Investigating the Effect of Ownership Structure on the Sensitivity of Corporate Investment in Tehran Stock Exchange

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Abstract

The main objective of this study was to examine the impact of ownership structure on corporate investment in the Tehran Stock Exchange’s sensitivity. The goal of research in the field of applied research, and given that the research library research methods have been used, it can be stated that research on the nature and method of research is descriptive. According to the realm of spatial and temporal study population consisted of all companies listed on the stock exchange in the period from 2008 to 2012, which is done by sampling methods, 85 companies were selected as sample. In this changing ownership structure with two mechanisms of concentration of ownership and the Shareholders as independent variables measured. The composition of the shareholders by using the four indicators of corporate property, property management, and real property assessed. Hasty institutional property investment Euler equation based on measured and firm size as a control variable is considered. Thus, a primary and two secondary hypotheses was formulated hypothesis. And relevant data were collected. To investigate the hypothesis in this study Eviews software is used. The results of the analysis showed that there is no significant relationship between shareholders and investing sensitivity, but there is a significant relationship between ownership concentration and sensitivity investment.

Keywords: investment cash flow sensitivity, ownership structure, corporate ownership, managerial ownership, institutional ownership, true ownership.
Introduction

Ownership structure is an important issue in corporate governance. Previous research has shown that an appropriate ownership structure varies according to the environmental conditions in different countries and there is not the same ruling pattern everywhere. Indeed ownership structure and the distribution and diversity in the ownership of a company is of the utmost importance; In other words, the variations and oligopolies in the ownership market could affect ownership of each company. Investment as one of the most important components of aggregate demand plays a crucial role in any country's economic growth and development. To attract investment, a safe economic atmosphere which can increase return on investment by decreasing insecurities is required. Shareholding composition or ownership structure is one of the important issues of corporate governance and affects the managers’ incentive and thus could have a significant impact on the performance of each company. The relationship between ownership structure and investment sensitivity is a key issue in understanding the effect of handling mechanism of listed companies on the stock exchange.

Many researches indicate the case that the single capitalists have little experience and low ability and therefore they do business because of the reasons unconnected to information (such as liquidity and speculation) (Santosh Ramalyngvda Yang Yo, 2012 quoting Edin 1999, Barber and Edin 2000, 2008, Barber et al., 2009). Unlike these people, institutional investors are both more sophisticated and determiners of prices in core markets (Santosh Ramalyngvda Yang Yo, 2012 quoting India in 1990, Chan and Laknyshk 1995, Walder 1997, politics et al. 2006). While some studies insist on finding a positive relationship between ownership concentration and yield (Shleifer and Vishny, 1997, citing Rvsa et al., 2010), Domestez stated there should be no relationship between ownership structure and firm value (Shleifer and Vishny, 1997, citing Chen and Herford, 2007). He argued that ownership concentration is intrinsic consequence of the balance of costs (including risk) and interests (including monitoring) (Meshki, Muhammadi, and Ghalibaf Asl, 2009).

For the relationship not to exist, one must know the ownership structure as a result of a series of decisions that reflect the influence of shareholders and transfer activity in the stock market. Therefore, when there is a public offer or an investor’s decision to sell many stocks, the desire to own property in most cases is dimmed. Similarly, ownership of a large segment of the stock or shares of a company can increase ownership concentration. In other words, the structure of ownership of a company reflects the decisions taken by the current and potential shareholders. Ownership structure at any particular time, whether centralized or distributed, should be based on the willingness of investors to maximize the company's value, so there should be no systematic relationship between ownership structure and firm (Meshki, Muhammadi, and Ghalibaf Asl, 2009). Another issue in the impact of the ownership structure as a mechanism of control is the features of major shareholder. Many studies have been conducted on the surveillance role of government, institutional, and individual investors. Some studies in the area of ownership indicate improvement in the value of institutions taking steps to change their ownership type or privatization operations. Differences in management and surveillance incentives, policy
objectives, and social commitments of government units mainly cause that we expect these units to have lower performance compared to similar institutions (Shleifer and Vishny, 1997, quoting Cook, 1977). Institutional and corporate owners may have better performance as they are more motivated and have access to more information (Shleifer and Vishny, 1997 quoted Laporta et al., 1999). Shleifer and Vishny 1986 stated that the presence of large institutional investors has positive effect on the value of the company as it increases effective surveillance. Moreover, the institutes run through family foundations have greater incentive to control the company because people generally do not tend to differentiate their investments (Vera and Martin, 2007). Having less cost, these institutions must be more efficient than public institutions (Fama and Jensen, 1983).

