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Full Length Research Paper

The impact of institutional ownership on risk-taking behaviors

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One of the major factors influencing a company's performance is undoubtedly the level of risk-taking. As owners of a great deal of company stock, institutional investors can play an important role in determining this level. Therefore, this study has investigated the influence of institutional ownership on the risk-taking behavior of companies that are listed in the Tehran stock exchange. The study has used the standard deviation of monthly return and systematic risk (β) as market risk criteria, and research and development expense and capital expenditure as company risk criteria. This research includes 58 companies from 2004 to 2008, in which ordinary least squares regression models (panel data) and a tobit model have been used. The results show that no meaningful relationship exists between the percentage and concentration of institutional ownership by stockholders and risk-taking behavior.

Key words: Institutional ownership, risk-taking behavior, market risk, company risk.

INTRODUCTION

The industrial revolution and the need for immense capital on the one hand, and the incapability of investors to take the risks and provide this capital on the other hand, have together provided the necessary environment for the development of corporations, the separation of ownership and control, and also the agency theory. According to agency theory, agency relationship is defined as a contract under which one or more persons (the principal[s]) engage another person (the agent) to perform some services on their behalf that involves delegating some decision-making authority (Jensen and Meckling, 1976).

The agency theory is based on diverse behavioral assumptions, some of which emphasize the attitude of stockholders and managers toward existing risks. Based on the hypotheses of this theory, a stockholder buying out a share faces the same risk as other stockholders and will create diversification in his or her portfolio. Therefore, this stockholder is risk-neutral (Namazi, 2005). However, a guarantee of reemployment and a manager's income depend on a specific company, and it is hypothesized that to reduce the risk regarding his/her wealth, the manager is risk-averse when making administrative decisions.

Also, agency theory literature indicates that managers are unable to work in several companies simultaneously and make human resources diversification. They face sizable risks regarding their capital because they may fail and be forced to resign as a result of their selecting high-risk investment projects. Thus, they are inclined to choose low-risk investment projects. However, this situation is undesirable to stockholders who have diversified their portfolios and are inclined to accept high-risk projects (Wiseman and Gomez-Mejia, 1998). Therefore, it is argued that stockholders and managers have different attitudes toward risk-taking in general.

Differences in the preference of stockholders and managers regarding risk-taking are believed to present lost opportunity costs for the stockholders who are

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indifferent to risk, and this will eventually cause a moral hazard problem (Wiseman and Gomez-Mejia, 1998). Appropriate corporate governance mechanisms should thus be created in companies to reduce the effects of information asymmetry between managers and stockholders, to parallel their aims, to prevent personal interests, and to modify managers' level of risk-taking (Namazi, 2005). Some of the structural elements of the corporate governance are the shareholders and their ownership structure, board structure, internal and independent auditing and other factors influencing the actions taken by the companies (Chen and Yur-Austin, 2007).

Given that each owner group has different motivations and strategies to achieve success and different attitudes toward risk-taking, and considering the differences in company ownership structures at different times, it should be determined whether the existence of different groups such as institutional stockholders in ownership structures meaningfully affects the risk of companies listed in the Tehran Stock Exchange.

THEORETICAL STRUCTURE

Institutional ownership

Based on existing literature, institutional investors, including banks, insurance companies, pension fund associations, investment companies, and others, are institutions that buy and sell large amounts of securities; and because of their right to vote in annual general meetings, they directly affect the managerial decisions of investees (Kane and Velury, 2004).

Generally, three different viewpoints in corporate governance literature regarding the monitoring role of institutional stockholders in the decision-making process of management are explained as follows:

Active monitoring hypothesis

Based on this viewpoint, institutional stockholders are more inclined to monitor managers, considering the risk they face. These stockholders can play their monitoring roles with fewer costs and reduce the problems of agency and information asymmetry by using their resources and specialties and increasing their levels of ownership. Besides, institutional stockholders modify the myopia problem and make it possible to invest in profitable and long-term projects through their influence on management policies (King and Wen, 2011).

Passive monitoring hypothesis

In this view, it is believed that institutional investors have limited incentives to monitor because of free-rider problems among institutional investors, making it difficult for them to take collective actions. In addition, institutional investors are passive investors and trade stocks according to portfolio-rebalancing needs. They prefer to sell poor-performing shares rather than attempt to influence managerial decisions (King and Wen, 2011).

