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Examining relationship between ownership structure and performance of intellectual capital in the stock market of Iran

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Abstract

The subject of government downsizing and privatization is one of the most important issues of today Iran's economy. The agency and public choice theories show that private ownership is superior to governmental ownership and privatization will lead to better performance. This research examines the relation between ownership structure as a measuring criterion of corporate governance and performance of intellectual capital as one of the variables to create competitive advantage and efficiency. Also, the research will answer to the question that to what extent the reformation of the type of ownership on companies and privatization affects the development strategies of organizations in order to achieve greater effectiveness in the performance of intellectual capital. In this regard, information of 80 companies listed in Tehran stock exchange in the period of 2003-2009 was studied. To measure intellectual capital of companies, the Pulik's model has been used. The results of hypothesis tests, using simple and multiple linear regression, indicate that the presence of institutional investors decrease the performance of intellectual capital in the companies; also in private ownership, corporate investors increase the performance of companies' intellectual capital and managerial investors decrease the performance of companies' intellectual capital.

Keywords: Corporate governance; Ownership structure; Privatization; Intellectual capital performance.

Introduction

In recent decades, with the expansion of stock companies and agency theory, the subject of corporate governance has become one of the fundamental aspects of trade which is attracting more attention day to day. The presence of a proper corporate governance system can assist companies in drawing the investors' attention and encourage them to invest and the implement such policies to achieve better financial company's performance. One of control and corporate governance methods is to determine the type of ownership structure and its optimal composition. Studies by Bonin *et al*., (2005), Xu *et al*., (2006) and Ng *et al*., (2009) show that ownership structure and various compositions of owners have different effects on performance of companies, reflection of information into market, and information symmetry. Therefore, corporate ownership structure obviously influences on the infrastructure of corporate governance model of countries. Today, establishment and implementation of a proper corporate governance system which can provide operational effectiveness of companies and appropriate efficiency of citizens' investment, especially for countries planning to implement privatization programs, has become a political and economic necessity. Thus, present research aims to examine the role of company's owners and their incentives to increase intellectual capital value as a modern index for performance and value-creation. In addition, present paper, through considering ownership structure as a part of company management mechanism, studies changes at the field of performance of intellectual capital. Results of research show that decision makers and investors, to achieve optimal performance of intellectual capital for economic units, have to consider a combination of companies' owners. Also, stock market regulators can also control and observe the efficiency of capital achieved by value-create activities.

Literature review

Formation of stock companies with limited liability and partnerships by public, significantly affect the managerial procedures of companies. In the framework of agency theory, the market system is organized so that the owners (shareholders) of companies can assign the management to managers (agents) of the company (Frost *et al*., 2000). With formation of agency relationship, conflict of interests will be created between managers and shareholders. In fact, as Adam Smith (1937) stated, managers do not always act in line with the maximization of shareholders' interests. Conflict of interests, originated from the separation of ownership from management, is represented as agency problem. Berle and Means (1932), Ross (1973) and Prais (1976) considered these issues from different angles and finally Jensen and Meckling (1976) proposed the foundations of agency theory. In the same regard, Fama (1980) believes that the separation between ownership and control, by creating competition between companies, can result in more effective monitoring of individuals and organizations' performance. In Demsetz's (1983) opinion, transferring management of institutions from owners who are mainly thinking of increased wealth to managers who are confronted with the overall performance of institution will lead to increased efficiency of the institution. Fama and Jensen (1983) have shifted their attention to the costs that high ratio of managerial ownership may cause for company.

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Therefore, such regulatory mechanisms should be implemented to cover the gap between ownership and control (John & Senbet, 1998). Among available mechanisms to mitigate the agency problem and reduce information asymmetry between shareholders and managers is to design and implement a corporate governance system. Definitions of corporate governance mainly include two limited and expanded views. The limited view which is bounded to the relationship between company and shareholders is represented as agency theory, and the extended view which closely considers the rights of all stakeholders is represented as stakeholder theory. Theoretically, it is expected that the features of a corporate governance system influence on the financial performance of the companies; because the effective corporate governance can decrease the inappropriate consequences of conflict of interest, such as abuse of power, between managers and owners. One of the important issues of corporate governance is to know ownership structure and determine its optimal combination, so that by reducing agency costs, improve performance of company. Considering the combination of Shareholders of companies in investment decisions can be a suitable guide for investors, and ignoring it may make mistakes in their long-term investment decisions.