Population:

The population of this research consists of firms listed in the Tehran Stock Exchange since the beginning of 1388 until the end of 1393 for six years.

Testing the hypotheses: In this study, a combination of data analysis has been used to test the hypotheses. To test the hypotheses and to investigate the relationship between independent and dependent variables, multivariate regression analysis is used. Multiple regressions is used to test the hypotheses of the study. In multivariate regression, the values of a variable (dependent variable or Y) are estimated by the values of two or more variables (independent variables X₁, X₂, …., Xᵢ). This is done by making a linear equation as the following: for each hypothesis, linear equation is as follows:

\[ Y' = b₀ + b₁(x₁) + b₂(x₂) + \cdots + bᵢ(xᵢ) \]

Where,

- Parameters of b₁, b₂, …., bᵢ are regression coefficients and b₀ is constant value.
- Alpha value is considered with 5% confidence level. By comparing p-value with alpha value, the hypotheses are confirmed or rejected.
- Watson test is also used to check the lack of autocorrelation of the model’s errors. Using the combined data is a popular method among behavioral scientists because in this method, we do not require much data although it answers many questions correctly (Ashrafzadeh and Mehregan, 1387). Another benefit of this method is that it estimates the dynamics of the variables over time but in cross-sectional studies, it is not possible as time is not taken into account (Zra’nezhad and Anwari, 1387). In this method, to choose a method for estimating the model, Chow or F test and Hausman tests are used. Chow test is as follows:

\[ H₀: \text{all the intercepts are equal= pooled approach} \]

\[ H₁: \text{at least one intercept is different= constant-effect approach} \]

\[ H: \alpha₁ = \alpha₄ = \alpha₇ = \alpha₀ \iff \text{تمام عوامل از مبداها باهم برابرند} \iff \text{Pooled} \]

\[ H₁: \exists r \neq s \Rightarrow \alphaᵣ \neq \alphaₕ \iff \text{مدل اثرات ثابت} \iff \text{حداقل یکی از عوامل از مبداها باهم کاملاً متفاوت است} \]
\[
F = \frac{(R_{LSDV}^2 - R_{Pooled}^2)(T - 1)}{(1 - R_{LSDV}^2)/(NT - T - K)}
\]

\[
F = \frac{(RSS_{Pooled} - RSS_{LSDV})(T - 1)}{RSS_{LSDV}/(NT - T - K)}
\]

Where,

- \(R_{LSDV}^2\) and \(RSS_{LSDV}\) are the coefficient of determination and the sum of squared residuals of the constant effects model, respectively;
- and \(R_{Pooled}^2\) and \(RSS_{Pooled}\) are the coefficient of determination and the sum of squared residuals resulting from the Pooled model, respectively;

\(N\) is the number of sections (in this case corporations), and \(T\) is the period of time (ie years).

If the null hypothesis is rejected, the model will be estimated using a constant-effects model otherwise it will be estimated using Pooled method (integration of data).

Descriptive statistics

After collecting the data and calculating the variables used in the research, descriptive parameters were calculated for each variable separately. These parameters include information on the central tendency such as mean, median, minimum, and maximum as well as information about scattering parameters such as standard deviation, skewness, and kurtosis is.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Symbol</th>
</tr>
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<tbody>
<tr>
<td>Stativity</td>
<td></td>
</tr>
</tbody>
</table>

Stativity of variables

Stativity of variables in this study was tested using Levin, Lin-Chu test. It is a unit root test on time series. Stativity or non-stativity of variables is evaluated using an equation. Levin, Lin-Chu
showed that in panel data, using unit root tests has a greater power than using unit root test for each section separately.