Hypothesis of siding with managers to exploit minority shareholders

From this point of view, institutional investors side with the managers to expropriate the minority shareholders. For example, investment banks may support the management at the expense of individual shareholders to receive future banking businesses (King and Wen, 2011).

Depending on which scenario holds true, we would expect different impacts of institutional ownership on governance structure and managerial risk-taking activities.

Ownership concentration

Jensen (1986) believes that ownership dispersion leads to inefficiency. Thus, ownership concentration and the presence of blockholders in ownership structures can have a determinative role in reducing agency costs and free-rider problems and inefficiency (Korczak and Korczak, 2009).

Shleifer and Vishny (1986) believe that blockholders have enough motivation and resources to collect information, control people in a company, and implement contracts; and that they will increase corporate value and reduce possible risks by making changes in management policies. However, Demsetz and Lehn (1985) believe that not only is there no relationship between ownership concentration and efficiency, but that it will also generate many costs. Controlling strategic decisions by these stockholders may decrease investments in some profitable projects. Moreover, by receiving cash as dividends, blockholders may incur costs for other company stakeholders, such as creditors, and also increase the level of possible risks.

PREVIOUS RESEARCH

Gursoy and Aydogan (2002) have examined the effects of ownership structure (ownership concentration and ownership mix) on the company's performance and level of risk-taking. Their sample consists of 1,079 Turkish companies during the period from 1992 to 1998. The results of their research show that higher concentration leads to better market performance but lower accounting performance. Family owned firms, in contrast to conglomerate affiliates, seem to have lower performance with

lower risk. However, government-owned firms have lower accounting but higher market performance with higher risk.

Gadhoum and Ayadi (2005) analyzed the relationship between ownership structure and company risk-taking. Their sample consists of 569 Canadian nonfinancial companies from 1989 to 1991. The results show that ownership structure, including ownership concentration, ownership of the biggest blockholder, and managerial ownership, has both a negative and a meaningful relationship with the level of risk-taking within a company.

Bargeron et al. (2010) have investigated the effects of approving the Sarbanes-Oxley Act on a company's level of risk-taking. Their sample consisted of many large American and non-American companies from 1994 to 2006. The results of their research reveal that implementing the Sarbanes-Oxley Act in American companies remarkably reduced their risk-taking criteria in comparison to non-American ones.

King and Wen (2011) investigated the relationship between corporate governance mechanisms and the company's level of risk-taking. Their sample consists of 7,689 U.S. companies from 1990 to 2005. The results of their research show that the overall governance structure has a significant impact on how managers make decisions on investment policy: strong bondholder governance motivates more low-risk investments such as capital expenditure and lower high-risk investments such as research and development (R and D); whereas, weak shareholder governance (entrenched managers) leads to more R and D. Moreover, they find that the effects of governance on investment policy differ significantly between speculative and investment-grade firms. For speculative firms, strong bondholder or shareholder governance leads to more capital expenditures and low R and D investments. For investment-grade firms, strong bondholder or shareholder governance leads to low capital expenditures and an insignificant impact on R and D investments

Research hypotheses

Two main and eight secondary hypotheses to analyze the research subject have been designed and tested as follows:

H_1: A meaningful relationship exists between the ownership percentages of institutional stock holders and risk-taking behavior.
H_{1a}: A meaningful relationship exists between the ownership percentages of institutional stockholders and the standard deviation of monthly returns.
H_{1b}: A meaningful relationship exists between the ownership percentages of institutional stockholders and the systematic risk (β).
H_{1c}: A meaningful relationship exists between the ownership percentages of institutional stockholders and R and D.
H_{1d}: A meaningful relationship exists between the ownership percentages of institutional stockholders and capital expenditure.
H_2: A meaningful relationship exists between the institutional ownership concentration and risk-taking behavior.
H_{2a}: A meaningful relationship exists between the institutional ownership concentration and the standard deviation of monthly returns.
H_{2b}: A meaningful relationship exists between the institutional ownership concentration and the systematic risk (β).
H_{2c}: A meaningful relationship exists between the institutional ownership concentration and R and D.
H_{2d}: A meaningful relationship exists between the institutional ownership concentration and capital expenditures.

RESEARCH METHODS

Sample

Our sample comprises data from 58 nonfinancial firms listed in the Tehran Stock Exchange for the years 2004 through 2008. Each firm had to meet specific criteria to be included in the sample:

1. They must close their fiscal year on mid-March (end of Persian calendar).
2. They must have full financial and market data for the whole period of investigation.

