

Analysis the impact of different types of property on risks in the petrochemical industry listed companies in Tehran Stock Exchange

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Abstract: The relationship between ownership structure and firm performance is a key issue in understanding the impact of governance mechanisms of listed companies on the Stock Exchange. Large shareholders are important group of investors around the world that through the stakes in their companies has a significant effect on corporate financial decisions. They can shape risk taking of corporate that may affect the corporate's ability to compete and finally company's survival. In this research by using analysis method and econometric models in three models for petrochemical companies were investigated the relationship between beta risk index in the companies Tehran Stock Exchange and two key variables of ownership concentration, as 5% of the corporate's major shareholder and the percentage of corporate's largest shareholder. The data of research by using panel data was estimated during the period from 2006 to 2012. Estimation results show that, indicator of 5 major shareholder of corporate and the corporate largest shareholder that both of them indicate on corporates ownership concentration, have a significant adverse effect on the risk of beta in Tehran Stock Exchange and selected companies in this market. It should be noted that the relationship between the independent and dependent variables in this research is parabolic and shows that with the increasing concentration of ownership in the company, initially risk dropped to its minimum point, and from this point onwards the beta risk increases.

Key words: Ownership concentration; Risk; Petrochemical industry of Stock Exchange

1. Introduction

At least several reasons encourage research on corporate risk-taking by the largest shareholder. Large shareholders: a group of investors from around the world. Shareholders have a significant effect on corporate financial decisions. They can shape the risk taking of corporate that may affect the corporate's ability to compete and ultimately company's survival. High risk disclosure leads to high variance in the asset mix which may have negative effects on the economy. Corporate theory assumes that managers are risk-averse and shareholder are risk neutral, because they are able to diversify its risk ventures. Managers are faced with a risk on employment that it can be reduced by managed of assets through the integration. We expect firms with large shareholders compared to dispersed ownership have a greater risk aversion (Rahman Seresht et al., 2005).

This article examine the effect of ownership structure on risk of listed companies on the Stock Exchange and sought to establish a comprehensive analysis about the relationship between ownership structure and the basic risk of listed companies on the Stock Exchange by using different criteria for each variable. This article provides direct empirical evidence about the relationship between risk and

ownership concentration variables and in this connection; the panel data approach is used. Here is used a polling model with panel data in the linear model, secondary model and the third level model and by the two risk of Tehran Stock Exchange company and the concentration of ownership of listed companies in Tehran Stock Exchange. The main hypothesis of this study is that ownership concentration is not effective on risk of listed companies in Tehran Stock Exchange. In fact, the two research sub-hypotheses are:

1. Five major shareholder ownership concentrations on risk indicators in selected companies in Tehran Stock Exchange are not effective.
2. Ownership concentration percentage of voting rights of largest shareholder on risk indicators in selected companies in Tehran Stock Exchange is not effective.

The structure of the paper is divided as follows: After the introduction in Section 1, the literature contains risk and its variants and the effect of ownership structure on risk and internal and external studies will be reviewed in section 2. Then according to theoretical and empirical evidence, specified the adequate model for examine the effect of ownership structure on the risks of listed companies on the Stock Exchange specified in Section 3 and finally, the model for petrochemical industry is estimated in section 4. Moreover, the final

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section is devoted to conclusions; that presented in Section 5.

2. Literature and theoretical investigations

2.1. Ownership structure theory

It should be noted that the effect of ownership structure on the performance and efficiency of the company is complex and multi-dimensional issue. For this reason, the types of conflict of interests can be expected between individuals and groups that among them including conflicts of interest between owners and managers, shareholders and creditors, actual shareholders and legal shareholders, internal and external stakeholders, and so on. Despite this, one of the most important aspects of the agency theory that related to the conflicts of interest between managers and shareholders that the main issue of research is in this area. According to experts, shareholders should carefully monitor the management and always try to prevent from established the contravention of goals and create a diversion on management's efforts. But in any case shareholders with the election of directors and delegate decision-making authority to them under certain circumstances may be in a passive position that this condition depends heavily on the performance and accuracy of decisions of other shareholders (Rahman Seresht et al, 2005).

2.2. Definition of risk

Risk refers to accept or admission the danger, but in particular, the risk in the stock exchange is according to the concept of accept and not admission to the expected return. If investment was be secure that achieves to the expected profit or gain more than what is expected and anticipated, the is not incurred other risk, such as profits from the purchase of bonds (debt) or interest due on term deposits in banks in the country. Therefore risk can be defined briefly as follows: risk is the probability of deviation of actual earnings and investment of than its expected return or profits. In other words, when there is a risk that the investor not enough confidence compared to its expected future earnings. If the investor is secure that will achieve to its expected profit or probably more profitable than their expectation, there will be no other risk. Rate of risk of each investment can be analyzed by using the equation "standard deviation" (Nickels, 1999).

