deposits. Furthermore, the facilities of banks are devoted to investment in assets, which have low degree of liquidity. In case the amounts of liquidity is inadequate, banks will face with inability to fulfill their commitment, therefore, are exposed to the threat of bankruptcy. Also, keeping more cash, in spite of reducing the risk, gets the investment opportunities off the bank and will reduce the efficiency of bank resources [5]Maintaining cashable assets to ensure the existence of financial flows to pay the applicants reduce investment opportunities for banks. In addition, the intelligent management enables bank liquidity to meet customer’s needs on time and without error. This will increase the credit of bank among customers and society.

If faced with deficit liquidity, using the resources of Central Bank in the long term, due to the high rate of interest, will reduce the profitability of banks. So, through managing liquidity, on time estimating of cash depositors and facilities clients, and creating a safe range of liquidity at the lowest cost, it is possible to maintain the profitability of banks. It can be said that liquidity management includes predicting the bank's needs at different times and meeting these needs with the least possible cost [6]

The real performance of organization in attracting the resources, giving facilities, and investing may create different cash flows with anticipated budget. The advantage of forecasting liquidity is that it informs the organization from future cash surpluses and deficiencies and provides the organization with better possibility to deal with the shortage or surplus liquidity. So, it is necessary to assess the actual cash flow and forecasted cash flow based on performance continuously and match it with budget.

Understanding the effective factors on the liquidity of banks, controlling the effective factors, and providing predicting future cash flow requirements according to actual commitments and consumptions and known resources are very important for all banks; the important point is that the working policy of banks is not the same, so, since Shahr is a newly established bank and has a slightly different macroeconomic policy, and, also, the affecting factors on the liquidity of this have not yet been investigated, research in this area is necessary.

In this study, the authors seek to study the impact of the components of the sources and consumptions of Shahr Bank on its liquidity from 2009 to 2014, and, through knowing the intensity and quality of its impacts on the liquidity of the bank, have a proper control over liquidity system of bank.

RESEARCH METHODOLOGY

The current study, regarding classification based on the purpose, is an applied research. In this study, the aim is to determine the relationship and applying these relationships in the forecast. In this study, the authors seek to investigate the influence of the components and consumptions of Shahr Bank on its liquidity and, by knowing about the intensity and quality of their effect on bank's liquidity, have a proper control over bank's liquidity system. Doing this research is in the framework of inductive-deductive arguments. It is deductive due to helping to explain the research hypotheses by existing theories and inductive due to testing the hypotheses. In this research, components of resources and consumptions of bank are as independent variable of bank and bank's liquidity is as independent variable; in this research, the authors are trying to find the impact of independent variable on the dependent variable.

After studying the relationship between the resources and consumptions of bank on liquidity, through multiple regression model, a model is proposed which optimally show the relationship of affecting variables on the liquidity. Overall structure of this model will be as follows:

Relation (1) Analytical Model of Study

$$LQD= \alpha+\beta 1x1+\beta 2x2+\ldots+\beta kxk$$

LQD: bank liquidity (the dependent variable)

α: intercept of the model (if needed)

β k: coefficients of variables

x k: the independent variables (components of the bank's resources and consumptions)

RESEARCH HYPOTHESES

According to the above-mentioned theoretical bases and purpose of the research, the following hypotheses have