Some studies in the field of ownership types indicate an improvement in performance of institutions that have tried to change their ownership or implemented privatization (Boubakri *et al*., 2005). Agency and public choice theories believe that the performance of privatized commercial units will increase on average. Successful implementation of privatization programs depends on establishment of a proper corporate governance system that provides efficiency in the performance and the public investment. Klapper and Love (2002), demonstrate that appropriate corporate governance will enhance the performance efficiency and market value of companies.

Quality of corporate governance is assumed to be present during all stages of value creation in the company. In recent years intellectual capitals are gaining importance in the corporate governance and are considered as an integral part of corporate value creation. Thus, it appears that the ownership structure can be effective on performance of intellectual capital of companies. In other words, the type of ownership governing the companies can be efficacious on the change strategy of organizations to achieve more effective performance in intellectual capital. Today, concept, role, and value of knowledge in the economy and trade have gone under many changes. Today's world has left the industrial economy behind and has entered into the knowledge-based economy (Chen Goh, 2005). This economy has modified the nature of company's activity which leads to changes in value and performance parameters of companies. Accordingly, implementing an effective knowledge management strategy and switch to a knowledge-based organization are critical conditions of organizations' success and survival; thus, it has opened a new area of study and research in management (Hung *et al*., 2005).

In a simple classification, intangible assets can be divided into two categories and one of its most important components is intellectual capital. Intellectual capital is defined as the total amount of capital or knowledge-based ownership right that a company owns (Dzinkowski, 2000). In Sullivan's (2000) opinion, intellectual capital is a kind of knowledge that can be turned into profit. Andriessen and Stem (2004), believe that intellectual capital includes intangible resources owned by a company that provides competitive advantage for the company and their combination is looking to the future benefits. According to Kujansivu and Lonnqvist (2008), intellectual capital consists of a variety of valuable intangible resources of an organization. Edvinson and Malon (1997) and Marr *et al*., (2004) argue that intellectual capital is the viable information and knowledge for work, in order to create value (Vasile, 2008). In other words, intellectual capital provides a completely new model for observing the real value of organizations that by using it the future value of company can also be calculated. In fact, in the current knowledge-based societies the efficiency of intellectual capital is much more than the efficiency of financial capital which have been used and it is taken into consideration (Bontis *et al*., 2000). As a result, tendency to measure the true value of intellectual capital has increased among the companies, shareholders, and other stakeholder groups more than ever.

Therefore, for a better and more accurate assessment of users about managers' performance, examining the relationship between ownership structure and performance of the company's intellectual capital seems to be necessary; because by discovering how different combinations of ownership affect the performance of the company's intellectual capital, proper measures can be taken to make the company's intellectual capital's performance better. Thus, applying appropriate practices of managing a company can improve its financial performance, which in turn increases the value of this company's capital in the form of performance of intellectual capital (Saleh *et al*., 2008). In Table (1), some recent studies on subject of ownership structure and intellectual capital of companies are provided.

Model and methods of variables measurement

The overall regression model used in the research is as follows:

$$VAIC_{it} = \beta_0 + \beta_1 \text{ Institutional Ownership}_{it} + \beta_2 \text{ Corporate Ownership}_{it} + \beta_3 \text{ Managerial Ownership}_{it} + \beta_4 \text{ Foreign Ownership}_{it} + \varepsilon_{it} \quad (1)$$

In this research, to normalize the distribution of variable dependent on intellectual capital and its

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Table 1. History of ownership structure and intellectual capital studies

