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**THE EFFECT OF LIQUIDITY IN AMOUNT OF INVESTMENT IN FOOD  
INDUSTRIAL COMPANIES LISTED IN TEHRAN STOCK EXCHANGE**

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**ABSTRACT**

One of the basic issues in investment is the amount of assets liquidity. The role of liquidity factor in evaluating assets is very important, because investors pay attention to this issue that if they are going to sale their assets, whether there is suitable market for them or not? So, one of the effective cases is the amount of assets liquidity. Therefore, in this research also has been dealt with the effect of liquidity in amount of investment in food industry companies listed in Tehran Stock Exchange with by panel data method.

The results of the research show that the amount of liquidity on investment variable which is obtained by dividing the amount of long term investment and or fix assets of companies on shares of fix assets, is positive and significant. On the other words, increasing the amount of liquidity has a kind of disclosure and information asymmetry and consequently reducing risk and improving investors' views to related shares and finally, it increases investment. The effect of the ratio of production index and company productivity on dependent variable of investment is also positive and significant and it indicates the fact that investors are very sensitive about company productivity. The effect of Toobin index (the ratio of market value to book value) on amount of investment is negative and significant; this means that whatever the crack of market value to book value is higher; a kind of risk will be ... that finally it reduces the investment. Two variables of working capital and total assets of company have had positive and significant effect

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on amount of company's investment. On the other word, two effective components on investment are the amount of working capital and total assets of company.

**Keywords: Liquidity, Investment, Food Industry in Tehran Stock Exchange**

## **INTRODUCTION**

Investors are one of the important elements of capital market. The final aim of each investor to spend its capital is to gain maximum profit and return of that. In order to persuade investors to invest the financial assets, the return of these assets should be more than other items. The value of one company is the function of profitability of that company's investment; therefore, the managements with the aim of maximize the investors' assets, should make interaction between investors expectations and suitable investment opportunities with identifying the effective factors on level of investment in order to attract the investors satisfaction and not losing profitable opportunities of investment (Fazari, 2000: 598).

One of the basic issues in investment is the amount of liquidity of assets. The role of liquidity factor in evaluating the assets is very important; because investors consider this issue that if they are going to sale their assets, whether there is suitable market for them or not? In any financial market with regard to wide and depth of market, there are varieties of tools for investing and investors select the assets based on return and risk of investment.

The rate of expected return of asset shows the lost return in condition of risk. One of the effective factors on assets' risk is their ability of liquidity. The role of liquidity factor in evaluating assets is the concept of risk of lack of assets liquidity in buyer mind which can cause to refuse the investor to invest. Whatever the risk of one asset increases, the investor expects to receive more return.

It is mentioned in theoretical analysis that liquidity gives permission to retail stockholders to become major stockholders and improves the salaries and advantages of managements and persuades conscious investors to trade. Most of the investors prefer high cash shares than low cash shares. The meaning of liquidity is merely facilitated in buying and sailing the assets. So, the risk of liquidity can be known as one of the factor in determining the expected return for investors. Selecting the criteria based on the company characteristics which can help to determine the amount of shares liquidity can be ended with suitable decision for investors. Liquid assets as well as cash money and its equivalents are easy to evaluate and it is also found very low information asymmetry.

While, low liquid assets are difficult to evaluate those contain investments and growth opportunities and the possibility to do final contraction about them and consequently, they have more absence of information asymmetry.

Inefficient markets have some defects those can affect the optimal investment level and finally, it is ended to process of more investment and or less investment. The more or less hypothesis of investment states that companies those invest less than optimal level, have less investment and companies

$$\frac{I_{i,t}}{K_{i,t-1}} = \phi \frac{I_{i,t-1}}{K_{i,t-2}} + \delta \frac{Y_{i,t-1}}{K_{i,t-2}} + \phi Q_{i,t-1} + \rho_0 \frac{CF_{i,t}}{K_{i,t-1}} + \rho_1 \frac{CF_{i,t-1}}{K_{i,t-2}} + \rho_2 \frac{\Delta WC_{i,t}}{K_{i,t-1}} + \rho_3 \frac{\Delta LTD_{i,t}}{K_{i,t-1}} + \mu Lsize_{i,t} + nD_{industry,i,t} + \alpha_i + \alpha_t + \varepsilon_{i,t}$$

I is the amount of long term investment and or fix assets of company and K is the share of fix assets (physical investment). Y is the productivity index and company productivity, Q is the Toobin index (the ratio of market value to book value), CF is the amount of liquidity (operational income), WC is the amount of flowing capital, LTD is long term debt, Size is total company's assets and D is the variable of industry type.

In this research, classified and audited financial data of active companies accepted in Tehran Stock Exchange those are in food industry sector is used. The reason of

those invest more than optimal level, will damage from the problem of more investment; therefore, recognition of important and effective factors on investment level in evaluating, recognition and determining optimal level of company's investment is very important (Tehrani and Hesarzade, 2009: 53).

