



## Evaluating the effect of fiscal policy on investment in companies admitted to the stock exchange in the conditions of financial friction, using the threshold panel model

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### ABSTRACT

In this research, the effects of fiscal policy on the investment in active companies of stock exchange in the conditions of financial friction evaluated. For this purpose, the data of 105 companies during the period of 2010 to 2018 is used. First, by using the threshold panel model, financial friction conditions were determined based on the non-linear relationship between the debt ratio and Tobin's Q index. In this regard, we saw three different regimes influencing the debt ratio on Tobin's Q, two regimes of low debt and average debt was statistically significant and had a negative effect, but the third regime was not statistically significant. Also, based on the threshold variable (debt ratio between 0.4836 and 0.6565), about 69.72 companies are in the average debt regime. The results of the research showed that the effective tax rate variable (representative of fiscal policy in the model) had a negative and significant effect on the investment index of companies. Therefore, financial policy has a limiting effect on the investment of companies. On the other hand, company size indicators have a positive and significant effect and debt ratio index had to the extent that companies operate in financial friction conditions. To the extent that companies operate in financial friction conditions, their access to credit reduced, as a result, the role of tax and debt ratio in influencing investment respectively, it will be more noticeable and pale.

**Keywords:** Fiscal policy, Investment, Effective tax rate, Tobin's Q, Threshold panel

## 1. Introduction

Enterprise investment is very important in terms of both microeconomics and macroeconomics. From the point of view of microeconomics, in order for a company to continue its life and growth, it needs new investment during its activity period for this purpose; financial forecasting discussed based on internal and external sources. From the perspective of macroeconomics, investment fluctuations are the cause of a large part of cyclical fluctuations in production and income, and most economists attribute long-term economic growth to high investment rates. According to Modigliani and Miller's theory (1958), in an efficient market, the amount and type of investment of companies is independent of the structure financial and their liquidity. However, issues such as capital rationing due to financial friction and related problems. Representing; That is, the preference of managers for personal interests instead of obtaining more cash returns, the sensitivity of investors has increased funding (Biddle and Hilary.) On the other hand, the capital market with its undeniable role in Economic growth and development of the country is a medium for companies to get the capital they need by referring to it provide. Therefore, the management of this market is important for the government. In addition, the effects of economic policy the government is more visible in the stock market. Therefore, after the Great Recession of 2008-2009, the question of the effects of politics what is financial if there is financial friction? It has been seriously discussed. If some governments with power during the last two periods, they resorted to financial incentives to fight the crisis.

Therefore, the broad view that markets. It has been suggested that finance has played a decisive role in economic problems (Fernández-Villaverde). According to what was stated in this article, the effect of financial policy on investment in listed companies Securities are evaluated in terms of financial friction.

## Research literature

Classical models assume that there are perfect financial markets in which companies can obtain the required resources borrow investment projects. Nevertheless, alternative models have limitations on the amount of external financing they create (Hansen, 1999) Therefore, their assumption is that companies

face frictions in financing are (Cooper and Ejarque, 2003). A comprehensive measure of financial friction, the difference between firms' returns on capital -plant and equipment- and the market cost of capital. Which is adjusted by the difference between the final product of capital for profit and loss of capital, it is measured in that capital and short-term interest rate (Hal, 2013).

An important empirical question is whether there are firms that behave as if they are covered, are there such frictions or not? Fazzari and et al (1998) to answer this question, to regression estimation separate investments have been made for limited and unlimited companies, to see if the effects of the flow are different, is there simultaneous cash or not? So that the existence of financing restrictions shows that cash flow, the company has a positive relationship with its investment rate only when the company has restrictions on face external financing. If a company is, free to borrow in foreign financial markets, cash flow for investment it will be significant (Fazari et al., 1988). In order to expand the idea of estimating two separate regressions for Investigating financial constraints, Hansen (1999) and (2000) from threshold regression in panel data (PTR) to investigate whether financial restrictions affect the investment procedures of companies or not. According to company classic theory (Modigliani-Miller theory). Financing should not have any allocation effect.