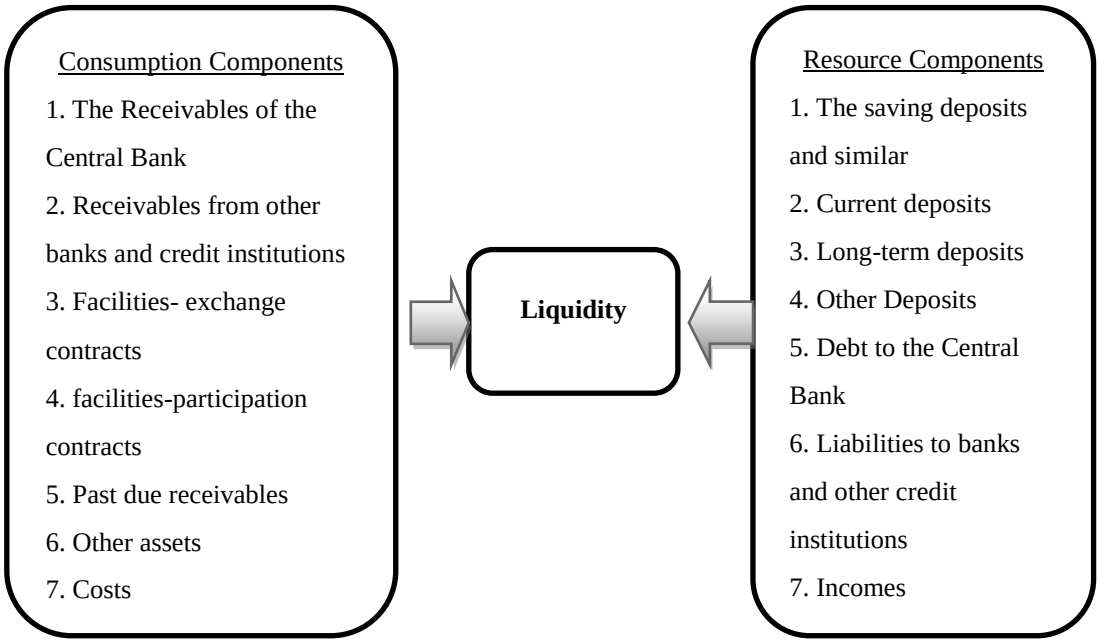

Figure 1: Analytical Model of Research

been formulated**:**

First hypothesis:

Changes in resource components impact bank's liquidity.

The second hypothesis:

Changes in consumption components affect the liquidity of bank.

Variables

Dependent variable: Bank's liquidity (total funds, bank funds, and securities)

Independent variables:

Independent variables: include resources and consumption components divided into seven components.

RESOURCE COMPONENTS:

1. Deposits (current): According to the information received from Shahr Bank, these deposits include transferred deposit loans, shared civic participation deposits, unused managed funds, unasked remaining.
2. Saving deposits and similar deposits : it is a bank account which receives no interest bank [7]. Deposits in Shahr Bank include savings deposits and especial deposits which are cheap resources of banks.
3. Long-term deposits: this deposit is a contract between the bank and the customer based on which the customer gives a certain amount of cash for a given period to the bank and the bank commits to pay back the deposit and interest in due time, which in Shahr Bank include long-term deposits, short-term deposits, and especial short-term deposits.
4. Other Deposits: Other deposits include cash deposits of issued guarantees, employee pension fund, current account without check and unasked balanced accounts.
5. Debt to the Bank: includes loans and funds from the Central Bank.
6. Liabilities to banks and financial institutions: include facilities and cash receipts from banks and credit institutions.
7. Income: According to accounting standards of Iran, income is an increase in equity, except it is related to the owners' income. Income in Shar bank includes interest accounts of facilities, fees, interests from the deposits, Bonds interest, and miscellaneous revenues.

CONSUMPTION COMPONENTS:

1. The Central Bank Receivables: including legal deposits and receivables from the Central Bank.
2. Receivables from other banks and financial credit institutions: including deposits in domestic banks, facilities and other receivables from banks and credit institutions.