Wu (1996), Oh (1996), McDonald (1996) Frankel and Roozi (1996) showed with examples in their research studies that the use of conventional unit root tests in panel data, such as Dickey-Fowler test, extended Dickey-Fowler test and Phillips-Perron tests, have lower statistical power than panel data unit root tests. Null hypothesis in this test is the existence of unit root. If the p-value is less than 0.05, the null hypothesis is rejected.

**F Limer test**

First, it is necessary to do statistical tests needed to explain the type of data. The probability associated with this statistic i.e the impact of investment sensitivity on the structure of ownership is less than 0.05, So the null hypothesis is rejected.

<table>
<thead>
<tr>
<th>Result</th>
<th>Probability</th>
<th>statistic</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel approach</td>
<td>0/0000</td>
<td>89/59</td>
<td>F limer</td>
</tr>
</tbody>
</table>

**Hausman test**

It is necessary to do Hausman test to determine the type of panel data. Hausman test showed that the data are a panel with random effects. The probability associated with this statistic is less than 5%, so the model based on the variables of this study is estimated by the panel data with fixed effects approach.

<table>
<thead>
<tr>
<th>Result</th>
<th>probability</th>
<th>Statistic</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel with fixed effects approach</td>
<td>0/0005</td>
<td>22/75</td>
<td>Hasman</td>
</tr>
</tbody>
</table>

**Assumptions of the regression model**

First, the assumptions of the model should be examined:

**Lack of correlation of remaining test**

In the present study, Durbin-Watson test was used to detect the presence or absence of autocorrelation. If this amount is about 2, there is no autocorrelation. As Durbin-Watson statistic is equal to 1.58, the model has no autocorrelation.
Table 3: Durbin-Watson statistic

<table>
<thead>
<tr>
<th>Durbin-Watson statistic</th>
<th>LACK OF AUTOCORRELATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/58</td>
<td>1/5 &lt; WD &lt; 2/5</td>
</tr>
</tbody>
</table>

Based on the results of F Limer and Hausmen tests, the research model was estimated by panel data with constant effects approach which tests the effect of sensitivity of investment on ownership structure. F value of regression shows the explanatory power of the model. For this model, the probability statistic is less than 0.01, which shows at 99% confidence level, the model is significant and valid. In addition, the Durbin-Watson statistic (1.59) confirms the fact that there is no autocorrelation between the components, as this amount is between 1.5 and 2.5.

Table 4: Results of the estimation of the model

\[ IS_{it} = \beta_0 + \beta_1 \text{STATE}_{it} + \beta_2 \text{INSIDER}_{it} + \beta_3 \text{PUBLIC}_{it} + \beta_4 \text{INDIVIDUAL}_{it} + \beta_5 \text{CR}_{it} + \beta_6 \text{SIZE}_{it} + \epsilon_{it} \]

<table>
<thead>
<tr>
<th>p_Value</th>
<th>T statistics</th>
<th>standard error</th>
<th>Estimated rate</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6046</td>
<td>-0.518358</td>
<td>2.780349</td>
<td>-1.441216</td>
<td>Constant rate</td>
</tr>
<tr>
<td>0.2717</td>
<td>1.101007</td>
<td>1.878731</td>
<td>2.068495</td>
<td>STATE</td>
</tr>
<tr>
<td>0.4096</td>
<td>-0.825703</td>
<td>7.159406</td>
<td>-5.911543</td>
<td>INSIDER</td>
</tr>
<tr>
<td>0.7702</td>
<td>-0.292300</td>
<td>2.564907</td>
<td>-0.749722</td>
<td>PUBLIC</td>
</tr>
<tr>
<td>0.7203</td>
<td>0.358346</td>
<td>3.031280</td>
<td>1.086248</td>
<td>INDIVIDUAL</td>
</tr>
<tr>
<td>0.0453</td>
<td>2.009289</td>
<td>2.558977</td>
<td>5.141724</td>
<td>CR</td>
</tr>
<tr>
<td>0.0001</td>
<td>-4.035242</td>
<td>0.759768</td>
<td>-3.065849</td>
<td>SIZE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F statistic</th>
<th>Coefficient of determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>104.9544</td>
<td>0.96604</td>
</tr>
<tr>
<td>1.598615</td>
<td>0.95684</td>
</tr>
<tr>
<td>85</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

http://www.ijhcs.com/index.php/ijhcs/index
The results of the first hypothesis

Null hypothesis: there is no relationship between the Shareholding structure and investment sensitivity of corporates.
Alternative hypothesis: there is a significant relationship between shareholding composition and investment sensitivity of corporates.

