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Surviving the effect of value added as a intellectual capital index on the performance of corporation (case study at TECX)

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ABSTRACT

The main propose of this research is the analyses of value added rule as an intellectual index on the financial ,economical and stock market performance of corporations .at this research the effect of value added (intellectual capital and used capital)on the financial ,economical and stock market of corporation in Tehran exchange commission through the 2006 until 2012with the method of regression has survived .results show that the coefficient of intellectual capital value added is effective at corporation performance .although among the coefficient of intellectual capital and financial and economical performance is meaningful relationship .but there is not meaningful relation among used capital corporation performance .that is arising from not being relation among value added coefficient and financial ,economical and market performance of corporations .So we can conclude that intellectual capital value added in comparison with used capital value added has more and important effect on corporation performance especially at financial and economical performance.

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Introduction

At change full day these days, any thing is changing and isn't fixed. These fast and consecutive alterations have effect on growth and profitability of corporation. Value creation is a common view of new business at the competition condition and in the arrival of new century has received new concept, in the manner that corporation success has depended on that. the importance of value creation caused to pay attention in the financial lecture on this topic and consider some criterion based on maximizing of economical ,market and intellectual capital value added replacement of net income maximizing approaches. Observation shows the growth of intellectual capital importance as an instrument for enhancing completion of corporation. Intellectual capital is a wrapped subject so proportion of that is relatively difficult and the research and measurement of intellectual capital at the last two decade is manifold. at the micro economical level intellectual capital emphasis on nonfinancial value added for corporations and organization like ; human capital(professions, experiences and education and so on),relationship capital (costumer and stockholder relationship ,brands ,agreements and so on) an framework capital like corporation culture ,work environment ,systems and immaterial rights (rolan and ford 2007). Tradition financial accounting isn't able to calculate the real worth of corporation and just measure visible assets. Intellectual capital prepare new model for calculation and observation of corporate and organization real worth and it can be possible to calculate corporation future value.

Using of tradition assessment like corporation earn ,EPS, ROE, ROA , cash flows and like this in the stock markets are common in the decades .until that the assessment based on value propounded, at the tradition assessment based just net accounting profit has concerned that isn't noticed on the capital

expenses of corporate and for that reason isn't suitable method. One of newest criterion based on value is coefficient of intellectual capital value (zeghal2010).at the two last decade, performance management turn in to the favorable and attractive topics and this tendency both in research and application cause to many innovations.

Although the subject of performance is one of the extended and has influenced by some disciplines and professionals. So existence of performance process is necessary for progressing on corporate and organization object and although to state the effect of performance, qualitative characteristics and individual merit alongside of objectives, values, success keys and other performance indexes distinguish its potential and development needs.

A review of theoretical and research background

Nowadays, invisible aspect of economy is based on intellectual capital and its primary and main material is knowledge and data. Organizations, for the purpose of participation in today's market, in any shapes or kinds need information and knowledge to improve their performance. Generally speaking, intellectual capital is very worthful and valuable due to make the possibility of establishing a system for effective usage and efficiency of intangible assets for organizations. Also, this concept helps organization to achieve a balanced performance, based on a natural system, in the use of its own intangible, tangible and financial assets in a coordinated environment and inside commercial markets. Conceptual nature of intellectual capital enables the organization to be able to accurately understand the management of dynamic and complex transactions of human, structural and customer's capital, and yet can establish a suitable exchange and interaction between these tangible and financial assets and resources of the organization. Indeed, intellectual capital is used in providing "an image in a

time" from the valuation of organizations annual intangible assets, or explaining the position of the programs related to these topics in the organization (Rosalind & James, 2008).