The government's tax revenues are among the fiscal policy tools that by making changes in them economic activities are limited or expanded. Some researchers showed that with the increase in the tax rate, company managers tend to reduce the dividend income paid to shareholders significantly and the resulting amount is reinvested in the company (Holmen, et al, 2008). To use the tax rate as a fiscal policy tool at the micro level (companies) it is necessary to calculate the effective tax rate at the level of different companies. Effective tax rates can be divided into two general categories: "average" effective tax rates and "marginal" effective tax rates. Average rate is defined as the amount of tax paid (or accrued) as a percentage of income. Margin rate is a percentage of the expected return on additional investment that is expected to be paid as taxes. Marginal rates are generally designed to measure incentives to invest in new assets, and to expect future income depends on investment and expected inflation. While average effective rates tax are more useful for

measuring the distribution of tax burden and cash flows from previous investments (Spooner, 1986).

#### **Research background**

Fernández-Villaverde (2010) in one of his articles examined fiscal policy in a model with financial friction in the American economy has set. His results indicate that in the conditions of financial frictions, increasing government costs can be a tool be more powerful than tax cuts to stimulate production in the short term. A central mechanism for this the finding is due to the effects on real wealth created by the Fisher effect and the endogenous evolution of the financial insurance premium caused by each it was a financial shock.

Tarassow (2015) in his articles on the limits of financial investment in Germany using the threshold panel model at the level has checked the company's data. In this article, he hypothesizes that changes in the financial supply side explain the atmosphere low investment of private companies in Germany helps, has tested. with special emphasis on Small and medium companies with the assumption that these companies face more limited access to external sources of funds, and The use of a threshold panel model has advanced the work. The results show that there is a positive relationship between cash flows and fixed capital accumulation. In addition, companies that are financially fragile, they rely more to the accumulated profit. Therefore, it emphasizes the role of financial friction in limiting access to credit for companies. So limited access to credit also leads to persistent insufficient aggregate demand and forces firms to reduce investment and adjusts additional labor.

Zwick and Mahon (2017) in a study based on evidence of business investment drivers in a selection of companies in America; they want to answer the question whether financial friction strengthens the fiscal policy. Their research results is based on estimating the causal relationship of temporary tax incentives on equipment investment with policy change depreciation of the principle of investment momentum indicated that First, depreciation, investment reward on average between 2001 and 2004, it increased by 5.18% and between 2008 and 2010 by 31.2% .gave. Third, companies react strongly when this policy creates immediate cash flows, But when this policy only benefits them in the future, they do not respond at all. Estimation results in conditions it has

been adapted that the companies were unaware of the binding financial restrictions in the future.

Hirakata and Sunakawa (2019) in a research on the relationship between financial frictions, misallocation of capital and changes structure in the Japanese economy. Their findings showed that financial frictions reduce the real interest rate and increases the excess demand for borrowing, and as a result, it causes misallocation of capital. Therefore, they have shown that financial frictions and misallocation of capital may have been actually impede structural change.

Min et al (2022) in an article measuring the effects of monetary and financial policy shocks on investment have paid domestically in the Chinese economy. The results of research on the effect of financial policy indicate that Government spending shocks has no significant effect on total investment or its components. Since this research is not included in the financial friction conditions, we saw that the government's spending policy has limited effects on strengthening have domestic investment in China.

Shakri and Efhemi (2013) in a study paid on the estimation of Tobin's q investment function in the conditions of financial friction in Iran. They stated in the research results that the positive effect of Tobin's Q variable on investment among companies Iran's stock market is confirmed with high significance, but it seems due to the special conditions of investment in Iran Investigating financial frictions requires extracting theories that are suitable for the country's special investment conditions.

Shahbazi et al. (2012) in a research based on empirical evidence in Iran, the relationship between monetary and financial policies and the efficiency of the stock market has been investigated. The results of the research indicated that the efficiency hypothesis of Iran's stock market It is not accepted for financial policies, this means that stock market participants pay attention to information are not available in the field of financial policies, However, this information can play a role in determining stock returns have meaning.