   Facilities- exchange contracts: based on these contracts, the banks provide the whole or part of an economic activity investment needed, with an exception that after the contract and before the economic activity, the interest of the bank is known, and future developments and possible changes in the financial condition of the activity (income and loss) do not relate to profit and receivables of the bank in the contract. Contracts include installment sales, hire-purchase and construction loans [8].
3. Facilities-participation contracts: in these contracts, the banks provide the whole or part of the capital requirements of an economic activity (industrial, commercial or service); ultimately, at the end of the activity, according to the contract with economic participant, they divide the profits of this activity. Collaborative agreements include partnership, civil partnership, legal partnerships, direct investment and Salaf [8].
4. Past due receivables facilities: facilities are categorized based on the elapsed time of the due of the installments in the past categories, doubtful and deferred receivables.
5. Other assets: including temporary debtors, short-term deposits in Royal Bank of Azerbaijan, dividends received from bonds, dues at the center of banks and businesses, petty cash and advance employees, stamp tax and intangible assets.
6. Costs: including rent subsidiaries, advertising, employee incentive plans, audits, public-administrative-organizational expenses, commission payments, the cost of doubtful receivables, building repairs, and other expenses.

POPULATION AND SAMPLE

Population and statistical sample of this research are the cash at the end of the month, resource and consumption components of Shahr Bnak from the beginning of 2009 until the end of 2013. In this way, for each of the variables 60 data was collected. In this study, the available sampling method is used because at the financial balances of Shahr Bank only the remaining is available at the end of each month and, as the name suggests, in this method, sampling from the available information has been used as statistical sample.

THE RESULTS OF THE STATISTICAL ANALYSIS DESCRIPTIVE INDICES OF RESEARCH VARIABLES

Table 1: statistical characteristics of liquidity based on each year (Figures are millions of Rial)

Year	Mean	Standard Deviation	Min	Max
2009	60465.00	26467.69	5330.00	92065.0
2010	364202.3	398536.4	81516.0	1233213
2011	419925.3	361126.0	107524.0	1337106
2012	609679.3	299866.5	94074.00	1256783
2013	645067.3	483209.8	184050.0	147.125

Table 2: Mean and standard deviation of the field parameters based on each year (Figures in millions of Rial)

Year / Indices	2009		2010		2011		2012		2013	
	M	SD	M	SD	M	SD	M	SD	M	SD
Deposits	939730.3	355287.0	1834376.5	1040938.9	3253619.5	666540.8	3047077.3	1116345.3	3434830.3	1112472.2
Current deposits	2292612.7	596194.2	5559763.5	1514626.4	7395815.7	4705340.8	15279277	9099337.7	23879816.1	4670049.6
Long-term deposits	17104599.7	30501082.3	13323070.3	8598468.4	22000956.5	11035244	46626168.2	19677865	65195117.4	37259842.2
Other Deposits	105176.5	50309.9	575154.4	153198.9	636526.3	196205.8	1050285.2	313649	1131118.8	429975.4
Debt to the Central Bank	0	0	0	0	307387	62977.3	0	0	0	0
Liabilities to banks and credit institutions	0	0	0	0	1531283.2	1933130.5	3659133.8	1613059.5	4876465	2555381.3
Incomes	12715641.5	10371871.2	4278312	7172278	7268587	9086872	11074947.6	6204486	645067.5	9809251

Table 3: Mean and standard deviation of the expenditure areas based on each year (Figures in millions of Rial)

Year / Indices	2009		2010		2011		2012		013	
	M	SD	M	SD	M	SD	M	SD	M	SD
The Receivables of the Central Bank	7067979	9800073.7	2350327.2	751377.8	3512430.5	1822602.5	8700879.3	3712294	10588167.3	8752812.2
Receivables from other banks and credit institutions	8006489.9	11032648.4	3195513	705612.9	2718205	776626	10848886.1	7665296.7	20246652.3	5957185.6
Facilities- exchange contracts	4722469.8	2080306.4	4496797	1870046.4	3697590	1897089.6	3310288	1751610	2643970	1367593.8
facilities-participation contracts	19483957.3	13241173.3	14894979.5	10251914.5	15578493.9	15056273.4	990196.5	10928237.7	6866665.3	6028531
past due receivables	219833.5	305092.2	152135.8	72166.6	404716.3	237163.3	275465	60465.1	731541.2	402310.6
Other assets	4160149.6	8328410.3	883415.1	2856617.2	7619918.2	2503718.5	15544589.4	6772143.8	11435762.5	5260010.4
Costs	1665580	1258161	2013478	1639094	1641036	1513653	1036236	79700.6	625080.8	575554.3

REVIEWING THE NORMALITY OF DEPENDENT VARIABLE

To review the normality of the data about the bank "liquidity", Kolmogorov-Smirnov test was used.