As mentioned above, the composition of a company's ownership structure is comprised of corporate ownership, managerial ownership, institutional ownership, and true ownership. The results show that at 95% confidence, significant level (p_Value) for the variables of corporate ownership (0.2717), managerial ownership (0.4096), institutional ownership (0.7702), and true ownership (0.7203) in the companies listed on the Tehran Stock Exchange is higher than the significance level is 0.5. Therefore, H0 is rejected and it can be concluded that none of the factors in shareholding composition significantly affects investment sensitivity of corporates. Therefore, the first hypothesis is rejected.

The results of testing the second null hypothesis
The second null hypothesis: there is no significant relationship between ownership concentration and corporate investment sensitivity.
Alternative hypothesis: there is a significance relationship between ownership concentration and investment sensitivity. The results show that at 95% confidence, significant level (p_Value) for the variable of concentration of ownership in the companies listed on the Tehran Stock Exchange is lower than the significance level 0.5. Therefore, H0 is rejected and it can be concluded that concentration of ownership has a significant effect on investment sensitivity of corporates. Therefore, the second hypothesis is confirmed. In addition, the coefficients of concentration of ownership (5.141724) shows there is a direct correlation between ownership concentration and corporate investment sensitivity. This means by increasing concentration of ownership in companies, investment sensitivity increases as well.

Conclusions and recommendations
The analysis of the findings of regression test
To confirm or reject each hypothesis of the present study, multivariate regression test was used. Based on the results, the first hypothesis is rejected and the second hypothesis is confirmed.

Analysis of the results of the first hypothesis
Based on the results obtained, significance level of the variables of corporate ownership (0.4823), managerial ownership (0.5106), institutional ownership (0.7530) and true ownership (0.7679) in all companies listed on the Tehran Stock Exchange at 95% confidence level is more than the significance level 0.5. So it can be concluded that shareholding composition does not affect investment sensitivity of companies listed in Tehran Stock Exchange. The result of the first hypothesis of the study is consistent with the studies by Chen et.al (2013) and Headlock (1998) but it is inconsistent with the results of the study done by Pahlavan (2014).
The analysis of the results of testing the second hypothesis

Based on the results obtained, ownership concentration has a significant impact on investment sensitivity. On the other hand, the coefficient of the variable of Concentration of ownership indicates a direct correlation between the concentration of ownership and investment sensitivity. In other words, by increasing the concentration of ownership in companies, investment sensitivity increases. The result of the first hypothesis of the study is consistent with the studies by Chen et.al (2013) and Headlock (1998) but it is inconsistent with the results of the study done by Pahlavan (2014).

Research limitations

1. The results of the present study were obtained by the data collected from the companies listed in Tehran’s stock market. Therefore, generalization should be made cautiously.
2. The information related to financial statements of some companies listed in Tehran’s stock exchange was incomplete and therefore they were removed from the population.
3. The information related to non-stock companies was not available to be used.
4) Data extracted from the financial statements of the corporates are not inflation-adjusted. Different results may be obtained if the data is inflation-adjusted.
5) Given that the time span of the study, generalization of the results to the periods before and after it should be made carefully.

Research recommendations

- It is recommended that Tehran’s stock market use the findings of the present study to improve the investment of companies.
- Considering the effect of concentration of ownership on investment sensitivity, companies should pay more attention to the number of stocks owned by investors to have more investment opportunities.
- Considering the positive effect of concentration of ownership on investment sensitivity, stock analysts can predict that the companies which are developing this kind of ownership have better future investment.
- The effect of economic variables, inflation, oil prices, and exchange rates on the company's investment structure and investment sensitivity should be examined.
- The impact of organizational culture, ownership concentration and ownership structure on investment sensitivity should be examined.
- The effect of managerial ownership, staff, etc. on investment sensitivity should be examined.
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