Mohseni Zenozi et al. (2014) in their study they paid to investigating the effect of financial policy on asset prices and their uncertainty in Iran. The results of the study indicated that government spending had a significant effect on the price of each asset and is considered one of the important factors to explain the fluctuations of changes. In addition, the results showed that expenses of the government have a negative

relationship with stock prices and exchange rates, but a positive relationship with housing prices.

In a study, Izadhakhasi and Arab Mazar (2015) have analyzed the effects of efficient fiscal and tax policies on private investment in Iran, with an emphasis on corporate income tax and the government's fiscal discipline. The results obtained of the stimulus response functions indicate that the occurrence of a positive shock in financial and tax variables at the beginning of the period, it increased and then decreased the ratio of private investment to GDP. In addition, the results show a negative relationship between financial and tax variables and the ratio of private investment to GDP in the long run.

Rajizadeh et al. (1400) in an article paid on the effect of financial friction on the speed of stock price convergence in Iran. Because investors, in the presence of financial friction, are not able to fully allocate risk reduce the company through diversification, therefore, it is expected that financial friction speed up price convergence reduce the stock. If the results of the research indicate that between the financial friction and the speed of convergence there is a negative and significant relationship with stock prices.

## Research Methods

Heterogeneity is a common problem with panel data; because the fixed effect model or the classic random effect of heterogeneity only in them reflect the width of the origin. The threshold model shows the structural gap in the relationship between the variables and therefore for Non-linear modeling is common in time series, (Tong, 2012. Girma, 2005. Rousseau and Wachtel 2011). A fundamental problem in threshold regression is determining the threshold value. The threshold value must be estimated; it means theory and the conclusion of the economic standard is not valid in this field. Hansen (2000) by presenting a theory of distribution, which inference accurate on threshold models makes it possible, has a fundamental contribution in this matter, according to Hansen (1999), the single-threshold model of the panel for the influence of the effective factors on selected investment from the companies admitted to the Tehran Stock Exchange are made as follows:

$$(1) \quad INV_{it} = \alpha_i + X_{it}(\phi_{it} < \lambda) \beta_1 + X_{it}(\phi_{it} > \lambda) \beta_2 + \varepsilon_{it}$$

The above relationship,  $i$  represents different companies and  $t$  represents different times.  $INV_{it}$  Badge is the firm's investment, and  $\alpha_i$  represents the fixed effect, this shows the heterogeneity of investment.  $X_{it}$  is the vector of variables that are assumed to affect investment,  $\phi_{it}$  is the threshold variable,  $\lambda$  is the threshold parameter that divides equation (1) into two regimes  $\beta_1$  and  $\beta_2$ , depending on whether the threshold variable is smaller or larger than the threshold parameter, and finally,  $\varepsilon_{it}$  is the disturbance term, which is assumed to be white noise. The above relationship can be also wrote as follows:

$$(2) \quad \begin{aligned} INV_{it} &= \alpha_i + X_{it}(\phi_{it}, \lambda) \beta + \varepsilon_{it}, \\ X_{it} &= \begin{cases} X_{it} I(\phi_{it} < \lambda) \\ X_{it} I(\phi_{it} \geq \lambda) \end{cases} \end{aligned}$$

Where  $I(\cdot)$  is an index function.

Models with a second or higher threshold can be developed through the extension of the single-threshold model described above a simple estimation method. The next problem is determining the significance of the threshold variable. If the threshold parameter ( $\lambda$ ) is known therefore, the model is the same as the ordinary linear model. Conversely, if  $\lambda$  is not known, then potential  $\lambda$  estimators they are non-standard. Hansen to solve this problem using bootstrap techniques 2 approximate critical values for the  $\hat{\lambda}$  estimator (Hansen, 1999).

The threshold variable should be an exogenous indicator of a company's access to external financing. A natural candidate, level debt exists. it seems reasonable to believe that banks are reluctant to lend to indebted companies arrives. This choice is similar to that of Hu and Schiantarelli (1998) who performed a switching regression using. They estimate the debt-to-asset ratio as a variable in their switching equation.