Data collection method

The data needed for analysis is gathered from audited financial statements and decisions taken in annual general meetings. In doing so, the main part of data is collected from the data base that belongs to the Islamic Research Management Center of the Tehran Stock Exchange, and the remaining data are gathered from the second version of TadbirPardaz software.

Research model

An ordinary least-square regression model is used to investigate the effects of institutional ownership on market risk criteria. A tobit regression model is used to find the effects of institutional ownership on company risk criteria. Therefore, companies who have no research and development expenses and no capital expenditure will not be eliminated from the sample. The variables used in the models of this research are as follows:

Independent variables

The sum of shares held by all institutional stockholders is used to calculate and measure the variables of their ownership percentage. Also, the Herfindahl index, which is the sum of the square of ownership percentage of institutional stockholders, is used to calculate institutional ownership concentration.

Table 1. Descriptive statistics of research variables.

Variable	Mean	Median	Max	Min	Standard deviation
Percentages of institutional ownership	0.5901	0.5781	0.9999	0.2000	0.2026
Institutional ownership concentration	0.3335	0.2852	0.9998	0.0400	0.2207
St. dev. of monthly stock return	10.9666	9.0961	73.7768	0.0000	8.7605
Systematic risk	0.6021	0.3100	10.5900	-5.000	1.3472
R and D	485.6918	0.0000	19386.00	0.0000	1767.7260
Capital expenditure	37135.2000	2931.00	1205105.00	0.0000	107669.80
Company size	12.8642	12.6738	16.9851	9.0676	1.4914
Financial leverage	0.6412	0.6623	1.4371	0.0619	0.1782

Table 2. Statistical results of first secondary hypothesis testing.

Variable	Coefficient	Std. error	t statistic	p-value
Percentages of institutional ownership	4.8638	2.6224	1.8547	0.0643
Company size	0.5760	0.3043	1.9930	0.0489
Financial leverage	3.3000	2.1385	1.5432	0.1235
Intercept	-1.4303	5.1913	-0.2755	0.7831
R^2		0.0185		
Adj. R^2		0.0122		
F statistic		2.8997		
Significant value of F statistic		0.0347		
Durbin-Watson statistic		1.9540		

Dependent variables

The variables of standard deviation of monthly returns and the systematic risk (β) are used as market risk criteria according to Gursoy and Aydogan (2005) and Bargeron et al. (2010). Also, according to Cohen et al. (2007) and Bargeron et al. (2010), R and D, along with capital expenditure are considered as company risk criteria.

Control variables

The natural logarithm of sales (company size) and financial leverage are used as control variables to control other possible factors influencing risk-taking behavior.

ANALYSIS OF FINDINGS

Descriptive statistics

Descriptive statistics of the stated variables are calculated and presented in Table 1 to analyze the data.

Results of testing the first main hypothesis

Four secondary hypotheses are designed and tested to investigate the first main hypothesis. The results of testing these hypotheses are as follows:

First secondary hypothesis (H_{1a})

The results of testing the first secondary hypothesis by using an ordinary least-square regression and panel data method are presented in Table 2.

The meaningfulness level of the used variables shows that the ownership percentage of institutional stockholders and financial leverage has no meaningful effect on the standard deviation of monthly returns. However, a meaningful and positive relationship is found between the company's size and standard deviation of monthly returns. Thus, the first main hypothesis of this research cannot be accepted in 95% confidence interval. It must be mentioned that the results of testing the heteroscedasticity (White test, including cross terms) indicate that there is a heteroscedasticity of the remainders. A White specification has been used to solve this problem.

The results of an autocorrelation test (LM test) also indicate no autocorrelation between the model errors.

Second secondary hypothesis (H_{1b})

The results of testing the second secondary hypothesis by using ordinary least-square regression and panel data method are presented in Table 3.

Table 3. Statistical results of second secondary hypothesis testing.

Variable	Coefficient	Std. error	t statistic	p-value
Percentages of institutional ownership	0.2278	0.3082	0.7391	0.4602
Company size	0.2034	0.0440	4.6202	0.0000
Financial leverage	-0.3862	0.3600	-1.0726	0.2840
Intercept	-1.9008	0.7333	-2.5920	0.0098
R^2		0.0581		
Adj. R^2		0.0519		
F statistic		9.4631		
Significant value of F statistic		0.0000		
Durbin-Watson statistic		1.9341		

Table 4. Statistical results of third secondary hypothesis testing.

