The effect of ownership concentration on systematic risk in firms accepted in Tehran Stock Exchange

Maryam Bahreini¹, Mehdi Alinezhad Sarokolaei², Abbas Shoul³

¹MA student, Department of Accounting, Islamic Azad University, Sirjan Science and Research Branch, Sirjan, Iran, ²Department of Accounting, Tabriz Branch, Islamic Azad University, Tabriz, Iran, ³Staff member of Rafsanjan's Waliasr University, Industrial Management Department, Rafsanjan, Iran

ABSTRACT

The goal of the present research is to study the effect of ownership concentration on systematic risk in firms accepted in Tehran Stock Exchange since the start of the year 2001 to the end of the year 2011. In this research we have used the stock percentage owned by the biggest stockholder for ownership concentration and $\beta$ coefficient for systematic risk. The control variable of the research is firm size which can be obtained from assets' logarithm. The investigations about the relationships between variables were carried out by using regression analysis. The results of analyzing the data showed that there is not a meaningful relationship between ownership concentration and systematic risk but by considering firm size as the control variable this relationship will be meaningful and positive. It means that in bigger firms in size the systematic risk increases with increasing ownership concentration.

Keywords: ownership concentration, firm size, systematic risk

INTRODUCTION

In financial literature, risk is defined as the probable difference between real return and the expected return and is categorized into two groups. First group: it includes those risks which are related with the internal agents of the firms such as management risk, liquidity risk, lack of ability to pay debts risk and they are called non-systematic risks. Second group: it includes those risks which are not specific for one or some companies and are related to the overall status of the market such as economic conditions, political, social and other issues and are known as systematic risks. Since the systematic risk is uncontrollable and not reducible, it can have a critical role in making decisions by the managers of firms and the investors (Fakhkhari and Yousefnejhad, 2006). Risk and return are two key factors in different types of investments. The return gained by an investor is not absolute and therefore he/she is forced to incur risk. On the other hand, in a reasonable investment the unsystematic risk can be reduced or deleted by varieties in investments and different industries. In fact in investments we should consider the amount of risk and return and financing should be considered as the most challenging duty of the financial managers. Financing includes issues such as receiving credit loans which necessitate the possibility of repaying the original amount of the money in maturity time and the interests in the predetermined dates. The costs of financial expenditures such as interest has deserved the notice from financial managers more
than before because the ability of a profit entity compared with these costs by using financial leverage and calculating the degree of leverage seems to be very important (Nikbakht and Rahmaninia, 2010).