## METHODOLOGY

In this research, panel data method by using of Eviews software is used to estimate the model. The research pattern is as follow:

selecting the mentioned statistical society is that Tehran Stock Exchange has comprehension information about the company's situation and their financial performance process and it can be said that it is only the information resource which can help us to access the financial information resources of companies and examine the research model. The used information is from the Stock and Rahavard software and for the period of 1993 to 2012 for 20 years. The companies of statistical society should have the condition mentioned in below.

1. The company must be a part of Investment Company of food industry.
2. They should have constant presence in stock during 1993 to 2012.
3. The end of their financial year should be the last month of each year and they haven't had any changes during the mentioned period.
4. In all studied years, their information and required data should be accessible at the end of financial year.

## RESULTS

The summary of descriptive statistics situation related to model variables after screening and deleting outlier by Spss 20 software is presented in **Table 1**.

In **Table 2**, the results of K\_S test for variable of nonlinear estimation discretionary accruals of selected companies are presented.

Due to the variable non-linear estimation of discretionary accruals, the significant level statistical K\_S is less than 0/05, therefore, the hypothesis of H0 based on the normality distribution of these variables in significant level of 95% is rejected and it indicates that company' investment variable does not have normal distribution.

In this research, Jonhson transformation vector is used for normalizing data and it is analyzed by Minitab 16 software. The results

of K\_S test after normalizing data process are as follow the **Table 3**.

According to the **Table 3**, since after normalizing data, the significant level of statistical K\_S for dependent variable is higher than 0/05 (0/605), therefore, the hypothesis H0 in the significant level of 95% is confirmed and it indicates that company investment variable after normalizing data has normal distribution.

### The obtained results of model estimation

At the beginning, it has been dealt with to study the stationary of variables by Levin Lin Chu test that as it is observed in **Table 4**, all research variables are stationary with one difference and therefore, the variables inserted in the model as differential form that the reason of stationary with one difference is using the long term period of 20 years in this research.

### The results of research hypothesis test

To determine whether using of panel data for estimating the model is efficient or not, F Limer test and to determine which method (fix effect or accidental effect) is more suitable for estimating, Hasman test is used. The obtained results of these tests are presented in **Table 5**.

According to the results of Chav test and its P-value (0/0000), the hypothesis H0 in the significant level of 95% is rejected and it

indicates that panel data method can be used. Also, due to the results of Hasman test and its P-value (0/46) which is higher than 0/05, the hypothesis H0 in significant level of 95% is rejected and hypothesis H1 is accepted. Therefore, it is essential to estimate the model with accidental effect method.

The results of estimating model are presented in **Table 6**. The estimation of model is as follow:

To study the significance of the whole model with regard to the probability of F statistical which is less than 0/05 (0/0000), whole model is confirmed with the significant level of 95%. The determine coefficient of the model also indicates that 44/58 percent of investment is determined by inserted variables in the model.

The results of table 6 are as follow:

One percent change in the variable of the ratio of investment to shares asset with one lag causes to increase the investment variable in food industry companies in amount of 0.035013.

One percent change in the variable of the ratio of production to shares asset causes to increase the investment variable in food industry companies in amount of 0.004062.

One percent change in Toobin index variable causes to decrease the investment variable in

food industry companies in amount of -1.48E-07.

One percent change in the variable of the ratio of liquidity to shares asset with one lag causes to increase the investment variable in food industry companies in amount of 0.006255.

One percent change in the variable of the ratio of liquidity to shares asset with two lags causes to increase the investment variable in food industry companies in amount of 0.001002.

One percent change in the variable of the ratio of capital inflow to shares asset causes to increase the investment variable in food industry companies in amount of 0.010070.

One percent change in the variable of long term debt to shares asset causes to decrease the investment variable in food industry companies in amount of -0.004305.

One percent change in the company size variable causes to increase the investment variable in food industry companies in amount of 0.008698.

One percent change in the industry type variable causes to increase the investment variable in food industry companies in amount of 0.012757.