Row	Research subject	Researchers	Year	Findings
1	Agency theory and value of company in India	Kumar	2004	• Between the performance of company and institutional ownership and managerial ownership there is a non-linear relationship. • Corporate ownership has an impact on performance. • Foreign ownership has no significant effect on performance. • Ownership structure is not built-in.
2	Examining the relationship between intellectual capital and performance	Huang and Hsueh	2007	• There is a positive correlation between three components of intellectual capital and commercial performance. • The highest correlation belongs to human capital and then to the customer capital. • Also, there is a positive correlation between the three components of intellectual capital.
3	Examining the relationship between ownership structure as measure criterion for corporate governance and company performance	Imam and Malik	2007	• There is a positive and significant relationship between corporate ownership and performance. • There is a negative and significant relationship between concentration of managerial ownership and interest-dividing policy.
4	Intellectual capital and financial returns companies	Pew Tan, *et al*.	2007	• There is a positive and significant relationship between intellectual capital and Current and future financial returns. • There is a positive relationship between The growth rate of intellectual capital and future returns. • The impact of intellectual capital on the financial efficiency of different industries is various.
5	Corporate governance, ownership structure and intellectual capital disclosures: Malaysian Evidence	Gan, *et al*.	2008	• There is a significant and negative relationship between family ownership and disclosure of intellectual capital. • There is a significant and positive relationship between governmental ownership and disclosure of intellectual capital.
6	Ownership structure and intellectual capital performance	Saleh, *et al*.	2008	• Family and governmental ownerships have a negative influence on the performance of intellectual capital. • Foreign and managerial ownership have a positive impact on performance of intellectual capital.
7	Examining the Relationship between intellectual capital and market value	Wang	2008	• There is a positive relationship between intellectual capital and market value.
8	Examining the relationship between internal (managerial) ownership and institutional ownership on performance	Shing-Ping and Tsung-Hsien	2009	• There is a reverse relationship between internal (managerial) ownership and performance. • There is a negative and significant relationship Between governmental-institutional ownership and corporate-institutional ownership with performance.
9	Board structure and corporate performance	Zainal Abedin, *et al*.	2009	• There is a positive relationship between composition and size of board of directors and intellectual capital. • A negative relationship between property managers and the CEO duality and performance of intellectual capital.

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components, the conversions of square root, square, and Ln are used. The variables used in the study were defined and calculated as follows. The important point about the calculation of above variables is that all of them were measured annually.

Independent variable

In this research, the ownership structure is considered as an independent variable. Ownership structure, similar to research by Kumar (2004), is divided into two levels of institutional and private ownership, in which the private ownership also is divided into three classes of corporate, managerial, and foreign investors.

*Institutional Ownership***:** it is the total percentage of shares held by governmental and public companies out of the total equity shares of company, including insurance companies, financial institutions, banks, governmental companies, and other sections of government. This variable is used with the same definition in earlier studies (Kumar, 2004; Fernando *et al*., 2007; Osman Imam & Malik, 2007; Rubin, 2007; Tsai & Gu, 2007; Cornett *et al*., 2007 & 2008; Elyasiani & Jane Jia, 2008).

*Foreign ownership***:** it is the total percentage of shares held by institutions and foreign investors out of the total equity shares. This variable is used with the same definition in earlier studies (Kumar, 2004; Aydin *et al*., 2007; Osman Imam & Malik, 2007).

Corporate ownership: it is the total percentage of shares held by the components of stock companies out of the total equity shares and includes all kinds of stock companies, except those stated in the previous cases. This variable is used with the same definition earlier (Kumar, 2004; Earnhart & lizal, 2006).

Managerial ownership: it is the total percentage of shares owned by board of directors. This variable is used with the same definition in earlier studies (Kumar, 2004; Rose, 2005).

Private Ownership: includes corporate, managerial, and foreign investors who are confronted with institutional investors. The classification has been selected from research of Kumar (2004).

Dependent variable

Intellectual capital is considered as a dependent variable in this research. In the literature of intellectual capital, several models have been proposed to measure it. By review of the intellectual capitals' history, we can divide the current methods of measurement, which can better perform the measurement, into four main categories according to the following Table 2.