Market Risk: is consists of capital losses (capital depreciation) that occur due to changes in the price of the common stock of corporate. This changed when considered as a market risk that be affected by a number of factors in the firm. The main feature of these factors is that is not under the control of corporate and only do not influence the certain corporate, but influence the profitability of all companies in a particular industry. It is obvious that market risk is not the responsibility of the company

and more refers to factors outside the control of corporate. Parameters measurement of this part of the risk more refers to the national risk factor such as micro-and macro-economic factors, political factors and social returns that are not reviewed in this article (Stulz, 2003).

Beta coefficient is the criteria to calculate the systemic risk and can be used an indicator for ranking risks of different assets. If the beta coefficient for an asset is greater than one ($\beta > 1$), volatility of stock returns is more than market volatility and it is said to be high-risk assets. Invert assets with a beta coefficient less than one ($\beta < 1$) have the lower volatility from volatility of the market. This property is also called lower-risk assets (Tehrani, 2009).

2.3. Background of the study

Rastegarnia and Abbasi (2012) examine the effect of ownership structure (concentration and composition) on firm value. The study sample consisted of 69 companies during the period 2005-2009. Results showed no significant relationship between ownership concentration principal shareholders, the main shareholder of the logarithmic variable and Herfindahl index by value of the company. On the other hand, is a significant relationship among the concentrated ownership of five principal shareholder and logarithmic variables of it by the value of companies. Test results show that between firm value with individual and institutional ownership has a significant correlation and with state ownership is an insignificantly negative relationship.

Mohamadi, Ghalibaf and Mashki (2009) in an article entitled "Effects of ownership structure (concentration and composition) on the performance and value of companies listed in Tehran Stock Exchange" is investigate the role of the separate and simultaneous effects of concentration and type of ownership on the operating performance and value of companies listed on the Tehran Stock Exchange. The sample consisted 70 companies during the period 2002 to 2007. The results of the test effects of ownership shows that despite the negative relation between stock returns and the proportion of state ownership, the relationship between the proportion of sole proprietorships, corporations and private by return is positive and significant. While the ownership concentration variable also in all models has a direct relationship with stock returns, Test the relationship between ownership with firm value it was led to similar results about return.

Yigit and Anil (2012) in a study entitled "the effects of the variability of management and ownership structure: a survey of businesses in selected firms in the Istanbul Stock Exchange", by using agency theory and the Herfindahl index, check that is the relationship between the executive and the diverse preferences strategically of 359 selected companies in Turkey during the period 2005-2009.

The results show that the surveyed companies have enjoyed a variety of grades and percentages of ownership. The findings show that the percentage ownership of the business of the Company shall be increased.

Paligorova.T (2010) in an article entitled "The effect of ownership on risk-taking and revenue of agencies", investigate the relationship between ownership structure and corporate risk and earnings for the period 1990 to 2003. The results show that permanent communication between an individual ownership and risk appetite for both inventory and operating income is U-shaped. Severe ratio for operating income represents an inverse U-shaped relationship between insider ownership. These observations are consistent with the achievement of individual to the effectiveness of the risk and income, this means that although risk appetite is changed with the property, when the risk is higher average incomes are higher. It is also strong evidence of a negative correlation between institutional ownership and both functional and inventory fluctuations and positively with income and capital performance.

Paligorova.T and Xu (2009) in an article entitled "Risk-taking and corporate ownership structure", is investigate the determinants of corporate risk appetite. The results show the positive relationship between risk appetite and ownership of the company's share of the largest shareholder. Also, the

results showed that shareholders increases when the company avoids the risk appetite that their property unlike holdings of investment funds, banks and finance companies and industrial and also stronger legal protection of investors' rights, credits, reduce risk appetite.

3. Specifies the model and estimate the model

According to the research literature, the model specified for investigate the effect of ownership structure on risk petrochemical companies listed on the Stock Exchange is as follows:

$$Y_i = \gamma_0 + \gamma_1 CO_i + \epsilon_{11}$$

$$Y_i = E_0 + E_1 BL_i + \epsilon_{21}$$

$$Y_i = C_0 + C_1 CC_i + C_2 CC_i^2 + V_{11}$$

$$Y_i = L_0 + L_1 BL_i + L_2 BL_i^2 + V_{21}$$

$$Y_i = C_0 + C_1 CC_i + C_2 CC_i^2 + C_3 CC_i^3 + \epsilon_{11}$$

$$Y_i = L_0 + L_1 BL_i + L_2 BL_i^2 + L_3 BL_i^3 + V_{21}$$

That variables used are concentration of ownership that includes the total voting rights of five major shareholders that it has been shown by CO expression. BL variable represents the percent of the voting common stock owned by the largest shareholder.

As Limer F statistics show, Compilation of data on all limer is rejected and panel data can be verified. The Hausmann test also rejected the fixed effects model and random effects models confirmed.