Table 1: descriptive statistics of research variables

Toobin index	Production and productivity index of the country	Long term debt	The amount of capital in flow	The amount of liquidity	The amount of long term investment	The share of fix assets	Company size	
8837729	37753.44	3087855.	488070.7	-19529.28	13898.94	773006.2	712565.3	Average
1637984	473772.0	320546.0	21600.00	-2272.000	820.0000	27494.00	81333.00	Median
19366283	80306752	72254958	797141.0	648912.0	705243.0	23711032	16487337	Maximum
1900263	34697.00	11468.00	25378003	-511097.0	20540.00	0.000000	0.000000	Minimum
2798933	11366.108	1004346.3	292588.4	9512.165	5653.459	301432.2	215998.3	Standard deviation
5.722488	4.982705	5.150460	6.325998	-0.119219	9.494076	5.348459	5.350962	Skewness
43.45944	28.77747	30.49274	44.46591	20.88484	108.4712	32.81027	34.30912	Elongation
16353.57	7065.035	7973.125	17385.32	2959.300	106233.8	9278.453	10126.83	Jacoobera statistics
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	Probability

Table 2: the results of normality test of research dependent variable

Significant level (Sig)	Statistical (K_S)	Variable
0/000	2/401	Company investment

Table 3: the results of normality test of research dependent variable after normalizing

Significant level (Sig)	Statistical (K-S)	Variable
0/605	0/763	Company's investment

Table 4: the stationary of research variables

Result	Probability	Levin Lin Chu test	Variable
I(1) -stationary	0.0001	-57.5042	The ratio of investment to shares asset with one lag
I(1) -stationary	0.0001	-13.1427	The ratio of production to shares asset
I(1) -stationary	0.0001	-44.1425	Toobin index
I(1) -stationary	0.0001	-5.7452	The ratio of liquidity to shares asset with one lag
I(1) -stationary	0.0001	-41.422	The ratio of liquidity to shares asset with two lags
I(1) -stationary	0.0001	-9.24165	The ratio of capital inflow to shares asset
I(1) -stationary	0.0001	-58.6421	Long term debt to shares asset
I(1) -stationary	0.0001	-18.7545	Company size
I(1) -stationary	0.0001	-34.1542	The variable of industry type

Source: research calculation

Table 5: the results of Cahv and Hasman tests for model 1

P-Value	Statistical amount	Statistical	Number	Test
0/000	1/8416	F		F Limer
0/46	1/9614	X <sup>2</sup>		Hasman

Table 6: the results of research by GLS method

Dependent variable : investment				The number of company: 49
food industry companies				
Effect	P-Value	Statistical t	Coefficient	Variable
Positive	0.0026	3.063090	3190.796	Intercept
Positive	0.0240	2.491129	0.035013	The ratio of investment to shares asset with one lag
Positive	0.0374	1.985236	0.004062	The ratio of production to

				<b>shares asset</b>
<b>Negative</b>	<b>0.0455</b>	<b>-2.055845</b>	<b>-1.48E-07</b>	<b>Toobin index</b>
<b>Positive</b>	<b>0.0389</b>	<b>1.901106</b>	<b>0.006255</b>	<b>The ratio of liquidity to shares asset with one lag</b>
<b>Positive</b>	<b>0.0258</b>	<b>2.055574</b>	<b>0.001002</b>	<b>The ratio of liquidity to shares asset with two lags</b>
<b>Positive</b>	<b>0.0205</b>	<b>2.341146</b>	<b>0.010070</b>	<b>The ratio of capital inflow to shares asset</b>
<b>Negative</b>	<b>0.0311</b>	<b>-2.789342</b>	<b>-0.004305</b>	<b>Long term debt to shares asset</b>
<b>Positive</b>	<b>0.0058</b>	<b>4.242655</b>	<b>0.008698</b>	<b>Company size</b>
<b>Positive</b>	<b>0.0490</b>	<b>1.916472</b>	<b>0.012757</b>	<b>The variable of industry type</b>
<b>0/4458</b>	<b>Model determine coefficient</b>			
<b>1/9092 (0/0000)</b>	<b>Statistical <math>F</math> (P-Value)</b>			

## CONCLUSION

According to the results of research which show that the effect of CF the amount of liquidity (operational incomes index) on investment variable that is obtained by dividing I the amount of long term investment and or fix assets of the company on fix shares assets (physical investment), is positive and significant, it is recommended that to increase the investment, the amount of shares liquidity should be increased. On the other words, to increase the liquidity and consequently increasing investment, I the amount of long term investment and or fix assets of the company should be increased and fix shares assets (physical investment should be decreased.

Also, due to the results which show the effect of the ratio of production and productivity index of the company on dependent variable of investment is also positive and significant and it is recommended to increase investors,

the policies should be applied based on increasing company productivity.

Due to the results of research which show the effect of Toobin index (the ratio of market value to book value) on the amount of investment is negative and significant, for increasing investment, it is recommended the ratio of market value to book value should be decreased.

Also, due to the results of the research which indicate two variables of the amount of capital inflow and total assets of the company have had positive and significant effects on the amount of companies investment, to increase investment, increase two components of capital inflow and total assets are recommended.

Also, due to the results of the research which show the effect of the ratio debt on dependent variable is negative and significant, therefore, reducing debts ratio for increasing investment is recommended.

Also, with regard to the results of the research which indicate positive and significant effect of industry variable on the amount of investment, it is recommended to invest in the industry.

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