



# The study of relationship between intellectual capital and its growth rate with earning management (in accepted companies in Tehran Stock Exchange)

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## ABSTRACT

Since the intellectual capital provide a new and perfect model to observation of organizations real value, therefore, the tendency to evaluation of intangible assets true value of intellectual capital has increased in companies, shareholders (investors) and other stakeholders. This study investigates the relationship between the intellectual capital and its growth rate with earning management in accepted companies in the Tehran Stock Exchange. The statistical society of study includes all Tehran Stock Exchange firms after put of certain conditions sampling was undertaken. Finally, during the period 2006 to 2013, 121 companies selected. The methodology of research is descriptive. Using a modified Jones discretionary accruals calculated as a measure to detect earnings management and then placed in the regression model defined earnings management, Hypotheses were tested. With the use of regression analysis the research hypotheses have been carried out. Also a number of control variables consist of Size and M/B have been used. The results of this study show that there is a significant relationship between intellectual capital and earnings management but there is a significant relationship between intellectual capital growth and earnings management.

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## Introduction

The earning management is defined as a process of taking aware steps in the range of accepted principles of accounting for reaching the reported profit to the considered profit level, the action of approximating the reported profit to the ultimate profit level through accounting manipulation (MolaNazari and Karimi Zand, 2007). Today, the earning management is one of controversial and interesting among the accounting researches, because the investors pay a lot of attention to the profit amount as one of the important factors.

The current world is the knowledge era. These days the natural belongings and endowments is not the prosperous key for the organizations but having the mental and management investment is the key factor to success in the domain of challenging and ruffled environment. These kinds of belongings have an effective role on the existence of long-term competitive profit. The companies which can diagnose these belongings well and manage them, can have a better performance in comparison to their competitors. Therefore, this research seeks to enrich the effective factors on the earning management that one of them is the intellectual capital. (Zahedi and LotfiZadeh, 2008)

## Stating the problem

One of the basic problems of traditional accounting system is its inability measuring and reporting the information related to the non-obvious the assets and hidden values of the company. Therefore this event caused a big gap between the office value and market value of the companies, that this observed increasing difference led to giving more attention to the non-reflected sources in the balance sheet. One of the source that is not reflected in the balance sheet is the intellectual capital which damages the financial invoices and it is believed that the limitation of invoices creates difficulty in accurate explanation of the values of the company. Therefore, based on the

importance of the intellectual capital for the investors and researchers, it is possible to become familiar with the purposes and motivations of it in the management of the profit via examining its effect on the behavior of the managers in manipulating the results of the company. According to the mentioned information, on this research tries to deal with this question that weather there is a meaningful relationship between the intellectual capital and its growth rate with management of the earning?

## The importance of the research

The prerequisite for the market proficiency is to give information which is relevant, reliable and accessible to all people so that, it is possible to observe justice and accessing the information for all in the process of decision making by the investors.

Therefore, the more recognizing the effective factors the motivations of the earning management, the more modification of the structures which are reliable and impartial for the decision makers as a result of distributed information. The results of this research work can be a step for eliminating the current weaknesses in measuring the intellectual capital and testing the growth rate and it is an effort for analyzing the invoices and interfering purposefully in them for reaching to the expected profit level, so that while expanding the theoretical literature in this field, provides suitable information for financial decision makers.

## The concept of intellectual capital

Stuart (1997) believes that the intellectual capital includes knowledge, information, mental belonging and experience which can be used for creating wealth. The intellectual capital is the mass mental ability or the key knowledge as a whole. In fact it is a collection of knowledge, information, mental property,

experience, competition and organizational learning that can be used for creating wealth.

### The concept of earning management

Schipper (1989) has mentioned earning management as follows: "the purposeful interference the out financial report process for achieving the private profits". (Nikumaram and colleagues, 2009)

DeGeorge and pental (1993) defines the earning management as an artificial manipulation of the profit by the management for reaching the expected level of profit for some specific decisions (like the anticipation of analysts or speculating the former profit process for predicting the future profits). (Mashayekhi, Karami ,2005)

### Review of the literature

Nikumaram and colleagues (2009) evaluate 9 models of earning management. The evaluation in this research is based on the capability of each model on the point of facing with two kinds of known errors in statistical deduction called first kind of error (Alpha) and second kind of error (Beta). The findings show that, the models investigated, generally the models based on regression methods have more power to other three Hili, Deangelo and modulated models. From the regression methods, the main Jones method has less power to state the earning management , but the modulated method of Jones (1995) has more reliable results in discovering the earning management .