Table 4: Summary of Smirnov test for normality test criterion variable (n=60)

Variable	Test statistics	Significance Level
Liquidity	1.5	0.03

Results of the above Table show that the distribution of the data for "liquidity" is not normal. Therefore, through changing data (from the log), the normality of the data was checked again, the results of which have been reflected in the following table:

Table 5: Summary of Smirnov test for normality test criterion variable after data conversion (n=60)

Variable	Test Statistics	Significance Level
Liquidity Logarithm	0.52	0.95

As it can be seen in the table above, the level of significance is larger than 0.05; in other words, the data for "cash" follows normal distribution.

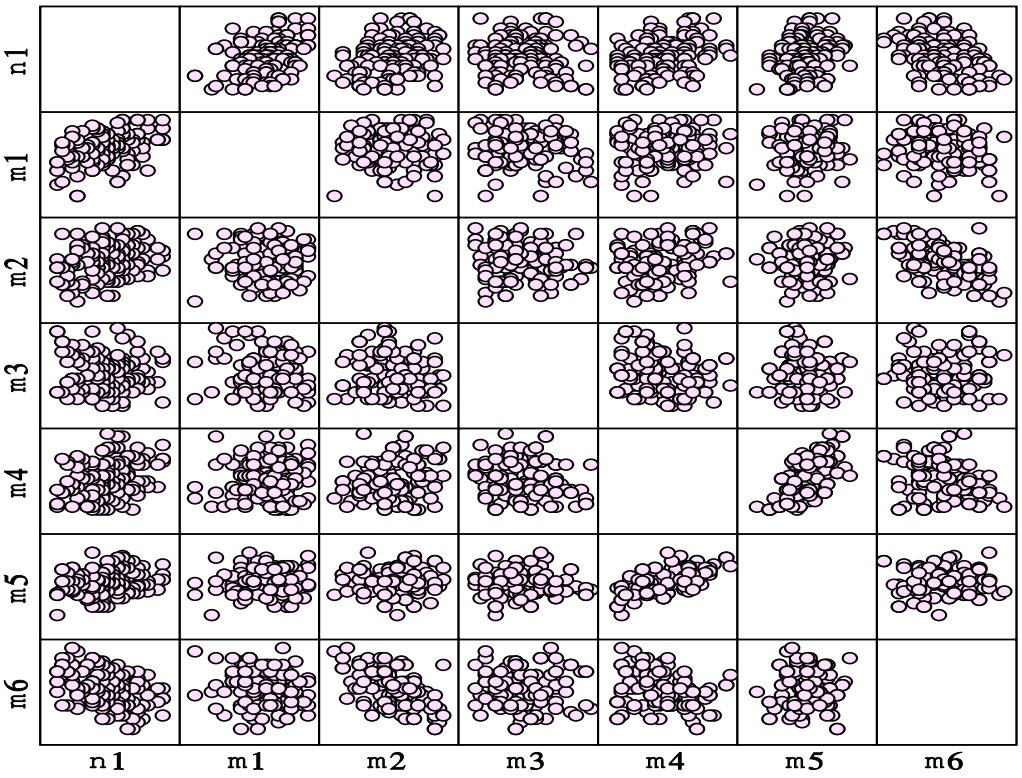

Figure 1: Diagram of the distribution about the indices of resources and liquidity of banks[1]