Research literature

Chen & et al (2013) studied the effect of institutional ownership on the level of fluctuation of the prices of firm stocks return in China. The objective results of this research showed that stock ownership by external institutions (financial & non-financial) increases the fluctuation level of the price of stock return of the firm even after controlling the total ownership structure, the amount of supply with the orders of the company, the ratio of debt to net asset and the removal of internal problems of the company. The experimental results considering the reactions showed that institutional ownership increases the fluctuation level of the return of the company considerably and also increases the effect of liquidity on fluctuation of the prices. Mehrani & et al (2012) studied the relationship between institutional ownership, concentration of institutional ownership and the relatedness of the value of accounting information. The results showed that there is a meaningful relationship between institutional ownership and the concentration of institutional ownership and the relatedness of accounting information, but the directions of these relationships are different. Increasing institutional ownership increases the relatedness of the value of the information by income statement. But the relatedness reduces the value of balance sheet information. Meanwhile, increasing institutional ownership concentration has reduced the quality of accounting information in income statement and following that the relatedness of the value of income statement information is reduced. But it increases the relatedness of the value of balance sheet information. Saeedi & Shiri Ghohi (2012) studied ownership structure and the performances of companies. The results of this research regarding the integrative regression with fixed effects showed that there is not any relationship between different types of ownership and firm performances. But in the generalized regression method a meaningful and reversed linear relationship was calculated among the owners of more than %5 of the stocks of the companies and their performances and the effect of other indexes of ownership structure such as the amount of the ownership of real stockholders, and the biggest stockholder on the performance of the company has not been approved. Mashayekh & Abdollahi (2011) studied the relationship between ownership concentration, firm performance and dividends policies in firms accepted in Tehran Stock Exchange. The results of their research showed that in an assurance level of %95 there is a meaningful relationship between ownership concentration and the two performance criteria of ROE and Q Tobin. This means that the more ownership concentration will result in more control over the managers and the performance of the company will be improved. Also there is a meaningful relationship between performance criteria of ROA and Q Tobin and the dividends ratio. It means that performance improvement can result in increasing dividends. Meanwhile, in this research there has not been any meaningful relationship observed between ownership concentration and dividends statistically. Nikbakht & Rahmaninia (2010) studied the effect of institutional ownership on the performance of firms accepted in Tehran Stock Exchange. The results showed that there is a meaningful and positive relationship between institutional ownership and firms’ performances. Also owners’ equity return and financial leverage have a meaningful relationship. Tsai & Gu (2007) studied the relationship between institutional ownership and the performances of the companies. This research showed that institutional investment in companies may help investing to reduce the agency problems arising from the isolation of management and ownership. Additionally, financial institutions tend to invest in bigger companies with lower financial leverages. Abdelghany (2005) studied the relationship between market risk and some of the accounting risk variables. Accounting risk variables include leverage ratio, size of asset, current ratio, changeability of earnings, profits paid for stocks, and profit beta. The results of this research showed that the four variables of asset size, current ratio, earnings growth and the ratio of stocks payable have an important relationship with systematic risk and other variables had a weak relationship with systematic risk.

Theoretical Foundations of the Research
**Systematic risk:** the investors need to have an accurate comprehension of the investment risk to increase their knowledge about risk issues. In other words, the investment process is based on the understanding and adjustment of the risk. Risk is defined as the realization or lack of realization of the predicted return rate, in assessing capital projects. In other words, lack of assurance about the receipt of future earnings in an investment is called risk and some factors such as inflation, political status, interest rate, and ... cause lack of assurance about the future earnings. It is one of the most important principles in investment that risk should be appropriate regarding the return of that investment in future. For example, making deposits in banks with less risk, purchasing bonds with average risks and purchase of common stocks with relatively high risks are thought. In financial literature, risk is defined as the probable difference between real return and the expected return and is categorized into two groups. First group: it includes those risks which are related with the internal agents of the firms such as management risk, liquidity risk, lack of ability to pay debts risk and they are called non-systematic risks. Second group: it includes those risks which are not specific for one or some companies and are related to the overall status of the market such as economic conditions, political, social and other issues and are known as systematic risks. Since the systematic risk is uncontrollable and not reducible, it can have a critical role in making decisions by the managers of firms and the investors (Fakhkhari and Yousefnejhad, 2006). It is the pattern presented by the market which separates the risk into two parts (systematic and non-systematic) and it is based on the presupposition that the return of each group of bonds solely depends on the return covariance of it and portfolio return. It seems that in real world there are several other factors besides return covariance of market portfolio which affect the return of risky bonds (Raee and Pouyanfar, 2012). If the value of a stock is defined regarding its systematic risk, we should use beta coefficient. In stock exchange the achievement of information about systematic risk of common stocks is considered as the most important issue.