Estimated model and selection of research variables based on the models of Hansen (1999), Fernández-Rodríguez et al. (2005) and Vo (2019). So that the research variables are as follows:

$INV_{it}$  is the dependent variable of the research and represents the net investment of company  $i$  in year  $t$  and is equal to the book value of tangible fixed assets in the current year minus the book value of the fixed assets of the previous year.

$ET_{it}$  indicates the effective tax rate of company  $i$  in year  $t$ . To calculate the effective tax rate from the tax expense division it is used annually on pre-tax income.

$E_{it}$  represents the size of company  $i$  in year  $t$ , which in this research is measured from the natural logarithm of assets the company is used.

$Q_{it}$  is the Q-Tobin index of company  $i$  in year  $t$  and represents the daily value to the book value of assets.

$LEVT_{it}$  represents the financial leverage of company  $i$  in year  $t$  and is equal to the ratio of total liabilities to total assets.

The statistical population of the research includes all active companies in the Tehran Stock Exchange, which during the end of the fiscal year 2013 to be active in the stock market by the end of the fiscal year 2018. Among the companies active in the Tehran Stock Exchange and based on the criteria entry and exit below, 105 companies were selected as a sample, which information related to indicators research variables about them are accessible. The entry and exit criteria of the samples are:

- 1) The financial information they need and the criteria used in making variables about them are available.
- 2) The companies have been admitted to the stock exchange until the end of March 2018 and have not been withdrawn from the stock exchange until 2018.
- 3) The financial year of all companies should be the end of March.
- 4) The relevant company has not changed its financial year during this period.
- 5) Do not belong to financial intermediation (investment) companies.

## Research findings

### Stationary test

Considering that Chan (1993) and Hansen (1999) used the least squares method to estimate regression thresholds. Therefore, the expansion of the traditional method of least squares estimation, Hansen panel threshold regression model (1999) also requires this is that the variables of the model are significant in order to avoid spurious regressions. So first, the unit root test for Panel data is researched. According to the panel nature of research variables from Levin, Lin & Chu (LLC)'s unit root tests and Im, Pesaran & Shin (IPS) have been used.

As can be seen in Table (1), all variables are at the level of significance based on stationary tests. So Panel threshold regression models can be used.

**Table 1: The results of the stationary tests of the research variables**

variables	llc test in $i(0)$		ips test in $i(0)$	
	test statistic	prob.	test statistic	prob.
INV	-13.2740	0.0000	-3.8149	0.0001
SIZE	-8.7207	0.0000	-6.5426	0.0000
LEV	-17.7579	0.0000	-8.6817	0.0000
Q	-14.1228	0.0000	-6.8640	0.0000
ET	-16.4901	0.0000	-5.0771	0.0000

Research findings

### Pool ability test

Due to the panel nature of the research data, it is necessary to conduct tests to ensure the applicability of panel models. The first test that is referred to is the combinability test (1) choosing between estimating separate regressions for each country and the estimate is a pooled regression for all countries). This question will be answered in this test whether the data is aggregated in nature or we are dealing with panel data naturally. A bound model is a composite model that it shows a behavioral equation with the same parameters over time and in different countries. But the unconstrained model represents the behavioral equation with different parameters over time or in different countries (Baltagi, 2001:53). Baltagi recommends relying on the Roy-Zellner test for collinearity, unless you are sure that the basic assumption of Chow's test is correct. Therefore, the following model is considered:

$$(17) \quad y_{it} = \alpha + \beta_i X_{it} + \varepsilon_{it}$$

Where  $\varepsilon_{it}$  is the stochastic error and  $\alpha, \beta_i$  are the model coefficients. Null hypothesis Roy-Zellner test applied to the slope coefficients are in the form of equation (18):

$$(18) \quad \beta_i = \beta$$

Assuming that  $\varepsilon_{it} = \eta_i + u_{it}$ , where we have  $\eta_i = N(0, \sigma_\eta^2)$  and  $u_{it} = N(0, \sigma_u^2)$  (Vaona, 2008).

**Table 2: The results of the Pool ability test**

statistic	test statistic	prob.
$\chi^2(408)$	1056.77	0.0000

Research findings

Stata software, according to Wald's test, which is normally distributed with 408 degrees of freedom, the null hypothesis of the test, it rejects combinability, which is in accordance with the results of Baltaji (2001).