Roland and Groan (2007) believe that intellectual capital includes an effort for effective use of knowledge (final product) versus data (raw material). Based on the surveys of Zeghal and Anis, intellectual added value coefficient is a measurement of how more new values per unit of invested money in each source are created. A high coefficient delineates a higher value mood by using a company source and containing intellectual capital. Thus, intellectual added value coefficient is calculated as follow: added value (performance) coefficient of intellectual capital plus added value (performance) of added capital (Zeghal & Anis, 2010). Stahle, et al. introduced another method for calculating the intellectual added value coefficient which includes overlapping of both two efficiency of intellectual capital. In this model, both intellectual and physical capitals were considered as cases of the survey. Using the intellectual capital of a company consists of its assets, efficiency of revenue gains and debts. Intellectual capital is a capital that consists of company's staff and its structure (Stahle et al, 2011). Public states that added value in a company is the difference between income and expenditure that is created (Pulic, 2004). Although traditional methods of accounting significantly help to understand the business value, in a company or knowledge based organization in which knowledge forms a big part of a product's value as well as its wealth, these methods are based on tangible assets and also information related to the previous operations of the organization or company and they are inadequate for valuation of intellectual capital which are the most valuable asset for many companies. Thus, using the method of the added value in the present situation can have the value of a good operation. In this case, administrators can be well informed of their available situation (strengths and weaknesses points) of intellectual capital management. However, yet half of the business managers are unprepared for gaining the benefit of this knowledge. It means just 20 percent of the available knowledge in an organization is used due to the lack of intellectual capital's measurement (Alam Tabriz et al, 1388). According to the theory of Lu (2000), nowadays instead of forming a major part of a company's market value by physical assets, intangible assets such as innovations, a trademark and the amount of education are responsible for this role. Human capitals, as a part of intellectual capitals, have an essential part in making this relation. Bennis (1998) conducted the first study on the survey of the intellectual capital's effect as a separate structure on the performance. In his study, he found some evidence that supported the hypothesis of the intellectual capital's effect on the performance (Alam Tabriz et al, 1388).

In the competitive market of capital, these results are the performance of active companies and organizations in market which determine the amount of success and their achievement to the appointed goals and somehow they guarantee their future performance. Based on this fact, using an accurate criterion for the assessment of companies' performance, for the purpose of making an environment full of confidence and transparency in capital markets, is one of the necessities of market's developing performance and economic growth. Thus, considering the importance of intellectual capital in the improvement of the companies' performance and their success, it seems one can use it as an index for measuring companies' performance (Nasif Al-Shubiri, 2011). Today, intellectual capital constitutes the bulk of the organizations' market value; and its identification, measurement and management have become the most important

tasks of organizations (Clarke & Seng, 2011). Also in the past few decades, the emphasis on knowledge resources, organizational capabilities and key factors of success in identifying the guideline role of intangible resources has had an important contribution in organizational success. It is obvious that today in competitive areas, companies and organizations cannot ignore the intellectual capital and this issue adds the necessity and importance of intellectual capital's existence in companies and organizations in which try to preserve themselves (Roland & Goran, 2007). Thus, intellectual capital is made by a combination of intangible resources and can lead to special results such as collective knowledge, patent and inventions, trademark, reputation, special common procedures and cooperation networks (Alam Tabriz et al, 1388). Studying different designed frames by different theorists, researchers and organizations in the area of intellectual capital shows the solidarity and the immense significance in the effectiveness of intellectual capital on the companies and organizations' added value. It is performance, measurable results, decisions and proceedings of a company that show the amount of success and gained successes. So, studying the amount of a company's performance is very important for the purpose of accessing to the goals and successes. In this regard, employee satisfaction, customer satisfaction, effectiveness of company, and financial and market results are the suitable indexes which studying the performance, because of its necessity in a company, must be based on them (Clarke & Seng, 2011). According to the researches of Rahnavard, nowadays despite increasing the importance of intangible assets and especially spiritual and intellectual assets in companies, most of accounting systems are not able to calculate the value of intellectual capitals clearly and suitably (Rahnavard, 1388). Considering the conducted surveys, Mojtahedzadeh found that today the traditional criteria of accounting are not suitable for determining the real value of companies and if assets of knowledge cannot be identified and measured, never can achieve the true value of a firm (Mojtahedzadeh, 1386). Examining the relationship between intellectual capital and market value of company, Asadi, et al. found that traditional accounting method is not able to account intangible assets; that is why, their system should be reviewed. In other words, findings and general results indicated that there is a strong and direct relationship between intellectual capital and some assessment of performance (Asadi et al, 1388). Results and findings gained from the research conducted by Etemadi, et al. show that scientific assets can be considered as company's stimulator of performance and claimed that existence of scientific assets in organization cause increasing the added value for it. Asadi, et al. (1388), in a study of the intellectual capital's effect on the market value of the company, found that the relationship between efficiency coefficient of intellectual capital and the ratio of market value to the book value is positive and significant. Hemmati, et al. (1389) found that there is a significant relationship among intellectual capital and market value and performance of nonfinancial companies. Also, the obtained results showed that there is a significant relationship among intellectual capital and its components and ratio of market value to book value of the companies that were under study. Measuring the performance of intellectual capital and considering its effective factors, Ahmadi, et al. (1390) found that profitability, labor productivity, assets performance and staff costs in companies under study have a significant relationship with the performance of intellectual capital; and the risk of benefit from intangible assets does not have a significant relationship with it. Chen, et al. (2005) examined the