**Institutional investment:** institutional investors are big investors such as banks, insurance companies, investment companies, pension organizations, and (Bushee, 1998). Cuervo (2002) believed that when main stockholders own a proper percentage of stocks, they can enforce their policies on the company and absorb private advantages. Whenever the rights of all stockholders are not observed the same, ownership concentration will be increased for the benefit of a number of the main stockholders. Lopez & Vecente (2010) believe that growth opportunities affect the capabilities of main stockholders to abandon ownership of the minor stockholders. Institutional ownership may resolve the employers' problems due to the capability of exploiting economic benefits and the variety. Thus, it seems that institutional owners, as the stockholders of companies, reflect both the cause and the resolution of agency problems. Their existence as stockholders may result in separating ownership and control while their excessive challenges in companies and the concentration of ownership will result in finding a resolution to observe the management of companies (Moradzadehe fard et al., 2012)

**Concentration of ownership:** ownership structure, especially the amount of the concentration of ownership of the stocks of companies in the hands of main stockholders is called the most important effective factor in controlling and managing the companies. In Iran ownership concentration is mainly present in the first level of the main stockholders and in most cases there is no need to study the second, third, levels of main stockholders (Aslani, 2006). As Hill & Snail (1989) stated when stockholders are concentrated, often victory over asymmetrical information becomes easier for individual stockholders and therefore the cooperation of activities and demanding information from management is done easily. This idea was supported by Denero & Kim (2002). They developed the hypothesis claiming that they deviate less with higher ownership levels by using the viewpoint posed by Jensen and Mc Ling (1976) that: nobody cheats himself". Ownership concentration is the type of distributing stocks among the stockholders of different companies. The smaller amount of the number of stockholders will result in more concentrated ownership companies (Moradzadehe fard et al., 2012). In countries where stock concentration is high and there are less developed stock markets, the contradiction between the benefits of
the main stockholders and the stockholders in minority is one of the most fundamental issues in controlling the companies.

**Firm size:** usually managers tend to grow the company more than its optimal size because firm growth increases the power of management with increasing the resources controlled by it (Jensen and Meckling, 1986). Bigger companies face a lower amount of unwanted ownerships due to the amount of financial resources needed to be purchased. Thus, it is expected that managers in big companies should have more power and authority in investing and financial policies which results in a higher amount of residual cash (Ferreira et al., 2004). Pasious & et al (2006) used total assets of the company as a criterion to calculate firm size. Arab Salehi & Ziaee (2010) also used the real logarithm of total assets to calculate firm size. Firm size is the key variable in controlling and administering the companies. The structure type and the type of enforcing management and financing in big companies is different from those in small companies theoretically and ambiguous in corporate governance (klapper and love, 2003). Different criteria were used to determine firm size such as: total assets' value, total sales, number of staffs, owners' equity value and the logarithm of total assets' value.

**Research Hypotheses**

1- Concentration of ownership affects systematic risk.

2- The effect of Concentration of ownership increases the systematic risk in firms with bigger sizes.

**Research Methodology and Data Collection**

The present research is quasi-experimental and post incidental regarding administration method. Also the present research falls into normative accounting researches and is asked on real information. The data related to research literature and the theoretical issues were extracted from library resources and scientific databases and foreign and local papers. The data needed to do this research are usually extracted by using Rahaward Novin 3 software and the information desk of Tehran Stock Exchanges.

**Statistical Population**

The statistical population of the present research includes all firms accepted in Tehran stock Exchange accepted into the bourse before March 2001 and their trademarks should not have been stopped until the end of the year 2011. Based on the studies done, the statistical population of the present research involves 85 companies accepted into Tehran Stock Exchange since 21 of March 2001 and they have the following characteristics:

1- Their fiscal year ends on 21 of March (end of Esfand) to be comparable.

2- They should not have had stopped their activities or changed their fiscal year during the study period.

3- The data needed about the companies should be accessible during the study period.

4- The firms should not have been among banks, insurance companies and investing firms.

**Research Variables**

**Ownership concentration:** there are different definitions for ownership concentration. Demstez & Len (1985) defined ownership concentration as the percentage of stocks owned by %5 or %20 of the main stockholders of the company and a criterion for the goal which is calculated through the second power of the shares of each of the stockholders. Fasberg (2004) described ownership concentration as the percentage of the stock held by the stockholders and blockers of higher than %5. Clasens & et al (2002) accept the biggest stockholders as ownership concentration. Prouvez (1992) and Haveyt & et al (2003) consider total stock of 5 big stockholders as ownership concentration. Telgui & et al (2003) define the percentage of stocks owned by blockers of more than %5 as ownership concentration. Tower (2006)
described ownership concentration as total stocks of real or legal individuals who own more than %10 of the stocks of the company. In this research only the biggest stockholders were considered as the only ownership concentration as mentioned by Clasens & et al.