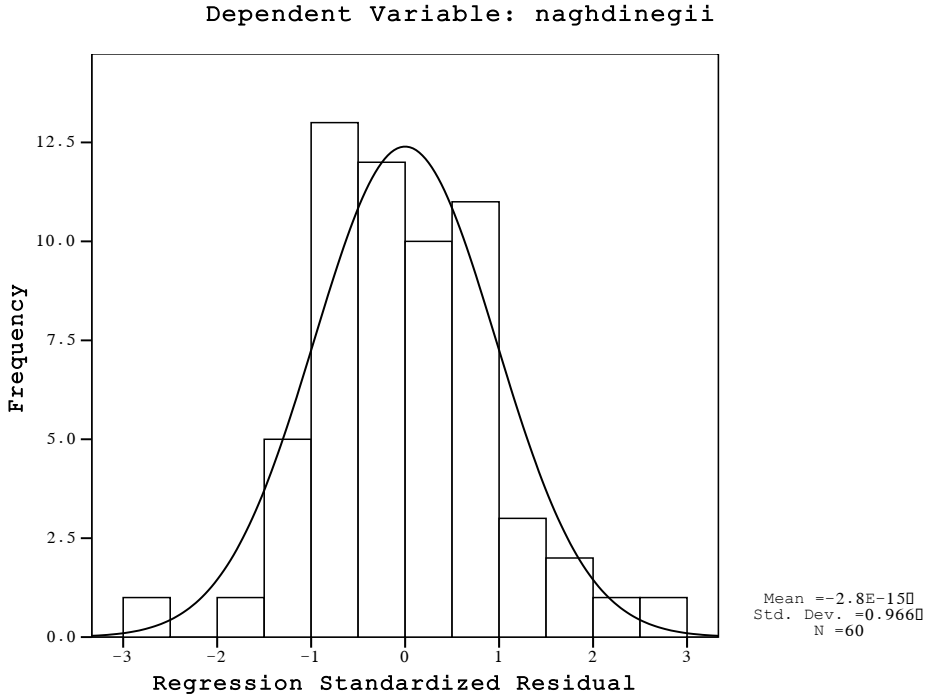

Figure 2: Histogram Diagram about reviewing the normality of the error term (first hypothesis)

[1] n1: Liquidity , m1: deposits, loans, m2: current deposits, m3: long-term deposits, m4: Other Deposits, m5: Liabilities to banks and credit institutions, m6: incomes

Table 6: Summary of regression test to review the impact of indices of resources on liquidity

Model	Predictor variables in the model	Correlation	The square of the correlation coefficient	Adjusted correlation	ΔR^2	Significance Level
1	Other Deposits	0.724	0.525	0.516	0.525	0.01
2	Other Deposits Incomes	0.800	0.640	0.627	0.115	0.01
3	Other Deposits Incomes Current deposits	0.82	0.672	0.655	0.033	0.02
4	Other Deposits Incomes Current deposits deposits	0.834	0.695	0.673	0.023	0.04

