Effects of Intellectual Capital on the real growth rate of companies accepted in Tehran Stock Exchange

Leila Lak

Department of Accounting , Andimeshk Branch , Islamic Azad University , Andimeshk , Iran

Corresponding author: Leila Lak

ABSTRACT: Reporting of intellectual capital can improve the efficiency of capital markets and can be used for identifying and providing information about the objectives, strategies, ideas, activities and enterprise resources. Intellectual capital acts as a means of communication with the outside environment that could attract financial, human and institutional resources from partners and customers. The aim of this study is to evaluate the effects of Intellectual Capital on the real growth rate of companies accepted in Tehran Stock Exchange. Intellectual capital is divided into three parts: structural, human and physical capital. The statistical sample is consisted of 62 companies during 2008 and 2009. The findings indicated a significant relationship between all the components of intellectual capital and the real growth rate.

Keywords: structural capital, physical capital, human capital, the real growth rate.

INTRODUCTION

IFAC in 1998 has defined intellectual capital as follow: the total capital stock or knowledge-based equity that the companies have. According to (Kaufmann and Schneider ,2008), intellectual capital can include intangible assets, intangible property and intangible resources but it is not only restricted to these. (Chen et al., 2004) define human capital as an Integration of competencies, thinking style and creativity of employees. The lack of intellectual capital reporting will have following negative consequences for the companies:
•   Minority shareholders have less access to information than institutional shareholders.
•   By accessing to inner organizational information about intangible assets, managers may use this situation to their own advantages.
    Failure to provide such information may lead to the lack of proper valuation of the company and consequently to the increase of risk that this in turn will increase the company's cost of capital (Diamond, Vrrecchia, 1991).
    Due to the production of knowledge and the production of wealth in knowledge based economy, intellectual capital, nowadays, can play an important role in creating value added and gross domestic product. Organizational development enhances personalities, power management and job security of senior management. And further growth, will follow by much more salaries and benefits for them. This also causes more power for company compared to others in the neighborhood. Large organizations have more influence on raw material suppliers, unions, major customers, government, etc. these facts lead us to explicitly conclude that growth is not a fortuitous event, but it is the result of astute managerial decisions. Growth brings both economic and political interests for the decision makers. Therefore, the strong forces, continuously, encourage organizations to development.

Theoretical Principles and research background:
    Classification of intellectual capital components, facilitate applying this concept in the operational and strategic levels. Despite different views on the definition of the components of intellectual capital in recent years, there is an approximate consensus on the classification of the components of intellectual capital. According to this agreement, intellectual capital consists of communication capital, human capital and structural capital.

Communication capital (customer): The main issue related to communication capital is the existing knowledge in marketing channels and relationships with customers and the main determinant factor in transformation of the intellectual capital to market value and consequently in the function of the organization's business (Grojer,1999).

An organization's human capital includes the skills, expertise, abilities to problem-solving and leadership styles. The structural Capital (organizational): This capital includes databases, organizational charts, instructions executable processes, strategies and action plans. This is inability of the traditional financial statements that do not show the ability to create value of intellectual property (Marr, 2003). This may lead to increased information asymmetry between companies and users of accounting information (Lev Zarwin, 1999). Intellectual capital is one of the intangible resources of the company that innovation capital and customer capital are its subgroups. Research and development activities lead to improve existing inputs or create new inputs. This increases the total productivity of production factors and hence economic growth (Sinai et al., 2011). the growth of Commercial units, is a dynamic process that depends on the company's resources, market conditions and company's strategies and characteristics. Growth of a company can be divided into two components: 1. internal growth 2. external growth. In other word, accompany can grow in two ways. One of these ways is the development of existing assets and business activities that is called internal growth. The other way is combination with other subsidiary companies, which is called external growth. External Growth, obtaining through business combinations (mergers, consolidation or acquisition of stock), may cost more than internal growth (Mousavi, 2008). (Sinai et al., 2011) examined the relationship between intellectual capital and company's performance. The sample consisted of 26 high-tech industrial companies and 26 low-tech production companies. Their results showed that there is a significant positive relationship between customer capital, innovation capital and the company's financial performance.

(Jalili and Hemmati ,2011) in a study evaluated the corporate governance and intellectual capital of companies listed on the Stock Exchange of Tehran. The results indicate that there is no significant relationship the existing of irresponsible managers in the composition of the board of directors and structure capital. But there is a relationship between the lack of managing director as chairman or vice-Chairman and Human capital and also between company's internal audit and human capital and structural capital.