**Diagnostic tests**

It is natural to check the strength of the proposed model and evaluate the goodness of fit of the research model. In this, the field of three tests is presented. The first test is related to examining the hypothesis of equality of slope coefficients can be between regressions. This test corresponds to the panel threshold model; because the rejection of the hypothesis of homogeneity of the slope is evidence of non-linearity. Being (and the possible threshold) in the set of information used in the estimation of the model

provides (Pesaran, and Yamagata 2008). From the estimates presented in Table 3, it can be rejected that the homogeneity of the slope is zero at the 99% confidence level. According to these results, it should be emphasized that at least one of the variables of the model is highly nonlinear and so, the approach of the research modeling, which is the panel threshold model, justifies.

The next tests regarding the robustness of the model and data recognition are the Brosh-Pagan independence test (LM 3) and the adjusted parent to examine group heterogeneity in the regression model is a fixed effect (Green 2001). The results of these tests are presented in Table 4. These findings confirm that the data set with failures structurally, extreme values and sudden jumps up or down are defined.

**table 3: the results of the slope homogeneity test (non-linearity of the model)**

statistic	test statistic	prob.
delta	3.107	0.002
adjusted delta	5.381	0.000

research findings

**table 4: results breusch-pagan and group heterogeneity tests**

statistic	test statistic	prob.
chi-square statistic (lm test)	195.64	0.0000
chi-square statistic (adjusted wald test)	11795.64	0.0000

research findings

**Estimation results of threshold models**

Financial friction causes a gap between the cost of internal and external financing of the company. A small transaction fee in providing external financial resources, it can indicate the existence of financial frictions of the company. Supply cost gap finance replaces the assumption of the completeness of the internal and external sources of financing the company, which is the basic assumption neoclassical investment is rejected (Kaplan and Zingales). Therefore, in this article, the threshold theory, proposal applied by Hansen (1999, 2000) and it is assumed that the debt ratio as a variable Independent and threshold with Tobin's Q ratio have an asymmetric non-linear relationship. First, if there is a threshold effect have, the existence of double threshold and the effect of single threshold should be tested.

This research follows the bootstrap method to obtain approximations of the F statistic, and then the rejection

probability values calculates the null hypothesis. The bootstrap method is repeated 300 times for each of the panel threshold tests table (5) presents the experimental results of the test for the effects of single threshold and double threshold.

According to the results of table 5, the threshold effects test for single-threshold and double-threshold models at the 5% significance confirmation level is placed. Therefore, we conclude that the non-linear relationship is dominant in the research model. For the rest of the decomposition and analysis, we use the double threshold model.

According to table 5, the value of the threshold parameter and according to table 6, the slope of the two-threshold model based on the effect of the threshold variable (debt ratio) is represented by Tobin's Q ratio variable, which divides all observations into three regimes. The estimation model of the experimental results can be shown as follows:

$$(3) \quad Q_{it} = \begin{cases} \mu_i - 0.1148LEV_{it} + \varepsilon_{it} & \text{if } LEV_{it} \leq 0.4836 \\ \mu_i - 0.1344LEV_{it} + \varepsilon_{it} & \text{if } 0.4836 \leq LEV_{it} \leq 0.6565 \\ \mu_i + 0.0207LEV_{it} + \varepsilon_{it} & \text{if } LEV_{it} \geq 0.6565 \end{cases}$$

The two estimated values for the threshold variable, i.e. 0.4836 and 0.6565, divide the observations into three regimes, which it depends on whether the threshold variable (LEV) is smaller or larger than the value of the threshold parameters. Regimes with gradients different regressions are distinguished by -0.13, -0.11 and 0.02. In the first regime, where the debt ratio is less than 0.4836, The estimated coefficient is -0.11, which is significant at the 1% level and shows that Tobin's Q increases by 1% in the ratio Debt will decrease by 0.11%. In the second regime, where the debt ratio is greater than 0.4836 but less than 0.6565. The estimated coefficient is -0.13, which is significant at the 1% level and shows that Tobin's Q increases by 1% in the ratio Debt will decrease by 0.13%. The ratio in the third regime, where the debt ratio is greater than 0.6565, statistically was not significant. These results show that there is a non-linear relationship between the debt ratio and Tobin's Q ratio, and therefore there is financial friction is confirmed. Estimates of 0.4836 and 0.6565, respectively, are smaller and larger values in the empirical distribution are threshold variable (debt ratio). Therefore, three categories of companies with point estimates are companies that have "low