Tan plowman and Hancuck (2007) in their research called "intellectual capital and financial proficiency of the companies" the three part relationship between (human, structural investment, communicational investment) on the proficiency of stock holder's salaries (Rot), the interest of each stock (Eps). The proficiency of ordinary stock (ASR), is being measured. The results show that firstly between the intellectual capital of the company and the financial proficiency of the companies. There is a positive and meaningful relationship and secondly the effect of intellectual capital in the financial proficiency of companies is different in various industries.

chen Kaimankis (2007) studied the relationship between the intellectual capital and the proficiency of the companies which are knowledge-oriented with average size. The findings indicated that the mutual relationship of different stages of mental belongings in the companies with average size is different in some aspects with big companies. Also the experiments data show that the specific stages of the intellectual capital has a positive effect on the performance of companies.

Daniel Zegil and Alic Malul (2010) in a research called "the analysis of the value added of the intellectual capital as a criterion for intellectual capital and the performance of companies" with the use of police model examines the criteria of the financial, economical performance and investment market with intellectual capital . The results indicated a positive and meaningful relationship between the intellectual capital and the criteria of operational profit, pure profit to belongings and the value of market to the pure belonging of the company.

Lee and whiting (2011) investigated the relationship between revealing the intellectual capital and investment cost (debt cost, stock holders' sarary cost) in 70 Australian companies in 2008. The results from the regression analysis indicated that the effect of revealing the human investment in comparison with internal and external investment has the most effective influence on changeability.

### The research hypothesis

Hypothesis (1): There is a relationship between intellectual capital of the company and earning management

Hypothesis (2): There is a relationship between the growth rate of intellectual capital of the company and earning management.

### The subjects and sampling method

The subjects include all the companies accepted in the securities stock market of Tehran. Because of the expansion of the subjects the situations below are put for selecting the subjects.

- 1) Their stock must be traded from the beginning of 2006 up to the end of 2012.
- 2) The stoppage in the stock dealing should be at most 6 month.
- 3) The company must not be among those investing, servicing or intermediary companies, because their action is different from other industries.
- 4) The financial year of the company must finish at the end of march and the company must not have financial periodic change which causes the increase or maintenance of comparing ability of financial information.

Paying attention to the mentioned conditions leads to the selection of 121 companies for the research and the period of the research is limited to the years of 2006 to 2012.

### Method

This research is practical and descriptive and correlative on the basis of content. It is a case study on the basis of its type of gathering the information. It is periodic – correlative on the basis of its test. The multi-regression is being used for analyzing the data and testing the hypothesis.

### Research variable

#### Dependent variables: earning management

In this research for measuring the earning management , the modulated model of Jones is used, since the modulated model of Jones, is a stronger and more suitable test for examining the earning management . This model is as follows:

$$TAC_{it} / TA_{it-1} = a_0(1/ TA_{it-1}) + a_1 ( \Delta REV_{it} - \Delta REC_{it} )_{it} / TA_{it-1} + a_3(PPE_{it} / TA_{it-1}) + \epsilon_{it}$$

in which

$TAC_{it}$  = equals all the promised products (the profit before non-supervene products minus the cash operation) in the t year for i company.

$TA_{it-1}$  = the whole belongings in the year t-1

$\Delta REV_{it}$  = the income of year t minus the income of year t-1 for the company

$\Delta REC_{it}$  = the pure amount of accounts and received documents in the year t minus the pure amount of accounts and received documents in the year t-1 for the company i.

$PPE_{it}$  = gross value of the properties, machinery and equipment in the year t for the company i.

$\epsilon_{it}$  = the whole error of regression

Then these correlations would be achieved from the regressions of the company for measuring the amount of promised belongings for each sample company via subtracting the promised non-managed belongings.

$$TAEM_{it} = TAC_{it} / TA_{it-1} - a_0(1/ TA_{it-1}) - a_1 ( \Delta REV_{it} - \Delta REC_{it} ) / TA_{it-1} - a_3(PPE_{it} / TA_{it-1})$$

$TAEM_{it}$ : the managed components of the promised belongings of the sample company (in the year t which equals with the whole promised optional belongings. (Bulo and Hosseini,2007)

### Independent variables: intellectual capital and the growth of intellectual capital

The value of the company's intellectual capital can be indicated with the use of this formula: (Anvari Rostami and Seraji,2005)

$$IC = \frac{MV_{it} - BV_{it}}{1 + I_{inf}}$$

$MV_{it}$  = the value of stock market in the period t.