relationship between the efficiency of the company's value-creation and the ratio of market value to book value and explained the relationship between intellectual capital and current performance in addition to the company's future financial performance. The results show that the company's intellectual capital has a positive impact on the market value and financial performance, and it is an index for the future financial performance. Laing, et al. (2010) used intellectual added value coefficient model in determining the elements related to intellectual capital. The findings suggest that the intellectual added value coefficient model provides a powerful tool for assessing the efficient use from the intellectual capital and can be used by managing in assessing the performance of their organization without relying on industry standards and provides basis of practical usage for managing and a method for discussion and interpretation of the results. Maditinos, et al. (2011) examined the impact of intellectual capital on market value and financial performance of the company. The only result was that statistically there is a significant relationship between human capital efficiency and financial performance. Abdulsalam, et al. (2011) investigated the intellectual capital efficiency of Kuwaiti banks by analyzing the three indexes of value efficiency; Human capital efficiency, the employed capital efficiency and intellectual added value coefficient. The results show that non-commercial banks have done almost in the best way among all the commercial banks in the recent three years, 2004 to 2006.

Research hypotheses

The main hypothesis:

Intellectual added value has an effect on the performance of admitted companies in Tehran's Stock Exchange.

Subsidiary hypotheses:

The intellectual capital added value coefficient has an effect on the performance of admitted companies in Tehran's Stock Exchange.

1.1. The intellectual capital added coefficient value has an effect on the financial performance of admitted companies in Tehran's Stock Exchange.

1.2. The intellectual capital added value coefficient has an effect on the economic performance of admitted companies in Tehran's Stock Exchange.

1.3. The intellectual capital added value coefficient has an effect on the money-market performance of admitted companies in Tehran's Stock Exchange.

2. The added value coefficient of employed capital has an effect on the performance of admitted companies in Tehran's Stock Exchange.

2.1. The added value coefficient of employed capital has an effect on the financial performance of admitted companies in Tehran's Stock Exchange.

2.2. The added value coefficient of employed capital has an effect on the economic performance of admitted companies in Tehran's Stock Exchange.

2.3. The added value coefficient of employed capital has an effect on the money-market performance of admitted companies in Tehran's Stock Exchange.

Methodology

The present study, based on the essence and data gathering method, is of the correlation kind. In this research, intellectual added value coefficient model has been used by using library studies of financial information and financial relationships of companies to answer the research central question. Variables have been used in the model in a way that there would be some economic and accounting theories about intellectual capital

index of criteria for the added value and calculating financial relationships. Also, based on the objective, the present study is a type of applied researches since the applied research is a research that its findings can be used to solve social problems; and the findings of this study can also be used in other companies.

Statistical population and sample (Participants)

Statistical society of the present study is the admitted companies in Tehran's Stock Exchange and contains studied period of 1385 to 1390 years; and the way of choosing the admitted companies in Tehran's Stock Exchange and the method of gathering data are as follow: 1) The end of the financial year of the admitted companies is the end of Esfand 2) They had been active at least one year in Stock Exchange 3) The type of company's activity should not be investment and financial intermediary. Therefore in this study, applying the mentioned conditions, the number of community members was determined 81 companies, and because of the low number of companies with the above mentioned requirements, all 81 companies were under study. Thus, the data is extracted through available softwares in the Tehran's Stock Exchange organization such as Plan Processor software and Rahavarde Novin and internet address of exchange organization.

Calculation the intellectual added value

The method of intellectual capital added value coefficient provides information related to efficiency of making company's tangible and intangible assets value. Instead of evaluating the company's intellectual capital, the method of intellectual capital added value coefficient measures directly three types of assets' efficiency: 1) Financial and physical capital 2) Human capital 3) structural capital. If efficiency of financial and physical capital is shown with VACA and human capital efficiency with VAHU and structural capital efficiency with STVA, algebra sum of three parts will be equal to coefficient of intellectual capital added value. The higher added value coefficient indicates the optimal use of value making resources in business unity. Index of VAIC is used as the criterion of company's intangible factors (Zeghal & Anis, 2011).