debt" (debt ratio less than "0.4836, average debt" (ratio debt is between 0.4836 and 0.6565 and "high debt" (debt ratio greater than 0.6565). By comparing regimes Low debt and high debt with medium debt regime, we find that the medium debt regime increases Tobin's Q more than others Increases regimes. Since the slope of the panel threshold does not have a fixed value. If in the low debt regime, -0.11 is, while in the regime of medium debt and high debt, the slope is -0.13 and 0.02, respectively. Therefore, the results to the clarity shows that the relationship between the debt ratio and Tobin's Q (i.e. the slope value) is proportional to the different changes in the debt structure is different and there is a downward trend. These estimates are consistent with the theory of financing constraints has it? Therefore, the existence of financial friction is confirmed in the research model. The significant difference of this research with the studies of Fazzari et al. (1988) is that in this article, the amount of financing restrictions instead of assuming the existence of such restrictions Some have been quantitatively investigated.

Based on the likelihood ratio statistic (LR1), the confidence interval for the LR statistic for single-threshold and two-threshold models diagram (1) shows the dynamic of the threshold variable. According to the chart (1) is clear that single-threshold and two-threshold models are significant and confirmed.

**Table 5: Threshold effect test results**

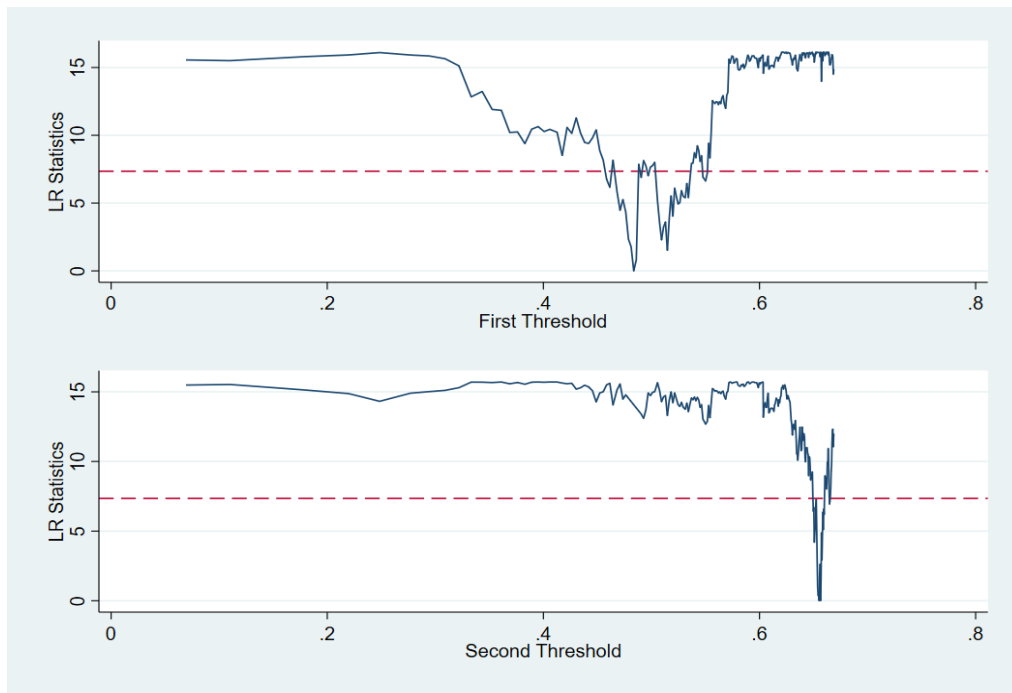
threshold	threshold estimator	f-stat.	prob.	crit10	crit5	crit1
single	0.4836	22.5	0.0100	14.0842	16.6249	21.3131
double	0.4836 , 0.6565	15.81	0.0267	12.3899	14.1408	19.1494