**Firm size:** in this research we have used the natural logarithm of assets to calculate firm size. After collecting the data about firm size, the companies have been divided into two groups of big and small by using the mean model. Using logarithm was done to remove non-linearity of the data related to firm size. The non-linear status of the data is practiced due to the fact that the value of assets of companies is very dispersed and using logarithm may foster studies (Dastgir et al., 2010) In this paper we have used firm size as the independent variable for the first hypothesis and it was used as control variable for the second hypothesis.

**Systematic risk:** the dependent variable of the present research is systematic risk which includes a part of the total risk of bonds. It is created due to the existence of some factors and it affects the price of total bonds. To determine systematic risk we use systematic risk index (beta coefficient) which shows the correlation of market return and the return of share I and it is calculated through division (covariance of the return of share I and market return divided by market variance) annually.

**Data Analysis and Hypotheses Testing**

To analyze the collected data to approve or reject the hypotheses we have used the regression method and in this research the data analysis was carried out by using the software SPSS and Stata and we have used integration data. F test of Limer to determine the type of data and also t student test was done to test the hypotheses.

**Tests used in this research**

**F Limer test:** to test the meaningfulness of the group effects we have used F statistics. Thus, if there is separate latitude from the basis for each part, the estimation of the model is done through fixed effects or random effects (Baltagi, 2005). In fact, when there is not a difference in temporary characteristics, the model above can be estimated by using the ordinary least squares method, but if there is individual effect we should use data panel method to estimate the model. Therefore, to determine the existence of separate latitude from the basis for each of temporary groups we have used F statistics as follows:

$$ F = \frac{(\text{SSE}_R - \text{SSE}_U)/J}{\text{SSE}_U/(NT - K)} $$

Where \( \text{SSE}_R \) is the squares of model error related to pooled model and \( \text{SSE}_U \) is the squares of errors not bound to tabular data model (Hill et al., 2007). In other words, to choose from among the models integrated and the fixed effects, F Limer test has been utilized. The structure of this hypothesis test is as follows:

- \( H_0 \): the parameters of latitude from the basis are equal in all places (times)
- \( H_1 \): the parameters of latitude from the basis are not equal in all places (times)

Thus, if the one hypothesis is rejected the integration data method will be accepted.

**Durbin-Watson:** to determine the independence of errors from each other we have used Durbin-Watson's test. If Durbin-Watson's statistics is between 1.5 and 2.5, there would be lack of correlation between errors (Momeni and Faale Ghayyomi, 2012).

**Bera-Jarque test (normality of the data test):** one of the most common tests used is the test to determine the normality of the data. It uses the characteristics of the random variable which was distributed normally and the total distribution is defined by the two first moments of average and variance. The third and fourth standardized moments are known as a distribution called pulling and
unevenness. Unevenness is a criterion based on the fact that the distribution is not symmetrical in its averages and pulling is a criterion for distribution series. A normal distribution is not uneven and its pulling equals 3 (Badri and Abdelbaghi, 2010).

The formula to calculate Bera-Jarque is as follows:

Where, $S$ is unevenness coefficient, and $K$ is pulling coefficient.

Regarding the statistics related to Bera-Jarque (7351864.9) sentences have normal distributions.