Calculating method of intellectual added value coefficient covers a number of different steps:

The first step: is the calculation of the company's ability to make added value.

According to shareholder theory, the added value is calculated as follow:

$$VA = OUT - IN$$

$$\text{Added value} = \text{Output} - \text{Input}$$

Or

$$\text{Added value} = \text{Operating profit} + \text{Costs of staffs} + \text{Depreciation of tangible fixed assets} + \text{Depreciation of intangible assets}$$

$$\text{Added value} = \text{Net sale} - \text{Whole cost of sold goods} - \text{Depreciation cost}$$

Outputs show the income and compare all products and services that are sold in market. Inputs include all the costs of company's operation, the unique costs of staffs that have not been considered as cost.

The second step: is the assessment of the relation between added value and human capital.

According to Pulic theory, the costs of staffs have been regarded as a human capital index. The relation between added value and human capital specifies the ability of human capital in creating the value in a company (Pulic, 2004).

$$\text{Human capital (HC)} = \text{Staff costs} - \text{Research and development costs (in fact the costs of staffs engaged in research and development)}$$

$$VAHU = VA / HC$$

Added value (efficiency) of human capital = $\frac{\text{Added value}}{\text{Human capital}}$

The third step: is finding the relationship between added value and structural capital. Structural added value coefficient shows the composition of the structural capital in creating value. According to Pulic (2004), structural capital can be achieved when human capital is deducted from the added value. Thus, the relationship between added value and structural capital has been calculated as follow:

$$SC = VA - HC$$

$$\text{Structural capital} = \text{Added value} - \text{Human capital}$$

$$SCVA = SC / VA$$

$$\text{Added value (efficiency) of structural capital} = \frac{\text{Structural capital}}{\text{Added value}}$$

The forth step: calculates the advantage of intellectual capital added value (VAIC) that shows the composition of the intellectual capital in creating value.

The intellectual capital added value coefficient can be calculated by sum of the human capital added value coefficient (VAHU) and the coefficient of structural capital added value (SCVA).

$$VAIN = VAHU + SCVA$$

$$\text{Intellectual capital added value} = \text{Human capital added value} + \text{structural capital added value}$$

The fifth step: measures the relationship between added value and employed physical and financial capital (added capital) (CA).

According to Pulic (2004), intellectual capital cannot make value on its own property. Therefore, it is essential that physical and financial capital is calculated in order to have a complete insight into the universality of the added value made by the company's resources. The coefficient of used capital added value (VACA) shows that how more new value is made by each invested money unit in the used capital. Thus, the relationship between the added value and the added capital shows the ability of used capital in creating value in a company.

$$CA = \text{The net book value of assets}$$

$$VACA = VA / CA$$

$$\text{The added value (efficiency) of used capital} = \frac{\text{Added value}}{\text{Net book value of assets - The net book value of assets}}$$

The sixth step: measures every source that helps the creation or production of added value.

Thus, the intellectual added value coefficient measures how more new value is made by each invested money unit in each source. The coefficient of intellectual added value is calculated as follow:

$$VAIC = VAIN + VACA$$

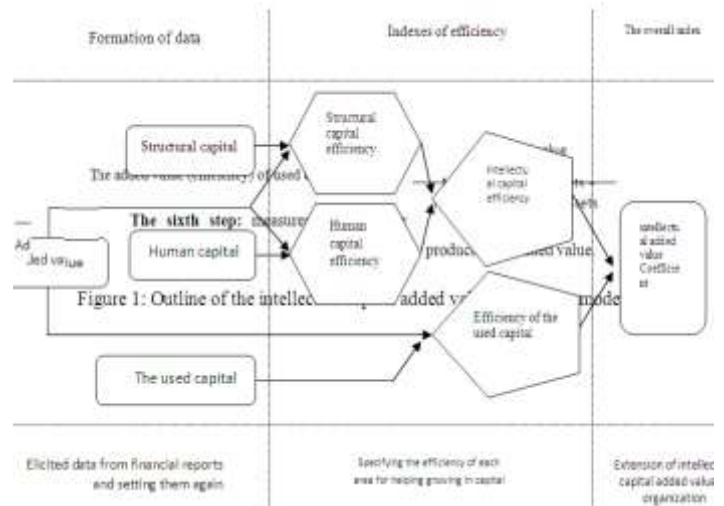
The intellectual added value coefficient = The intellectual capital added value (efficiency) coefficient + the added value (efficiency) of the added capital

Advantages of Intellectual added value coefficient

Firer and Williams (2007) stated two superior factors of VAIC as follow:

A) Ease of VAIC calculation, monotony of calculation basis, producing effective comparative analysis across the country and all the companies.

