

Investigating the Relationship between Capital Value and Return in Companies Accepted to Tehran Stock Exchange

Maryam Ranjbari¹, Keramatollah Heydari Rostami^{2,*}, Mohammad Gholami Baladezaei³

¹ Department of Accounting, Damghan Branch, Islamic Azad University, Damghan, Iran

² Department of Accounting, Damghan Branch, Islamic Azad University, Damghan, Iran

³ Department of Accounting, Damghan Branch, Islamic Azad University, Damghan, Iran

ABSTRACT

Internal Rate of Return (IRR) is the average rate of return on an annual business plan. In the engineering economics, the rate of internal return is one of the standard methods for evaluating economic plans. The use of internal extensions is not considered in the calculation of the effect of environmental factors. The method seeks to reduce the flow of liquidity at an unrecoverable return rate to the current rate. So that its current net worth is zero. This research examines the relationship between capital value and return on companies listed in Tehran Stock Exchange. The statistical population of the companies listed in the Tehran Stock Exchange is 1394-1394. Excel and Eviews software have been used to compute and prepare the data for the required research information as well as their analysis. The significance level of the rate of return on the companies listed in the Tehran Stock Exchange is 0.0021. Since this number is less than 0.05, it can be concluded that there is a relationship between the value of capital and the rate of return in the companies admitted to the Tehran Stock Exchange.

KEYWORDS

Capital Value, Rate of Return, Performance, Return on Capital

INTRODUCTION

Financial reports are one of the most important products of the accounting system. Its main objectives are to provide the necessary information for evaluating the performance and profitability of the firm (Khosh Tintat and Esmaili, 2005). A prerequisite for achieving these goals is to measure and provide information in such a way as to enable past performance evaluation to be effective in assessing the ability to profit and predict future corporate activities. In recent years, where performance evaluation, accountability,

and so on have a special place, the question is whether accounting information is of sufficient information to assess performance? In other words, does the accounting data include all information about the profitability of the business entity. In addition to accounting data, other decision makers need more information, such as information on growth rate records, the effect of leverage, and tax, to not evaluate the business unit's business and whether performance appraisal measures influenced by methods and accounting estimates provide the ability to evaluate performance. The purpose of this research is to investigate the relationship between capital value and return rate in companies admitted to Tehran Stock Exchange.

PROBLEM STATEMENT

Internal Rate of Return (IRR) is the average rate of return on an annual business plan. In the engineering economics, the rate of internal return is one of the standard methods for evaluating economic plans. The use of internal extensions is not considered in the calculation of the effect of environmental factors. The method seeks to reduce the flow of liquidity at an unrecoverable return rate to the current rate. So that its current net worth is zero. In other words, discounted revenues are equalized during the period of the return on capital with discounted costs during the same period, and, accordingly, the undisclosed return rate is determined. If this rate of return is higher than the interest rate (for example, Iran's banking system is 20%), the plan is profitable and applicable, and if the return rate calculated is less than the real interest rate, the plan is disproportionate and ineffective.

The return rate used in capital budgeting to measure and compare the return on investment is also called the discounted cash flow rate. ROR is also called a savings and loan and is also effective at interest rates.

The internal rate of return (IRR) is equivalent to the rate of profit that the investor can obtain by investing in a business plan (BP). The IRR Index is the most widely used

*Corresponding Author: Keramatollah Heydari Rostami
E-mail r: heydarykeramat@gmail.com
Telephone Number r: Fax. Number r:

financial indicator for financial justification and comparison of several business plans. The calculation of the IRR is closely related to the NPV, as the NPV index is plotted to zero to get the IRR discount rate. $NPV(i^*) = 0$ as a result of $i^* = IRR$

The internal rate of return of an investment or an effective annual project consists of a return or return rate that results in net present value (NPV as 1) / $10 * NET (IRR + year)$ of all positive and negative cash flows of a particular investment and equal to zero. In certain circumstances, the IRR is an investment, the adjustment rate in which the current value of the specific net cost of the negative cash flow of the investment is equal to the net present value of the benefit (positive cash flow of the investment). Internal rate of return is usually used to assess the utility of a project or project. Higher than the internal rate of return of the project, which is more desirable to carry out the project. The assumption that all projects need the same amount of investment as opposed to the fact that this project is best considered with the highest IRR. A firm or individual in theory performs all existing projects or investments with the IRR, which exceeds the cost of capital. Investments may be limited by access to corporate finance or the company's capacity or ability to manage multiple projects.

As the internal rate of return, the rate of the index of productivity, quality or performance of the investment, which is in contrast to the current net present value, is an indicator of the value or magnitude of the investment. An investment is considered acceptable if its internal rate of return is higher than the minimum acceptable rate for a return or cost of capital. In a scenario in which the investment is considered by the stockholders of a company, this minimum rate of capital investment is investment, which may be the cost of risk mitigation from alternative investments.