Table 1: The effects of five major shareholders of the company on the beta risk

Variable	coefficient	Z Static	Prob
co	-.0035617	-3.34	0.012
cons	0.467382	1.03	0.425
R2: 0.15 Prob>chi2 = 0.4243		F(1,211)=1.42 Prob>F = 0.0345	

As the results in Table 1 show, five major shareholders of the company on the beta risk have significant and negative effects. This means that by increase the five major shareholders of the company

and increased in focus with the company, the company's risk is reduced. R² equal to 0.15, which indicates that the model (0.15) with these variables can be, estimated beta changes.

Table 2: The effects of squared of five major shareholders of the company on the beta risk

Variable	coefficient	Z Static	Prob
co	0.345527	0.13	0.905
2 co	-0.834426	-0.19	0.824
cons	0.562412	0.43	0.645
R2: 0.21 Prob>chi2 = 0.9330		F(1,211)=1.45 Prob>F = 0.0543	

As the results in table 2 show, five major shareholders of the company variable on the beta risk have a negative effects but no significant and

squared of five major shareholders of the company on the beta risk has a positive but not significant effect.

Table 3: The effects of third exponent of five major shareholders of the company on the beta risk

Variable	coefficient	Z Static	Prob
co	0.004543	0.04	0.981
2 co	-0.000045	-0.03	0.983
3 co	-0.000452	0.001	0.996
cons	0.774523	0.31	0.781
R2: 0.24 Prob>chi2 = 0.9045		F(1,211)=1.46 Prob>F = 0.0363	

Table 3 results shows that the lack of influence of the parameters in the three models includes linear, quadratic and cubic on company's beta risk. R^2 is

equal to 0.24, which indicates that the model (0.24) with these two variables can be used to estimate the beta changes.

Table 4: The varying effects of percent of the company's largest shareholder variable on Beta risk index

Variable	coefficient	Z Static	Prob
BI	-0.093421	-0.0453	0.005
cons	1.355462	3.464	0.002
R2: 0.18 Prob>chi2 = 0.6745		F(1,211)= 3.11 Prob> F = 0.9945	

Also as Limer F statistics show, Compilation of data on all models is rejected and panel data can be verified. The Hausmann test also rejected the fixed effects model and random effects models confirmed.

As the results in table 4 showed companies' largest shareholder variable have a significant and

negative effect on the beta risk. This means that with increases in percentage of the company's largest shareholder and to kind of increased concentration within the company, reduced corporate risk.

Table 5: The effects of squared of percentage of the company's largest shareholder on the beta risk

Variable	coefficient	Z Static	Prob
BI	-0.96649	-2.81	0.068
2 BI	0.000046	0.34	0.813
cons	1.553821	1.37	0.114
R2: 0.46 Prob>chi2 = 0.0553		F(1,211)= 1.62 Prob> F = 0.0095	

The results in Table 5 show that percentage of the company's largest shareholder in liner method has a significant and negative impact on the beta risk.

Table 6: The effects of third exponent of percentage of the company's largest shareholder on the beta risk

Variable	coefficient	Z Static	Prob
BI	0.554638	0.89	0.371
2 BI	-0.055463	-0.031	0.290
BI 3	0.000015	1.04	0.276
cons	-0.045535	-0.045	0.456
R2: 0.34 Prob>chi2 = 0.5674		F(1,211)=1.54 Prob>F = 0. 0345	

Moreover, as Table 6 shows, Limer F statistics show, Compilation of data on all models is rejected and panel data can be verified. The Hausmann test also rejected the fixed effects model and random effects models confirmed and third exponent of percentage of the company's largest shareholder have a negative and significant impact on the beta risk.

4. Conclusions and suggestions

The results the study showed that 5 major shareholder of the company index and the company's largest shareholder that both of them indicated on the company's ownership concentration, have a significant adverse effect on beta risk in the Tehran Stock Exchange and in the selected companies of petrochemical market. It should be noted that the relationship between the independent and dependent variables in this research is parabolic and shows that with the increasing concentration of ownership in the company, initially risk dropped to its minimum point, and from this point onwards the beta risk

increases. This is important since that it might be thought that by increasing the concentration of ownership in corporations, risk has been reduced, but when the percentage of ownership concentration (the fifth largest shareholder and largest shareholder) from critical point increases and Beta risk begins to rise. It can be a warning to companies with a high percentage of concentration. The results of the present study are consistent with Gadhomi et al (2003) results. Results of Gadhomi et al. (2003) show that ownership structure negatively connected with level of risk that and this relationship is complex and nonlinear. Dispersed companies have a higher risk. Their results show that a nonlinear relationship between ownership structure and the risk of systematic with lower levels of risk taking and high ownership is obvious.

Considering the results of this study suggest that, in separate studies for different companies, due to the concentration of ownership obtained the point of minimum beta risk and policy making ownership concentration accordingly occurs. In fact, if the percentage of ownership of these points more or less, Beta risk increases.

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