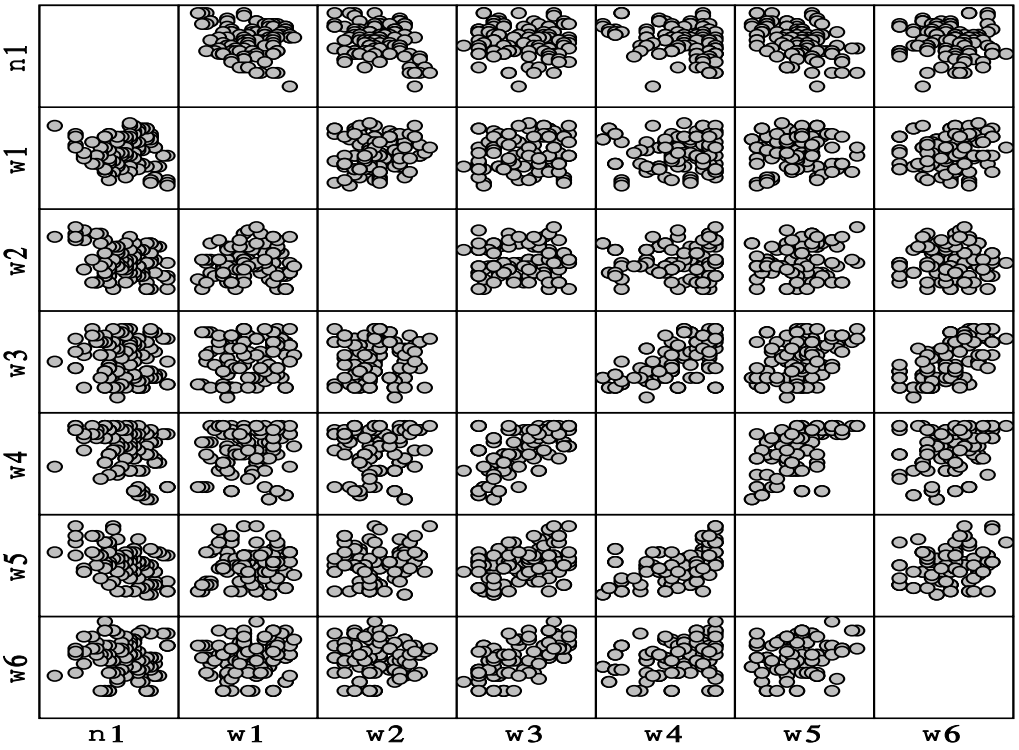

Figure 3: Diagram of the distribution of consumption and liquidity indices[2]

Table 7: Coefficients of each of the resource indices of banks in liquidity forecast

Variables in the model	Model	SE	(Beta)	t	Significance level
	Intercept	0.093		53.9	
Other Deposits	Coefficient	00	0.395	3.1	
Incomes	Coefficient	00	-0.405	-5.1	0.049
Current deposits	Coefficient	00	0.252	2.1	
Deposits	Coefficient	00	0.197	2.02	

[2] n1: Liquidity, w1: Facilities- exchange contracts, w2: Facilities-participation contracts, w3: the receivables of the central bank, W4: Receivables from other banks, w5: costs, w6: other assets.

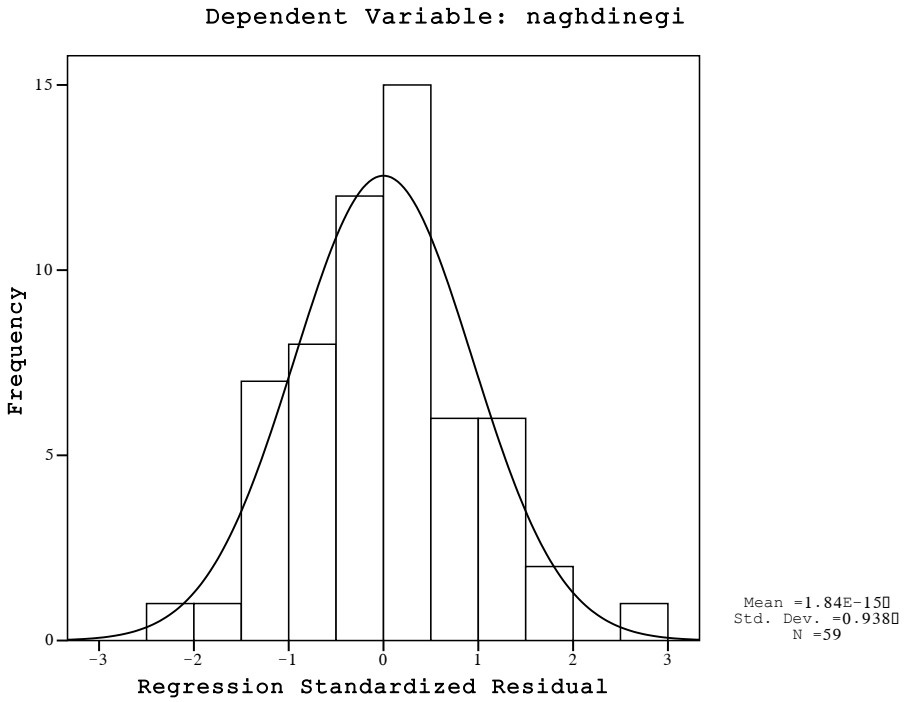

Figure 4: Histogram Diagram about reviewing the normality of the error term (second hypothesis)