B) Derivation of used data in the calculation of audited financial statements



Application of intellectual added value coefficient

Intellectual added value coefficient of improves performance capability, effectiveness and authentication of coefficient of intellectual value in the intellectual capital efficiency. Thus, the reasons of using the intellectual added value coefficient can be as follow:

- It provides quantitative measurement criterion, objective and measurable without needing to any subjective value.
- It provides indexes that are related, useful and illustrative (informant). But in addition to shareholders, key components of intellectual capital are identified and compared in order to assessing the company's performance
- It uses measurement criteria based on financial affairs insofar as none of these indexes, relationships and ratios may be unrecorded and are used for comparing the parallelism of traditional financial indexes.
- It uses relatively simple and clear procedures in recording essential indexes and coefficients which may be understood simply especially for management and commercial business men who are accustomed to accounting information.
- It provides shape of standardized measurement criterion. Indexes or measurements that may be continuously recorded and used, or can be used for the comparison among a part, company, industry and national level.
- It causes the use of published or general financial data insofar as improves the capability of data availability.
- It provides the measurement system of intellectual capital which is parallel and consistent with the attitude of shareholder and source of axis.
- Human capital or employees are introduced as the most important source of intellectual capital that are consistent and compatible with total of main definitions of intellectual capital (Abdulsalam et al, 2011, p.89).

Operational definition of research variables

The coefficient of intellectual added value:

A method that directly measures efficiency of three kinds of asset: 1) financial – physical capital 2) human capital 3) structural capital. These three components and added value are calculated as follow (Pulic, 2004):

$$/ CA \quad VA = VACA$$

$$/ HC \quad VA = VAHV$$

$$/ VA \quad SC = STVA$$

$$+ VAHV + STVA \quad VACA = VAIC$$

Economic performance

Operating profit capability, that is economic surplus or gained economic impure profit, shows the difference between

income and costs of production. In the present study, economic performance is calculated by the following index (Zeghal & Anis, 2011):

$$\text{Economic performance} = \frac{\text{Operating profit}}{\text{Sales}}$$

Financial performance

Profit capability and statement of the ability of used capital are for complying trustful levels of the benefit.

In the present study, financial performance is calculated by using index of assets efficiency (ROA) (Zeghal & Anis, 2010).

$$\text{Financial performance} = \frac{\text{Net profit}}{\text{All assets}}$$

Performance of the money-market:

Most of the researchers state that increase of distance between the market value and the book value of companies can be the result of not applying intellectual capital in their financial statement. This distance generally is displayed in the ratio of market value to book value (MB) and suggests that investors understand the intellectual capital as a company's value source despite not showing in company's book value. Thus, to measure the performance of the money-market, market value index to book value is used (Zeghal & Anis, 2010):

$$\text{MB} = \frac{\text{money-market value}}{\text{Book value of salary of stock holders}}$$

Statistical Methods

In this study, statistical method of correlation was used for concerning companies' performance and calculating its common invoice. Because of the normal test results of distribution of the statistical population which show abnormality, nonparametric statistics of Spearman correlation coefficient has been used. To assess the normal distribution, the test of Kolmogorov – Smirnov has been used. The reason of using the Spearman correlation coefficient is that distribution of population was not normal. Thus, to examine the relationship between non-normal variables, Spearman correlation coefficient has been used that is equal to nonparametric Pearson correlation coefficient (Azar, Adel, 1381).

To statistically analyze the data and testing the current study's hypotheses, two statistical methods have been use.

1. The first part of descriptive statistics: including mean, standard deviation.

2. The second part of inferential statistics:

a. Default testing: includes normal distribution test of statistical population

b. Main testing: Spearman's nonparametric correlation coefficient

Spearman's rank correlation coefficient is obtained from the following formula (Azar, Adel, 1381):

$$r_s = 1 -$$

$$H_0: \rho = 0$$

$$H_1: \rho \neq 0$$

Correlation hypotheses are as follows:

There isn't any significant correlation

There is a significant correlation

To check the assumption of normality of residuals, test of Kolmogorov – Smirnov has been used. In this test, the statistical assumptions have been formulated as follow:

H_0 : There isn't any significant difference between data distribution with a normal distribution.