$BV_{it}$  : the office value of the company (the salary of stock holders).

$I_{inf}$  : the rate of inflation in the period t.

In addition the variable of the growth of intellectual capital is considered as an independent variable. The growth of intellectual capital in the period t would be measured as follows:

$$ICG_{it} = \frac{IC_{it} - IC_{it-1}}{IC_{it-1}}$$

$ICG_{it}$  : the growth of the intellectual capital of the company i in the period t.

$IC_{it}$  : is the value of the intellectual capital of the company up to the end of the year t.

$IC_{it-1}$  : the value of the intellectual capital of the company in the beginning of the year t.

### The control variables

(SIZE): The natural logarithm of the value of stock market.

M/B: the connection of property value to the office value of the properties.

### Research findings

For examining closely the relationships between the research variables, two dependent variable and control variables or the dependent variables of the research would be tested simultaneously in the form of model and regression.

$$TAEM_{it} = \alpha_0 + \alpha_1 IC_{it} + \alpha_2 ICG_{it} + \alpha_3 SIZE_{it} + \alpha_4 MB_{it} + \varepsilon_{it}$$

#### Descriptive Statistics after standardization

	N	Maximum	Minimum	Mean
TEAM	847	3.60	-3.84	.0014
IC	847	8.54	-8.26	2.47
ICG	847	3129.44	-171.13	4.32
SIZE	847	7.72	.0000	5.10
MB	847	77.17	-103.12	-2.86

### The statistical statement of the first hypothesis is as follows:

H<sub>0</sub>: There is no relationship between the intellectual capital of the company and the earning management.

H<sub>1</sub>: There is no relationship between the intellectual capital of the company and the earning management.

Table: Results of statistical analysis and modeling assumptions

Multicollinearity statistics		P-Value	T-student	Coefficients	Variable
VIF	Tolerances	.26	2.23	.414	(Constant)
1.1	.906	.0000	4.75	.029	IC
1.02	.975	.04	2.02	.0000	ΔIC
2.05	.488	.01	2.52	.008	MB
2.09	.477	.0000	9.61	.024	SIZE
8.5	F	.0000	Sig		
1.92	(D-W)	.29	(R <sup>2</sup> )		
.556		The probability of the Kolmogorov - Smirnov (K-S)			

### The statistical statement of the second hypothesis is as follows:

H<sub>0</sub>: There is no relationship between the growth rate of the intellectual capital and the earning management.

H<sub>1</sub>: There is no relationship between the growth rate of the intellectual capital and the earning management.

### Conclusion

According to the results in the tables above, it is observed that the independent variable IC on the point of statistics is on the error level of 5 percent and also the amount of ΔIC variable is less than 5 percent and it is meaningful on the 95 percent reliability level. These results show that in the comprehensive model, there is a relationship between the independent variable (intellectual capital) with the dependent variable of the research. It means the first hypothesis is proved. There is also a meaningful relationship between the independent variable (the growth rate of intellectual capital) with the dependent variable of the research (earning management). Hence, the second hypothesis of the research is also accepted.

Because of the fact that the gained amount for the control variable, the size of the company and the connection of market value to the office value is less than 5 percent. Hence, there is a meaningful relationship between these variables and the earning management .

Hypothesis	Test result	Final result
First hypothesis	Proved	There is a relationship between the intellectual capital of the company and the earning management
Second hypothesis	Proved	There is a relationship between the growth rate of the intellectual capital of the company and the earning management

### The limitation of the research:

Lots of economical and political and social factors and also effective factors in the company except selected control variables are effective on the findings of the research that its control was so difficult.

The research society examines just the accepted companies in the securities stock market and because of not having a quick and easy access to the information of the other companies, it quits examining them. For this reason, at the time of generalizing to other non-stock market companies, we must act carefully.

### Suggestion for the future research

1)It is suggested that prospective researchers use other models for calculating the earning management and intellectual capital and finally compare them their results with findings of the research.

2)It is possible to examine this topic with separate different industries.

3)It is suggested that the prospective researchers deal with the different dimensions of the intellectual capital in organizations and its effect on the earning management.

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