Variable	Coefficient	Std. error	Z statistic	p-value
Percentages of institutional ownership	-217.6262	1265.5930	-0.1719	0.8635
Company size	747.0618	174.1551	4.2896	0.0000
Financial leverage	285.8901	1508.6740	0.1895	0.8497
Intercept	-12651.99	2926.6570	-4.3230	0.0000
R^2		0.0809		
Adj. R^2		0.0730		
F statistic		464		
Significant value of F statistic		345		
Durbin-Watson statistic		119		

The meaningfulness level of used variables shows that the ownership percentages of institutional stockholders and financial leverage have no meaningful effect on systematic risk (β). However, a meaningful and positive relationship is found between the company's size and the systematic risk (β). In consideration of the statistical results, the second secondary hypothesis of this research cannot be accepted in 95% confidence interval. Of importance, is that the result of testing the heteroscedasticity indicates no heteroscedasticity of the remainders. The results of an autocorrelation test indicate no autocorrelation between the model errors.

Third secondary hypothesis (H_{1c})

The results of testing the third secondary hypothesis by using the tobit regression model are presented in Table 4. The meaningfulness level of the used variables shows that the ownership percentages of institutional stockholders and financial leverage have no meaningful effect on R and D. However, a meaningful and positive relationship does exist between the company's size and R and D. The Wald test results show the meaningfulness of the regression model. Thus the third secondary hypothesis of this research cannot be accepted in 95% confidence interval.

Fourth secondary hypothesis (H_{1d})

The results of testing the fourth secondary hypothesis by using the tobit regression model are presented in Table 5. The meaningfulness level of the used variables shows that the ownership percentage of institutional stockholders has no meaningful effect on capital expenditures. However, a meaningful and positive relationship is found between the company's size and financial leverage and capital expenditures. The Wald test results show the meaningfulness of the regression model. Thus, the fourth secondary hypothesis of this research cannot be accepted in 95% confidence interval.

In general, the results of testing the first to the fourth hypotheses of this research show that the ownership percentage of institutional stockholders has no meaningful effect on company and market risk criteria. Thus, the first main hypothesis of this research cannot be accepted in 95% confidence interval.

Results of testing the second main hypothesis

Four secondary hypotheses are designed and tested to investigate the second main hypothesis. The results of testing these hypotheses are as follows:

Table 5. Statistical results of fourth secondary hypothesis testing.

Variable	Coefficient	Std. error	Z statistic	p-value
Percentages of institutional ownership	32400.73	35263.65	0.9188	0.3582
Company size	39339.91	5046.236	7.7959	0.0000
Financial leverage	107643.5	41387.89	2.6008	0.0093
Intercept	-603337.9	84538.49	-7.1368	0.0000
R^2		0.0973		
Adj. R^2		0.0894		
Total observation		464		
Censored observation		180		
Uncensored observation		284		

Table 6. Statistical results of fifth secondary hypothesis testing.

Variable	Coefficient	Std. error	t statistic	p-value
Percentages of institutional ownership	5.2731	2.9645	1.7787	0.0759
Company size	0.6309	0.3065	2.0581	0.0401
Financial leverage	4.0057	2.1315	1.8793	0.0608
Intercept	-1.4769	4.9600	-0.2977	0.7660
R^2		0.0230		
Adj. R^2		0.0166		
F statistic		3.6129		
Significant value of F statistic		0.0133		
Durbin-Watson statistic		1.9790		

Fifth secondary hypothesis (H_{2a})

The results of testing the fifth secondary hypothesis, using an ordinary least-square regression and panel data method, are presented in Table 6. The meaningfulness level of the used variables shows that the ownership concentration of institutional stockholders and financial leverage has no meaningful effect on standard deviations of monthly returns. However, a meaningful and positive relationship exists between the company's size and standard deviations of monthly returns. Thus, the fifth main hypothesis of this research cannot be accepted in 95% confidence interval.

The results of testing the heteroscedasticity (White test including cross term) indicate a heteroscedasticity of the remainders. This problem was solved by use of the White specification. The results of an autocorrelation test indicate no autocorrelation between model errors.

Sixth secondary hypothesis (H_{2b})

The results of testing the second secondary hypothesis by using the ordinary least-square regression and panel data method are presented in Table 7.