**Research findings**

**Descriptive statistics:** the descriptive statistics of the research are shown in table 1.

**Table 1:** The descriptive statistics of the research

<table>
<thead>
<tr>
<th>variable</th>
<th>average</th>
<th>mean</th>
<th>criterion deviation</th>
<th>number of observations</th>
<th>minimum</th>
<th>maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>firm size</td>
<td>5.68</td>
<td>5.6</td>
<td>0.66</td>
<td>935</td>
<td>2.7</td>
<td>8.3</td>
</tr>
<tr>
<td>ownership concentration</td>
<td>0/45</td>
<td>0.49</td>
<td>0/25</td>
<td>935</td>
<td>0</td>
<td>0.997</td>
</tr>
<tr>
<td>systematic risk</td>
<td>0.16</td>
<td>0.36</td>
<td>7.58</td>
<td>935</td>
<td>-196.17</td>
<td>26</td>
</tr>
</tbody>
</table>

**Testing the first hypothesis**

Based on the first hypothesis it was claimed that ownership concentration affects investing opportunities. The hypothesis mentioned was tested by using integration data in the research model and the results are shown in table 2.

**Table 2:** The results of data analysis to test first hypothesis

<table>
<thead>
<tr>
<th>Variable</th>
<th>coefficients</th>
<th>criterion deviation</th>
<th>t statistics</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ownership concentration</td>
<td>0.124</td>
<td>0.225</td>
<td>0.55</td>
<td>0.580</td>
</tr>
<tr>
<td>latitude from the basis</td>
<td>0.421</td>
<td>0.115</td>
<td>3.65</td>
<td>0.000</td>
</tr>
<tr>
<td>F Limer test</td>
<td>0.31</td>
<td></td>
<td></td>
<td>0.5799</td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td></td>
<td></td>
<td>0.0003</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td></td>
<td></td>
<td></td>
<td>1/875</td>
</tr>
</tbody>
</table>
It can be seen in table 2, the variable ownership concentration affects systematic risk positively. But regarding the t statistics and P-Value which is more than 0.05 it is inferred that this effect is not meaningful. By changing (increase, decrease) of a unit in ownership concentration, the systematic risk changes 0.124.

Testing the second hypothesis

The second hypothesis expressed that the effect of ownership concentration on systematic risk in firms with big sizes increases. The hypothesis mentioned in the level of tabular data was tested by using the research model and the results are shown in table 3.

<table>
<thead>
<tr>
<th>variable</th>
<th>coefficients</th>
<th>criterion deviation</th>
<th>t statistics</th>
<th>P-Value</th>
<th>number of observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ownership concentration</td>
<td>1.993</td>
<td>0.852</td>
<td>2.34</td>
<td>0.20</td>
<td>407</td>
</tr>
<tr>
<td>latitude from the basis</td>
<td>-0.337</td>
<td>0.419</td>
<td>-0.80</td>
<td>0.422</td>
<td>407</td>
</tr>
</tbody>
</table>

The data related to big companies were investigated in order to study the effect of ownership concentration on systematic risk. Regarding the table 3, ownership concentration in big companies affects systematic risk positively and regarding t statistics and P-Value which equals 0.020 and it is less than 0.05, this effect is meaningful.

Conclusions and interpretation of the results

In the present research we have investigated the data collected from the financial statements of the firms accepted in Tehran Stock Exchange to study the effect of institutional investment on the systematic risk. the results of analyzing the data in testing first hypothesis show that there is not a meaningful relationship between ownership concentration and systematic risk. In testing the second hypothesis it was determined that there is a meaningful relationship between ownership concentration and systematic risk regarding firm size and this relationship is positive and direct. In other words, the results showed that there is not a meaningful relationship between ownership concentration and systematic risk but by considering firm size as the control variable, this relationship becomes meaningful and positive. Regarding the fact that the biggest stockholder is considered as ownership concentration in itself we can claim that the biggest stockholder does not affect systematic risk but if we consider the relationship above owned in big companies this relationship becomes meaningful. It means that by increasing the stocks owned by the biggest stockholder in companies with bigger sizes, the systematic risk will also increase. And if the stocks owned by the biggest stockholder in firms with bigger sizes reduce, the systematic risk will also decrease.

REFERENCES