(Abbasi and Goldie ,2010) investigated the impact of intellectual capital on the financial performance of companies in the Tehran Stock Exchange. In this study, the coefficient of performance of each of the elements of intellectual capital had positive impact on rates of return of shareholders equities. The effect of efficiency coefficient of physical and human capital on earnings per share was positive but, the effect of efficiency coefficient of structure capital was negative. The effect of efficiency coefficient of physical and structure capital on annual rate of return was positive but the effect of efficiency coefficient of human capital was negative.

(Putan et al., 2007) evaluated the relationship between intellectual capital and financial performance in Singapore Exchange based on three indicators (earnings per share, rate of return shareholders equity and annual rate of return). The results showed that there is a positive relationship between intellectual capital and financial performance indicators

Research hypotheses:

Hypothesis 1: there is a significant relationship between the structural capital efficiency and the company's real growth rate.

Hypothesis 2: there is a significant relationship between the human capital efficiency and the company's real growth rate.

Hypothesis 3: there is a significant relationship between the physical capital efficiency and the company's real growth rate.

How to collect data and research methodology

Data related to research literature and theoretical principals are extracted from the library resources and scientific databases, and the internal and external articles. In this study, in order to collect the variable-related data, the financial statements provided in the Stocks Exchange website (www.rdis.ir) have been used. Data analysis is performed using SPSS software.

Pearson correlation was used to test the research hypotheses, and the research method is of correlation type; the correlation studies include the studies in which the relationship between the different variables is discovered and/or determined by using the correlation coefficient. The correlation analysis is a statistical tool by the degree to which one variable is measured to another variable that is relevant in terms of linearity.

Statistical society, sample and sampling method

The statistical society of this study is the listed companies in Tehran Stock Exchange. The time realm of the study is years from 2008 to 2009. The following criteria have been used for selection of appropriate method:

· It is not among the investment or financial intermediary firms, holdings, banks and leasing.
· In order to ensure comparability, the end of the corporate financial year is (20 March).
· Corporate financial information is available in the understudy period.
· Stock of the companies has been a continuous trade in Tehran Stock Exchange with no more than 1 month trade-off.

After applying the above conditions, finally 62 companies equivalent to124year/company were selected to evaluate and test the research hypotheses.

The definition of research variables:

Dependent variable: real growth rate: annual percentage change in the total value of corporate assets Independent variables are the components of intellectual capital. Palik used (VAIC) coefficient to measure intellectual capital in the Australian Stock Exchange (Abbasi Goldie Sedghi, 2010). In his model the added value obtained from the difference between output and the data:

Value added = inputs –outputs

Outputs means the revenue from sale of goods and services inputs means all costs used to produce goods and services other than payroll costs for employees and depreciation. Because payment cost is an investment in human resources and help to enhance the structural and intellectual value added by modification of processes and regulations. Depreciation costs are among non-cash expenses.

Value added = Operating profit + depreciation + employee payroll costs
Value added coefficient of intellectual capital has the following components:

Efficiency coefficient of physical capital (VACA): This coefficient represents the value added resulting from the application of tangible physical assets, that is how many value added is obtained by one Rial tangible physical asset. This coefficient is given by following equation:

Tangible Asset(CA) = total assets - Intangible assets

Performance coefficient of physical capital = value added ÷ tangible physical Asset; VACA = VA / CA

Human capital efficiency coefficient (VAHU): This coefficient represents the value added by staff that obtain by dividing value added by the cost of the employee's salary and wage that is how many value added is obtained by one Rial cost of the employee's salary and wage. This coefficient is given by following equation:

Human capital efficiency coefficient = value added ÷ the salary costs for employees

Structural capital efficiency coefficient (STV): This coefficient represents the value added created due to the company's existing processes and structures; that is what percentage of the value added of company is due to capital structure. Structural capital and structural capital efficiency coefficient is calculated from the following equation:

Capital structure = value added - The salary costs for employees

Structural capital efficiency coefficient = Structural capital ÷ value; STVA = SC / VA

Thus, the value added intellectual coefficient is obtained from the above values:

Intellectual capital = Physical capital efficiency + human capital efficiency + structural capital efficiency

RESULTS

Hypothesis testing is carried out by means of correlation method. The results in the form of descriptive statistics and hypothesis test results are shown in the tables below.