Durbin-Watson statistic confirms the independence of errors (1.9).

Table 8: Summary of multivariate regression analysis to review the impact of consumption indices on liquidity

Model	Predictor variables in the model	Correlation	The square of the correlation coefficient	Adjusted correlation	ΔR^2	Significance level
1	Facilities - exchange contracts	0.524	0.275	0.262	0.275	0.01
2	Facilities - exchange contracts Facilities - participation contracts	0.656	0.430	0.409	0.155	0.01
3	Facilities - exchange contracts Facilities - participation contracts Costs	0.692	0.479	0.405	0.049	0.03

Table 9: Results of each of the liquidity indices in forecasting purposes

Variables in the model	Model	SE	(Beta)	t	Significance level
	1. Intercept	0.1		60.2	0.01
Facilities – exchange contracts	Coefficient	00	-0.370	3.6	0.01
Facilities - participation contracts	Coefficient	00	-0.357	3.4	0.01
costs	Coefficient	00	-0.234	2.3	0.03

THE FIRST HYPOTHESIS TEST RESULTS

Independence of errors has been reviewed using Durbin-Watson statistic that the amount is equal to 1.75.

In model 1, the relationship between the "other deposits" and "liquidity" is estimated to be equal to 0.724. In other words, "other deposits" alone explains approximately 52.5 percent of the changes about the "liquidity" of Shahr Bank (R2=0.525). In model 2, when the "income" is added to the model, R2 increases to 0.627. In other words, approximately 62.7 percent of the variance of "liquidity" of banks is explained by a linear relationship with the "other deposits" and "income". The share of "income" is approximately equal to 11.5 percent. Accordingly, Models 3 and 4 also makes clear that the share of "current deposits" and "Deposit loans", in explaining the "liquidity" of Shahr Bank, are 3.3 and 2.3 percent, respectively.

As it can be seen, "long-time deposits", "debt to the Central Bank" and "liabilities to banks and credit institutions" variables have been omitted from the regression model because they do not have effect on increasing or decreasing the "liquidity" of banks.

As it can be seen, the role of "current deposits," "loan funds," and "other deposits" in liquidity prediction is increasing, and the role of "income" is decreasing.

THE SECOND HYPOTHESIS TEST RESULTS:

The results of the above table indicate that the variable "facilities- exchange contracts" has been entered into model as the first variable so that the observed correlation between "facilities- exchange contracts" with the criterion variable (liquidity) is equal to 0.524. Around 27.5 percent of changes of "liquidity" of banks relate to "facilities-exchange contracts". This figure for the "facilities-participation contracts" and "costs" is decreased 15.5 and 4.9 percent, respectively. As it can be seen, the variables of " receivables of the Central Bank", "receivables from other banks", "past due receivables of facilities" and "other assets" have been omitted from the regression model because they have not had a significant effect on the "liquidity" of banks.

F statistics also showed that the regression model of the study, consisting of 7 predictor variables and a criterions, is a good model (p=0.01, 55, df=3, f=16.8).

Criterion variable: liquidity

According to Table (9), by increasing a standard deviation in the "facilities- exchange contracts", "facilities-participation contracts" and "costs" decreased 0.370, 0.357, and 0.234 standard deviation of "liquidity" of Shahr Bank.