In this research, the value added intellectual coefficient (VAIC) model, developed by Pulik Ante (2000), is applied to measure the intellectual capital as the performance of a company. The Pulik's model is based on the assumption that the measurement and development of value added of a company may affect the company's market value and the better the available resources of company are taken into use, the viability of a company's value creation will be higher. This method is founded on the principle that value creation triggers from two primary factors: physical capital resources and intellectual capital resources. In fact, value added intellectual coefficient calculates the absolute efficiency of value creation related to all resources being used. In the pulik's model, intellectual capital is defined into three components of capital employed (physical and financial), human capital, and structural capital. These components have a very important role in value growth of a company and costs spent on them are taken into account as investments. The same model has been used earlier (Ho & Williams, 2003; Shiu, 2006; Nazari & Herremans, 2007; Bannany, 2008; Gan & Saleh, 2008; Saleh *et al*., 2008; Bharathi, 2008; Pew Tan *et al*., 2007 & 2008; Nik & Amin Ismail, 2009; Zeinal Abedin *et al*., 2009). The procedure of calculating the value added intellectual capital Coefficient is as following:

Value added (VA)

VA = P + I + C + D + A + DIV + T + MI (2)

P: Retained Profit for the year; I: Interest Expense;
C: Salaries and Wages; D: Depreciation; A: Amortization;
DIV: Dividend; T: Tax; MI: Minority's Share of Profit;

Recently, added value (VA) is calculated using information contained in the annual report as follows:

VA = OP + EC + D + A (3)

OP: Operating Profits; EC: Total Employee Expenses; D + A: Depreciation and Amortization

Capital Employed Efficiency (CEE)

CEE= VA / CE= (value added) / (capital employed) (4)

CE = (book value of total assets) - (intangible assets) = (financial assets) + (physical assets) (5)

Human Capital Efficiency (HCE)

HCE = VA / HC = (value added) **/** (human capital) (6)

HC = total salaries and wages

Structural Capital Efficiency (SCE)

SCE= SC / VA = (structural capital) / (value added) (7)

Table 2. Classification of intellectual capital measurement methods

Return on Assets Models	Market Capitalization Models
Economic Value - Added, Calculated Intangible Value, Value Added Intellectual Coefficient, Knowledge Capital Earning.	Tobin`s Q, The Invisible Balance Sheet, Market-to- Book Value, Investor Assigned Market Value.
Direct Intellectual Capital Models	Scorecard Models
Technology Broker, Citation-Weighted patents, Human Resource Costing and Accounting, Inclusive Value, Accounting for the future, HR statement, The value explorer, Intellectual Asset Valuation, Total Value-creation, Financial Method of Intangible Assets Measuring.	Balance Scored Card, Human Capital IQ, Scandia Navigator, IC-Index, Intangible Asset Monitor, Knowledge Audit Cycle, Meritum Guidelines, Value Chain Scoreboard, Danish Guidelines, Business IQ, Holistic Value Approach, Knowledge Audit Cycle, Measuring and Accounting Intellectual Capital.

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Table 3. Regression results of the first main hypothesis

Hypothesis	R	R Square	Adjusted R Square	Durbin-Watson	T-Statistics	F-Statistics	Sig of the Model	Confirmed Hypothesis
The relationship between institutional ownership and intellectual capital	-0.620	0.385	0.383	1.771	-18.673	348.698	0.00	H_1
The relationship between institutional ownership and physical capital	-0.685	0.469	0.468	1.637	-22.185	492.170	0.00	H_1
The relationship between institutional ownership and human capital	-0.831	0.691	0.690	2.318	-35.324	1247.77	0.00	H_1
The relationship between institutional ownership and structural capital	-0.731	0.534	0.533	2.265	-25.282	639.178	0.00	H_1

Source: (Researcher's findings)

SC= VA -HC = (value added) - (total salaries & wages) (8)

Intellectual Capital Efficiency (ICE)

ICE = HCE + SCE (9)

Value Added Intellectual Coefficient (VAIC)

VAIC= ICE + CEE = HCE + SCE + CEE (10)

Hypotheses

1. There is a relationship between institutional ownership and performance of intellectual capital.
2. There is a relationship between private ownership and performance of intellectual capital.

This hypothesis will be tested in the form of the following sub-hypotheses:

2-1. There is a relationship between corporate ownership and performance of intellectual capital.

2-2. There is a relationship between managerial ownership and performance of intellectual capital.

2-3. There is a relationship between foreign ownership and performance of intellectual capital.

Methodology

This research, based on its purpose, is considered as applied research and in terms of the method, is considered as correlation analysis. In this study, in order to collect the required data, hypotheses, and theoretical foundations of research, methods of referring to library and archives have been used. Research tools, including Financial statements, accompanied notes, and financial reports of companies are resources that have been published by the Tehran Stock Exchange.