Table 1. Descriptive statistics of the data

Variables	Number of observation	minimum	maximum	mean
Structural capital efficiency	124	0.508	90.99	0.899
human capital efficiency	124	0.115	36.4	12.8
physical capital efficiency	124	2.2	91.8	3.4
Real growth rate	124	-0.87177	3.6	0.246

Table 1 show that, the mean of real growth rate is 0.246, minimum of growth rate is-0.87177and the maximum is 3.6. The mean of structural capital efficiency is 0.899, the mean of human capital efficiency is 12.8 and the mean of physical capital efficiency is 3.4.

Hypothesis test results:

Hypothesis 1: there is a significant relationship between the structural capital efficiency and the company's real growth rate.

This hypothesis results are shown in the following table: coefficient correlation between these two variables is 0.001(r= 0.001). According to the fact that the calculated significance is less the 0.05, there is a significant relationship between structural capital efficiency and the company's real growth rate.

Table 2. Correlation test the first hypothesis

variable	correlation coefficient	Significant level	Number of observations
Structural capital efficiency	0.83	0.001	124

Hypothesis 2: there is a significant relationship between the human capital efficiency and the company's real growth rate.

This hypothesis results are shown in the following table: coefficient correlation between these two variables is 0.009(r= 0.009). According to the fact that the calculated significance is less the 0.05, there is a significant relationship between human capital efficiency and the company's real growth rate.

Table 3. Correlation test of the second hypothesis

variable	correlation coefficient	Significant level	Number of observations
human capital efficiency	0.09	0.000	124

Hypothesis 3: there is a significant relationship between the physical capital efficiency and the company's real growth rate.

This hypothesis results are shown in the following table: coefficient correlation between these two variables is 0.12(r= 0.12). According to the fact that the calculated significance is less the 0.05, there is a significant relationship between physical capital efficiency and the company's real growth rate.

Table 4. Correlation test of the third hypothesis

variable	correlation coefficient	Significant level	Number of observations
physical capital efficiency	0.12	0.03	124

DISCUSSION AND CONCULSION

Test results of hypothesis testing showed that there is a significant relationship between companies' real growth and physical, structural and human capital efficiency. Positive correlation coefficient between these variables indicates that companies that increase their physical, structural and human capital efficiency have higher real growth rate.

Structural capital can be explained in the form of organizational culture, organizational structure, operational processes and information systems. Human capital represents knowledge in the minds of employees and is a major source of innovation and recreation. (Jalili and Hemmati ,2011).

According to the results of this study, companies that are seeking to increase their real growth rate, can improve their intellectual capital to achieve this goal.

REFERENCES

Ahmadpoor A, Amir R. 1385. The relationship between risk measures and the offered price differences for stock selling and buying in Tehran Stock Exchange. Study accounting and auditing, number 4627.

Abbas A, Goldie S. 2010. Effect of Intellectual Capital on Financial Performance in Tehran Stock Exchange , Review of Accounting and Auditing , Volume 17 , Number 60 : 57.

Diamond D, Vrrecchia R. 1991. Disclosure ,Liquidity and the cost of equity capital . The Journal of Finance , September :1335 - 160.

Grojer J, Johanson U. 1999. Valuantry guidelines on the disclosure of intangibles :A bridge over troubled water ? Paper presented at the international symposi um measuring and reporting intellectual capital :Experiences , Issues and Prospects , June , Amstredam.

Hearly PM, Palepu KG. 2001. Information asymmetry , corporate disclosure and the capital markets : A review of empirical disclosure literature . Journal of Accounting and Economics ,Vol . 31 : 405-440.

Jalali A, H Hemmati. 2011. Corporate governance and intellectual capital performance of listed companies in Tehran Stock Exchange , Journal of Management Accounting Research , Year Issue Eleven: 12.

Lev B, P Zarwin . 1999 . The Boundaries of financial reporting and how to extent them .Journal of Accounting Research ,Vol . 37: 353 – 389 .

Mousavi Z. 2008. Assessment of the relationship between the deviations from the sustainable growth rate of real growth and liquidity ratios of listed companies in Tehran Stock Exchange , MS Thesis , University of Ahvaz.

Marr B. 2003 . Why do firms measure their intellectual capital ?Journal of Intellectual Capital ,Vol :44-64.

Sinai. 2011. The relationship between intellectual capital and firm performance, a change management research, third year, numbers 69: 5.