H_1 : There isn't any significant difference between data distribution with a normal distribution.

If P-Value in the confidence level 0/99 is less than 0/01, it can be concluded that the distribution of these variables are not normal.

Testing hypotheses

A) Descriptive findings

In order to better understand the nature of the population that were used in this study and learn more about the research variables, before analyzing the data, it is necessary to describe these data. Also, statistically describing the data is a step to identify their governing patterns and a basis for determining the relationship between the variables that have been used in the research. Therefore, before testing the research hypotheses, the research's variables are studied in a summarized way in the following tables.

(Source: Researcher's Findings)

B) Inferential statistics

The first main hypothesis: the coefficient of intellectual capital added value has an effect on the performance of admitted companies in Tehran's Stock Exchange.

Table 2: Results of the statistical test of the first hypothesis for the total sample at significance level of 0/01

According to the results of table 2 and the amount of error of Spearman correlation coefficient test 0/99, and since the error level (p-value=0/001) is less that 0/01, it can be concluded that coefficient of intellectual capital added value has an effect on the financial performance and the correlation coefficient of two variables is also equal to 0/27. Therefore, in this test, can be rejected. According to the results of table 2 and the amount of error of Spearman correlation coefficient test for a confidence level 0/99 and since the level of error (p-value=0/001) in this test is less than 0/01, thus we can conclude that coefficient of intellectual capital added value has an effect on the economic performance and correlation coefficient of two variables is equal to 0/25. So, in this test H_0 can be rejected. According to the results of table 2 and the amount of error of Spearman correlation coefficient test for a confidence level 0/95 and since the level of error (p-value=0/469) in this test is more than 0/05, thus we conclude that coefficient of intellectual capital added value has not any effect on the performance of money-market.

So, in this test H_0 can be confirmed.

The main second hypothesis

The coefficient of used capital added value has an effect on the performance of admitted companies in Tehran's Stock Exchange. According to the results of table 3 and considering the amount of error of Spearman correlation coefficient test for a confidence level 0/95 and since the level of error (p-value=0/322) in this test is more than 0/05, thus we conclude that coefficient of used capital added value has not any effect on

the financial performance. So, in this test H_0 can be confirmed. According to the results of table 3 and considering the amount of error of Spearman correlation coefficient test for a confidence level 0/95 and since the level of error (p-value=0/640) in this

test is more than 0/05, thus we conclude that coefficient of used capital added value has not any effect on the economic

performance. So, in this test H_0 can be confirmed. According to the results of table 3 and considering the amount of error of Spearman correlation coefficient test for a confidence level 0/95 and since the level of error (p-value=0/182) in this test is more than 0/05, thus we conclude that coefficient of used capital added value has not any effect on the money-market

performance. So, in this test H_0 can be confirmed.

Discussion and conclusion

Checking the effect of added value as the main objective of the current study is the index of intellectual capital on the performance of admitted companies in Tehran's Stock Exchange. The results of the study show that coefficient of intellectual capital added value has an effect on the performance of admitted companies in Tehran's Stock Exchange; although there is not any relationship between coefficient of intellectual capital added value and the performance of money-market, there is a significance relationship among coefficient of intellectual capital added value and financial and economic performance. This result is consistent with the results of Zeghal & Anis (2010) that also in their study there is a relationship between coefficient of intellectual capital added value and the performance of money-market just for a limited number of companies. This means that investors know just intellectual capital as a value source for the financial and economic companies. Also, the results of the study show that there is not any relationship between the coefficient of used capital added value and the performance of admitted companies in Tehran's Stock Exchange that is due to the lack of significance relationship between the coefficient of used capital added value and financial, economic and money-market performance of the admitted companies in Tehran's Stock Exchange. Thus, it can be concluded that the intellectual capital added value has a more important influence on the performance of companies especially financial and economic performance when comparing with used capital added value. So, it can be said that companies should launch to enhance the intellectual capitals for the purpose of improving their own performance. Paying attention to other conducted researches inside and outside of the country, we can witness accordance of the obtained results of the current study and other studies in a way that this study is consistent with inside researches of Hemmati, et al (1389), Abbasi and Sedghi (1389) and outside researches like Chen, et al. (2005), Clarke and Seng (2011) and Zeghal and Anis (2010). It can be concluded that instead of used capital, the coefficient of intellectual capital added value is a potential criterion for measuring and reporting the intellectual capital. Government can also use intellectual added value as a method for assessing different companies and different economic parts in format of their own intellectual capital added value, and it can lead to the improvement of government's economic policies and an improvement in managing the new economy.