The statistical population of the research includes all companies listed in Tehran Stock Exchange in the years 2003 to 2009, with regard to the following conditions:

a. They should have been accepted in Tehran Stock Exchange before the financial year 2003 and do not exit the stock exchange panel by the end of financial year 2009.
b. The end of their financial year should coincide with the end of March, and companies should not change their financial year during the period in question.
c. The subject companies, during the period of study, should have continuous activity and its stock being traded.
d. They should not be of any investment companies (holding) and financial intermediary.
e. They should present the Financial Information for the period 2003 to 2009 required in this research and be profitable.

Given these considerations, those companies that did not meet the above conditions were removed and the remaining 80 companies per year and a total of 560 year-company were selected for a period of seven years as a statistical sample and the required data were extracted.

In this research, analysis of data was performed using simple and multiple linear regression and analysis of variance (ANOVA). To examine the validation of the normal distribution of data and remainders hypothesis the Kolmogorov-Smirnov test has been used, and to examine the validation of errors lack of autocorrelation hypothesis the Durbin-Watson test has been used. Correlation coefficient is a criterion to determining the strength of relationship and the type of relationship (direct or reverse). Determination coefficient shows that what percentage of the changes of the dependent variable is explained by the independent variable. Significance test of the regression equation using the F statistic, and significance test of regression coefficients using the T statistics have been taken as well. In the multiple regressions, the lack of multicollinearity between independent variables has been made sure of.

Results of hypotheses testing

The first main hypothesis

The first main hypothesis test results are shown in the Table 3. According to Table (3), since the independent variable coefficient is negative and significant in all conditions, institutional ownership has a reverse relationship with performance of intellectual capital and each of its components. In other words, increasing institutional ownership, performance of intellectual capital and its components is reduced and therefore weakened. Also, generally, the adjusted coefficient of determination indicates that approximately 38 percent of changes in intellectual capital variable are covered and explained by independent institutional

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Table 4. Regression results of the first sub-hypothesis

Hypothesis	R	R Square	Adjusted R Square	Durbin-Watson	T-Statistics	F-Statistics	Sig of the Model	Confirmed Hypothesis
The relationship between corporate ownership and intellectual capital	0.484	0.235	0.233	1.582	13.075	170.957	0.00	H_1
Relationship between corporate ownership and physical capital	0.398	0.158	0.157	1.771	10.240	104.853	0.00	H_1
Relationship between corporate ownership and human capital	0.565	0.470	0.466	1.721	23.625	558.128	0.00	H_1
Relationship between corporate ownership and structural capital	0.490	0.240	0.238	1.529	13.266	175.999	0.00	H_1

Source: (Researcher's findings)

capital variable. Finally, this theory has been accepted and the regression model is presented as follows:

$$Ln(VAIC)_{it} = 9.671 - 5.284\ (Institutional_{it}) + e_{it} \quad (11)$$

$$\sqrt{CEE}_{it} = 0.72 - 0.392\ (Institutional_{it}) + e_{it} \quad (12)$$

$$Ln(HCE)_{it} = 9.096 - 6.650\ (Institutional_{it}) + e_{it} \quad (13)$$

$$(SCE)^2_{it} = 0.764 - 0.442\ (Institutional_{it}) + e_{it} \quad (14)$$

The second main hypotheses

To test this hypothesis, we first test the following sub-hypotheses:

The first sub-hypothesis: Test results of this hypothesis are presented in the Table 4. Table (4) shows that as the independent variable coefficient is significant and positive in all conditions, thus corporate ownership has a direct relationship with performance of intellectual capital and each of its components. In other words, increasing corporate ownership, performance of intellectual capital and its components is increased and therefore it will be improved. Also, in general, the adjusted coefficient of determination indicates that approximately 23 percent of changes in intellectual capital variable are covered and explained by independent corporate ownership variable. Finally, this theory has been accepted and the regression model is presented as follows:

$$Ln(VAIC)_{it} = 4.707 + 4.693\ (Corporate_{it}) + e_{it} \quad (15)$$

$$\sqrt{CEE}_{it} = -1.126 + 0.637\ (Corporate_{it}) + e_{it} \quad (16)$$

$$Ln(HCE)_{it} = 0.127 + 0.566\ (Corporate_{it}) + e_{it} \quad (17)$$

$$(SCE)^2_{it} = -2.315 + 1.501\ (Corporate_{it}) + e_{it} \quad (18)$$

The second sub-hypothesis: Test results of this hypothesis are shown in the Table 5 as below: From Table (5) it is concluded that since the independent variable coefficient is negative and significant in all conditions, thus managerial ownership has a reverse relationship with performance of intellectual capital and each of its components. In other words, increasing the managerial ownership, performance of intellectual capital and its components is reduced and therefore will be weakened. Also, in general, the adjusted coefficient of determination indicates that about 50 percent of changes in intellectual capital variable are covered and explained by independent managerial ownership variable. Finally, this theory has been accepted and the regression model is presented as follows:

Table 5. Regression results of the second sub-hypothesis

Hypothesis	R	R Square	Adjusted R Square	Durbin-Watson	T-Statistics	F-Statistics	Sig of the Model	Confirmed Hypothesis
The relationship between managerial ownership and intellectual capital	-0.707	0.500	0.499	2.201	-23.625	558.128	0.00	H_1
Relationship between managerial ownership and physical capital	-0.504	0.254	0.253	2.008	-13.791	190.189	0.00	H_1
Relationship between managerial ownership and human capital	-0.628	0.394	0.393	2.098	-19.059	363.257	0.00	H_1
Relationship between managerial ownership and structural capital	-0.452	0.204	0.203	1.712	-11.967	143.215	0.00	H_1

Source: (Researcher's findings)

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$Ln(VAIC)_{it} = 7.575 - 5.130 (Managerial_{it}) + e_{it}$ (19)

$\sqrt{CEE}_{it} = 0.382 - 0.344 (Managerial_{it}) + e_{it}$ (20)

$Ln(HCE)_{it} = 7.603 - 4.475 (Managerial_{it}) + e_{it}$ (21)

$(SCE)^2_{it} = 0.378 - 0.320 (Managerial_{it}) + e_{it}$ (22)

The third sub-hypothesis: Foreign ownership is very limited in Iran and most of the developing countries. However, this situation is changing rapidly and most of these countries are planning to open their capital market to foreign investors. In the present research, due to the low number of major foreign ownership in the subject companies and incapability of the software to estimate this group of owners, no test has been performed. Therefore, this type of ownership has not been calculated and no comment has been offered on this hypothesis.

The second main hypothesis test results

The second main hypothesis test results are shown in the Table 6. It shows that since the independent variable coefficient in managerial ownership is negative and significant in all conditions and the independent variable coefficient in corporate ownership is positive and significant in all conditions, therefore, managerial ownership has a reverse relationship with performance of intellectual capital and each of its component and corporate ownership has a direct relationship with performance of intellectual capital and each of its components. In other words, in private ownership, managerial investors will reduce and corporate investors will improve the performance of intellectual capital. Also, in general, the adjusted coefficient of determination indicates that approximately 69 percent of changes in intellectual capital variable are covered and explained by independent managerial and corporate ownership variables. Finally, multiple regression model is presented as follows:

$Ln(VAIC)_{it} = 7.482 - 5.037 (Managerial_{it}) + 7.539 (Corporate_{it}) + e_{it}$ (23)

$\sqrt{CEE}_{it} = 0.332 - 0.294 (Managerial_{it}) + 0.348 (Corporate_{it}) + e_{it}$ (24)

$Ln(HCE)_{it} = 7.504 - 4.376 (Managerial_{it}) + 0.689 (Corporate_{it}) + e_{it}$ (25)

$(SCE)^2_{it} = 0.318 - 0.260 (Managerial_{it}) + 0.416 (Corporate_{it}) + e_{it}$ (26)

Discussion and conclusion

In this research, the ownership structure has been studied in the forms of institutional and private ownerships. The first main hypothesis test's results indicate a negative and significant relationship between institutional ownership and performance of intellectual capital. This result is consistent with the research of Saleh *et al*., (2008), and inconsistent with the research of Gan *et al*., (2008). The reason behind this result could be stated as that institutional investors, unlike private investors who are looking for maximizing profits, have multiple objectives of economic, financial, and social-political which are sometimes in conflict with the objective of maximizing profits. In other words, they value achieving the objectives more than maximization of profit and thus they are less efficient.