CONCLUSION

Liquidity to banks is part of assets without return whose optimal management requires special grace, because, on the one hand, there should be enough cash available in the bank that is responsive to the customers' requirements and, on the other hand, extra liquidity should be properly estimated and invested to be profitable enough. So, better understanding of the liquidity system and its input and output should be acquired. Resource and consumption components are each associate with the liquidity of banks in some ways and it is necessary to identify their impact on the liquidity so that, by better and more accurate control over them, one can prevent the problems of liquidity.

According to a study by researchers, other deposits, current deposits, and deposit loans have positive impact on bank liquidity; i.e. by increasing these three types of deposits, bank liquidity increases and this as a sign for the excess investment of liquidity; and banks will be able to invest surplus liquidity.

Also, the results show that by increasing the amount of revenues, banks' cash reduces; the reason is that when a bank's income increases, it will be able to meet the needs of customers and does not need to keep large amounts of cash; and since income is part of the bank's resource, so, the bank invest it with greater confidence; this issue will have a negative impact on the bank's liquidity in long-term.

Facilities which include two types of exchange contracts and participation agreements have negative influence on liquidity; this is obvious because the facilities are paid from the liquidity of banks and the receivers take it out of bank and invest in another sector. Bank should also monitor facilities to ensure the collection of receivables.

Costs also reduce the amount of liquidity which, according to its coefficient in the model, its impact is less than the facilities. Costs relate to administrative costs, consumption costs of the branch such as electricity, water, etc. which drain liquidity from the bank.

Other factors of the consumption components include: receivables from the Central Bank, receivables from other banks and financial institutions, past due receivables, other assets, do not have a significant impact.

The results of current study is to some extent consistent with the research has so far been done in this area. Arab Mazar Yazdi *et al* [6], after studying the relationship between debt-assets combination and liquidity risk, came to the conclusion that the amount of liquidity is affected by debt-asset combination; the results approved this subject. This research is against what has been done by Akbari and Siavash. The result of their study showed that the liquidity of Bank Tose'e Saderat Iran relate with the independent variables of deposits, other deposits, receivable deposits from banks, debt the Central Bank, facilities received from the Fund currency investments and other resources, incomes, other facilities and bebtors due to document credits and guarantees. Debt to the Central Bank in Bank Tose'e Saderat Iran is one of the factors that affects the liquidity.

From a practical and functional viewpoint, this study can help top bank managers and guide them in an optimal management of liquidity of the bank. For example, the regression model shows that liquidity is greatly affected by other deposit compared to current deposits; so current deposits are less relied on and the liquidity of banks should not be taken out and invested in other sectors because to pay the issued cheque from the deposits, one needs the liquidity. Since these deposits do not have a due time, it is possible that their owners need the cash; so, banks should provide the cash they need.

REFERENCES

1.Ismal, R .," Assessment of liquidity management in Islamic banking industry". *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 3No.2,p.147-267 (2010)

2. Zhu, H.," Bank runs, welfare and policy implication". *Bank for international Settlment Working Paper*, No. 107.p 92-103 (2001)

3. Timothy, S. and Macdonald.," Bank Management ", *USA, Mason, Thamson*. p. 78(2003)

4. Moussavian, S, et al.," Liquidity management in Islamic banking, economic knowledge", t*he first issue, the third Consecutive, fall and winte*r, 35 -63.(2010)

5. "

Risk management and control Office of Tejarat Bank"., *Risk Management in Banking, Tehran, Tejarat Bank*(2007)

6. Arab Mazar, A. et al.," Theoretical Bases on Liquidity management in banks", *Proceedings of the Eighth Conference on Islamic Banking, Tehran, Institute of Banking*, 127-151. (1997)

7. Asna Ashari, A.," Estimating the function of the demand for money in deposits of banks in Iran", *Economic Policy and Research Journal*, Fall, 51, pp. 93-104 (2009)

8. Mehrabi, Leila., "Financing Tools Fucntions in the interest-free banking system", *New issues in economy*, summer, 132, 102-109(2011)