Practical suggestions

1) Establishing necessary standards, for measuring and reporting the intellectual capital, and its validation in the current era is the first and most immediate action to decrease the existing deep gap in traditional reports of book values and real values. Thus, timely and effective action should be done for monotonous reporting.

2) Voluntary reporting of intellectual capital by companies through companies' website in the current era can be useful in investors and shareholders' decisions in capital market.

3) To strengthen the companies' intellectual capital, it is necessary that exchange organization accompanied by companies' experts and other market analysts, measure the market value based on the intellectual capital.

4) Companies' measuring and reporting of their own intellectual capital (human, structural and customer capital) along with other intangible assets in the format of intangible balance sheet and assets outside of balance sheet will help market analysts much more in real valuation of stock.

5) Doing structural reforms, processes reform, regarding provisions, accomplishing operational programs, enhancing guidelines and reforming infrastructure, improving the organizations and working methods, and earning points caused by trademarks, inventions and innovation are effective in strengthening the structural capital and thus can help to improve companies' performance indexes in future.

Recommendations for future research

1) In the future researches, it is also necessary to examine the process of intellectual capital audit and its effects on the money-market

2) Due to the companies' confidential information and its consequences in capital market, it is necessary to conduct some researches in the field of the relationship between intellectual capital and asymmetry of information.

3) Recent researches are almost about the relationship between intellectual capital and traditional measures of performance that is required to connect the intellectual capital with new criteria of performance evaluation including SVA, CVA.

4) For a more accurate examination of the topic, the current research can be carried out based on each industry separately and compared different industries according to the above mentioned relationships.

5) In this study, besides used model, other models have been introduced that can use other models of intellectual capital to measure companies' performance.

6) In the current study, criteria of MB, OI/S, ROA have been used to measure variables of economic financial performance and money-market performance. It is recommended to use other criteria in the future researches in order to judge the obtained relationships with a greater confidence.

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Table 1: Descriptive statistics of research's variable

Statistics of normal distribution		Central statistics		Variable
<i>P – Value</i> Kolmogorov – Smirnov	Amount of Z Kolmogorov – Smirnov	Standard deviation	Mean	
0/001	6/66	24/06	12/21	VAIN
0/001	7/75	3/79	1/21	VACA
0/001	2/02	0/116	0/105	ROA
0/001	2/68	0/173	0/170	OI/S
0/001	8/66	9/09	2/55	MB

Table 2: Results of the statistical test of the first hypothesis for the total sample at significance level of 0/01

	Vain	Roa	Ois	Mb
Correlation coefficient of VAIN	1	274 ./	/258	/033
significance level in two-sided test	-	/000	/000	/469
number of samples	486	486	486	486
Correlation coefficient of ROA	/274	1	/782	/303
significance level in two-sided test	/000	/000	/000	/000
number of samples	486	486	486	486
Correlation coefficient of OIS	/258	/782	1	83/1
significance level in two-sided test	/000	/000	/000	/000
number of samples	486	486	486	486
Correlation coefficient of MB	/033	/303	/183	1
significance level in two-sided test	/469	/000	/000	-
number of samples	486	486	486	486

Table 3: Results of the statistical test of second hypothesis for the total samples in significance level

	VACA	ROA	OIS	MB
Correlation coefficient of VACA	1	/045	/021	/061
significance level in two-sided test	-	/322	/640	/182
number of samples	486	486	486	486
Correlation coefficient of ROA	/045	1	/782	/303
significance level in two-sided test	/322	-	/000	/000
number of samples	486	486	486	486
Correlation coefficient of OIS	/021	/782	1	/183
significance level in two-sided test	/0640	/000	-	/000
number of samples	486	486	486	486
Correlation coefficient of MB	/061	/303	/183	1
significance level in two-sided test	/182	/000	/000	-
number of samples	486	486	486	486

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