Research findings

**Table 6: The results of estimation of two-threshold panel model (Dependent variable INV)**

Variables	Coefficient	t-stat.	Prob.
SIZE	0.1120	4.38	0.000
LEV	-0.0279	-3.63	0.000
ET	-0.80111	-2.37	0.016
_cat#c.Q			
0	-0.1148	-2.77	0.007
1	-0.1344	-5.40	0.000
2	0.0207	0.91	0.342
_cons	4.24716	80.32	0.000
F(104, 834) = 12.69		Prob> F = 0.0000	

Research findings



**Chart (1): LR statistics for threshold effects of single and double threshold models** Source: research findings

According to the table, the 6 independent variables of the research, i.e. the effective tax rate of companies, have a negative effect on the dependent variable (investment). In addition, it is meaningful. In the interpretation of this significance, it can be stated that tax increases the cost of using capital and by reducing the desired capital; it will have a negative effect on the investment of companies. According to research results, taxes on the companies, the real flow of the company, i.e. investment, has been negatively affected, as well as the resource allocation effect will have. That is, the increase in tax revenue comes at the cost of reducing.

In estimating the coefficients of the control variables shown in Table 6, the size of the company is significantly Investment has a positive relationship. In this regard, it can be said that in high value companies, policies financing for reasons such as more pledges by reducing financial friction, increasing investment efficiency gives. But the financial leverage has had a negative and significant impact on the company's investments. This result is consistent with the opinion of Myers (1977); as debt increases, the incentive of the shareholder-manager coalition in control of the firm to invest in opportunities with positive net present value

decreases, as the benefits of such investments are transferred to creditors rather than to shareholders. As a result, companies with high leverage compared to companies with lower leverage will have fewer growth opportunities.

## **Conclusion, discussion and comparison**

In this article, an attempt was made to determine the effects of financial policy on the investment of active companies in the stock exchange financial friction conditions should be evaluated. For this purpose, for the financial policy variable at the level of companies from the index the effective tax rate was used for research companies during the years 2010-2018. To check financial friction, based on the studies of Fazzari et al. (1988) and Hansen (1999), was helped by the application of the threshold panel model became. The results indicated the existence of three different regimes influencing the debt ratio on Tobin's Q, two regimes of low debt and average debt was statistically significant. By comparing the low debt regime with the medium debt regime, these results were obtained it turns out that about 45.45 and 69.72 percent of

companies are in low debt and medium debt regimes, respectively. Also, the low debt regime reduces Tobin's Q by about 0.02 units less than the medium debt regime. So, the results it clearly shows that the relationship between the debt ratio and Tobin's Q is non-linear and the existence of financial friction from this point of view it is proved.

The research results showed that the effective tax rate variable had the greatest effect on the dependent variable in the model. Hereof we remind that the greater the financial friction in limiting access to credit for companies, the greater the role Taxation will be more prominent in reducing investment. According to the results of the research, it was observed that the tax on Companies in Iran's economy have a negative effect on private sector investment. Therefore, tax exemptions and rates Lower taxes can encourage private sector investment. On the other hand, considering that taxes, the most effective tools are of the government's financial policies, therefore, it is suggested that the government use declining tax rates or various tax exemptions have reduced the effective tax rate to increase investment with tax savings. The result of this action in the following periods will encourage investment and consequently increase production and finally income government taxes will increase.

On the other hand, the small and negative coefficient of the debt-to-investment variable ratio indicates that the higher the leverage financial increase (decrease), that company will have less (more) investments. Also It indicates that companies have used more borrowing in order to meet the company's financial needs than increase investment. These results are also consistent with the preference theory in financing. Because on the other hand, information asymmetry It causes financial friction between managers and external investors; Therefore, it causes companies fund investment opportunities first from domestic financial sources and then from borrowing. Therefore, it is recommended financial managers should carefully consider the debt ratio of companies before making investment decisions.

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