The meaningfulness level of the used variables shows that the ownership concentration of institutional stockholders and financial leverage has no meaningful effect on the systematic risk (β). However, there is a meaningful and positive relationship between the firm size and systematic risk (β). In consideration of the statistical results, the sixth secondary hypothesis of this research cannot be accepted in 95% confidence interval.

Moreover, the results of testing the heteroscedasticity indicate no heteroscedasticity of the remainders. The results of an autocorrelation test indicate no autocorrelation between model errors.

Seventh secondary hypothesis (H_{2c})

The results of testing the seventh secondary hypothesis by using the tobit regression model are presented in Table 8. The meaningfulness level of used variables shows that the ownership concentration of institutional stockholders and financial leverage has no meaningful effect on R and D. However, a meaningful and positive relationship is found between company size and R and D.

Table 7. Statistical results of sixth secondary hypothesis testing.

Variable	Coefficient	Std. error	t statistic	p-value
Percentages of institutional ownership	0.1042	0.2856	0.3646	0.7155
Company size	0.2004	0.0444	4.5135	0.0000
Financial leverage	-0.3763	0.3630	-1.0364	0.3004
Intercept	-1.7696	0.7168	-2.4688	0.0139
R^2		0.0573		
Adj. R^2		0.0511		
F statistic		9.3169		
Significant value of F statistic		0.0000		
Durbin-Watson statistic		1.9335		

Table 8. Statistical results of seventh secondary hypothesis testing.

Variable	Coefficient	Std. error	Z statistic	p-value
Percentages of institutional ownership	539.4603	1138.2410	0.4739	0.6355
Company size	770.1230	175.2259	4.3950	0.0000
Financial leverage	336.4163	1510.4820	0.2227	0.8238
Intercept	-13283.93	2862.3320	-4.6409	0.0000
R^2		0.0818		
Adj. R^2		0.0738		
Total observation		464		
Censored observation		345		
Uncensored observation		119		

Table 9. Statistical results of eighth secondary hypothesis testing.

Variable	Coefficient	Std. error	Z statistic	p-value
Percentages of institutional ownership	54233.26	32768.85	1.6550	0.0979
Company size	40382.47	5062.021	7.9775	0.0000
Financial leverage	114536.5	41360.36	2.7692	0.0058
Intercept	-619859.7	82279.33	-7.5336	0.0000
R^2		0.1062		
Adj. R^2		0.0984		
Total observation		464		
Censored observation		180		
Uncensored observation		284		

The Wald test results show the meaningfulness of the regression model. Thus, the seventh secondary hypothesis of this research cannot be accepted in 95% confidence interval.

Eighth secondary hypothesis (H_{2d})

The results of testing the eighth secondary hypothesis by using the tobit regression model are presented in Table 9. The meaningfulness level of used variables shows that the ownership concentration of institutional stockholders has no meaningful effect on capital expenditures. However, a meaningful and positive relationship is found between company size and financial leverage and capital expenditures. The Wald test results show the meaningfulness of the regression model. Thus, the eighth secondary hypothesis of this research cannot be accepted in 95%

confidence interval.

In general, the results of testing the fifth and sixth hypotheses of this research show that the ownership concentration of institutional stockholders has no meaningful effect on company and market risk criteria. Thus, the second main hypothesis of this research cannot be accepted in 95% confidence interval.

DISCUSSION

The results of statistical analyses of the collected data show that the ownership of institutional stockholders has no meaningful effect on the risk-taking behavior of companies listed in the Tehran Stock Exchange. In other words, the results of the present research verify none of the existing viewpoints about the monitoring role of institutional stockholders in management decisions. Based on the current literature, the taking of control by stockholders, especially those who are board members, can be considered a potential monitoring role for improving the performance and influencing the possible risks.

Many researchers, such as Gursoy and Aydogan (2002), Gadhoum and Ayadi (2005), and King and Wen (2011) have observed a meaningful relationship between company performance and risk-taking criteria. However, the results of the present study, which are inconsistent with the results of the stated research, have been achieved because the growing organizations and state ownership concentration in Iranian companies, increases in monitoring costs, and different motivations and strategies of beneficial groups in state companies for making investments and achieving success have caused other institutional stockholders to assume insignificant roles in the capital market and in determining management policies. In conclusion, it may be said that the results of the present research have been achieved at the level of all companies and that different results may be gained for each industry. Furthermore, other researchers are recommended to investigate the effects of corporate governance mechanisms, such as board structure, on risk-taking behavior.

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