The second main hypothesis test results indicate that there is a positive and significant relationship between corporate ownership and performance of intellectual capital. Considering corporate ownership in the field of private investors, this result is inconsistent with the researches of Saleh *et al*., (2008) and Gan *et al*., (2008). The cause of this finding can be stated as that corporate investors, because of a tendency to more profit, by long-term investments make the company benefit more in future; which in long-term will bring about competitive advantages and will result in higher efficiency. Also, the results show that there is a negative

Table 6. The second main hypothesis test results using multiple regression

Hypothesis		R	R Square	Adjusted R Square	Durbin-Watson	T-Statistics	F-Statistics	Sig of the Model	Collinearity Statistics		Result
									Tolerance	VIF	
Relationship between private ownership and intellectual capital	Managerial	0.832	0.693	0.691	1.513	-18.091	627.434	0.00	0.980	1.020	H_1
	Corporate					27.586			0.980	1.020	
Relationship between private ownership and physical capital	Managerial	0.721	0.519	0.517	1.689	-14.505	300.702	0.00	0.980	1.020	H_1
	Corporate					17.520			0.980	1.020	
Relationship between private ownership and human capital	Managerial	0.635	0.404	0.402	2.018	-18.578	188.638	0.00	0.980	1.020	H_1
	Corporate					2.981			0.980	1.020	
Relationship between private ownership and structural capital	Managerial	0.746	0.557	0.555	1.530	-12.875	349.502	0.00	0.980	1.020	H_1
	Corporate					21.035			0.980	1.020	

Source: (Researcher's findings)

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and significant relationship between managerial ownership and performance of intellectual capital. This result is consistent with the research of Zeinal Abedin *et al*., (2009) and inconsistent with the research of Saleh *et al*., (2008). The cause of this issue can be stated as that in these companies there is no supervision on the performance of managers from the board of directors; since there is no separation between ownership, control, and management of company and this will increase the agency cost. Managerial owners seek to increase their personal interests and by decreasing the investments will cause the capital value of company to decrease in long term which as a result has a negative impact on performance of intellectual capital. Thus, the separation between managers' ownership and their duties in the board of directors has a direct effect on performance of company. Finally, we reach the conclusion that the number of corporate investors should increase in private ownership; because they improve the performance of intellectual capital.

In a general conclusion, if we compare the institutional ownership and private ownership, it can be said that the companies in which institutional investors are under control have a poor performance of intellectual capital and as a result, it is better to transfer the majority of ownership to private investors such as corporate investors which itself indicates the importance of privatization. Thus, considering the low efficiency of institutional ownership, it is necessary that government and its related organizations accelerate the procedure of privatization and reformation of company's ownership structure and by defining an organized and powerful system to efficiently control organizations and companies and by defining supportive policies for private sector, help to improve performance and increase the value of economic units. Also, the results show that in institutional and private ownership the highest correlation coefficient belongs to human capital. As a result, we can say that the efficiency of human capital, compared to other components of intellectual capital, is more effective. Finally, we reach the general conclusion that there is a significant relationship between ownership structure of companies and their performance of intellectual capital.

Proposals based on the research findings

In transferring the production units to private sector, in addition to ownership, the unified management should also be taken into consideration. In fact, the transfer of ownership without proper management is a futile effort.

Along with the enforcement of privatization programs, it is necessary that specialized and scientific institutions and associations of accounting and specialized institutions of capital market in Iran, along with other countries, design proper tools for evaluating and reporting of intellectual capital information and consider measurement, presentation, and reportage of the aspects of intellectual capital in the standards of accounting, so that the accounting system would be able to determine the true value of companies. By applying this approach in financial reporting, for acceptance of new companies and transferring shares of governmental companies into capital market, the gaps and information asymmetry between investors and stock publishers will be resolved to an extent and investors, by a better understanding of the future of company, can make proper decisions.

A part of the remuneration of the board of directors is better to be dependent on the value-added achievement by fortification of intellectual capital.

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