BACKGROUND RESEARCH

Namazi and Rostami (2009) in a study on the relationship between financial ratios and return on equity of listed companies in Tehran Stock Exchange, considered financial ratios as independent variables and companies' return on equity as dependent variables. Investigating and analyzing companies' data during the years 2003-2008 shows that there is a significant relationship between all financial ratios and stock returns.

Plowman and Hancock (2007), in their research titled "Intellectual Capital and Corporate Returns", first began using the Policeman Model (1998) focusing on Asia and the acquisition of information on 150 public companies on the Singapore exchange between 2000 and 2002 and using the statistical test PLS (for data analysis), the relationship between the three sectors (human capital, structural capital and communication capital) with firms' financial returns (ROI), EPS (EPS) and total stock returns (ASR). The results indicate that there is a significant positive relationship between the firm's intellectual capital and the current and future financial performance of the companies. Secondly,

the effect of intellectual capital on firms' financial returns varies from industry to industry

Xing and Yuhan (2002) investigated the relationship between firm investment capital and stock returns in two modes of time series and time series. Investigations of capital asset pricing model were used. The results showed that the investment is negatively related to the future stock return rate, and future stock return rates are positively correlated with future investment.

Dater et al. (1998) investigated the effect of liquidity on stock returns. In this research, inventory turnover was used as a measure of liquidity. The research period was from 1963 to 1991. The cross-sectional regression line between stock returns variable (dependent variable) and change in inventory turnover (independent variable) showed that inventory turnover negatively correlates with stock return rate.

Fama and French (1988) have shown that dividend earnings can predict stock returns. Joon et al. (2002) investigated the relationship between liquidity and stock returns. In this study, the relationship between liquidity and stock returns was used using time series analysis. The results showed a positive and significant relationship between liquidity ratios and stock returns.

RESEARCH HYPOTHESIS

According to the articles on the theoretical framework of the research and to answer the research question, the following hypothesis is presented.

- There is a relationship between the value of capital and the rate of return in the companies admitted to the Tehran Stock Exchange.

RESEARCH METHOD

In terms of the nature of the research, this research is a component of regression research (post-event). Ali research (post-event) is a research in which the purpose is to discover the causes or factors of the occurrence of an event or phenomenon. So, after an event occurs, the investigation begins. Here, the researcher does not manipulate the variables, but performs causal research to identify these variables and factors that cause the incident (Hafeznia, 2010).

By extracting the data in the past (data from the bourse) and using regression, the result is analyzed. The purpose of the study is to find the cause-effect relationship. A prerequisite for any research is the availability of information. In the current situation in Iran, information on companies admitted to the Stock Exchange is available. Also, according to the criteria and criteria that the Stock Exchange has adopted for the admission, continuation of the activities and reporting of companies, information about the companies of the Stock Exchange is of a higher quality, more coherent and homogeneous. Therefore, the realm of this research is Tehran Stock Exchange. Also, the realm of time studied is from 2011 to 2015.

This research is a kind of correlation and methodology of post-event research, and since it can be used in the process of using information, then the type of research is applied. The statistical model used in this research is the regression model used to identify factors along with other factors. The data collected by Excel software is computed and analyzed by Eviews software. A panel analysis is used to evaluate and estimate the overall model. The reason for using this method is because of the nature of the data. Because in panel analysis, the data are collected in a cross-sectional manner. In the panel analysis, we can reduce the deficiencies that exist in each of the time series and cross-sectional models. Problems with time series models are usually self-correlating problems, and there is a heterogeneous variance problem in cross-sectional statistics. In panel analysis, by combining these two groups of information with increasing number of observations and degrees of freedom of the problem, the relation between the explanatory variables is reduced and the efficiency of econometric estimation increases. The three main methods for estimating the pattern based on panel data are as follows:

1. Expression of common and constant origin for all cross-sectional observations (combined method)
2. Exposure from a different origin to cross-sectional observations (fixed effects method)
3. Exposure from the random source between cross-sectional observations (random effects method)

For empirical research, the fixed effect method has more efficiency than the other two methods. Therefore, in this research, constant effects method has been used for model estimation. The constant effects method assumes that the difference between the sections can also account for the differences in the period. According to Baltjai (2005), the Fixed Impact Approach (Hausman and Chow models) will suffer from stability problems. However, for accounting researchers, it is more important to know that controlling the static effects of members in panel data can lead to the elimination of the variable suspicious problem and the estimation of the unstable coefficients of the regression model.

In the accounting data, it is expected that there will be heterogeneity between different companies and between different periods. In this study, the variables are calculated using Excel spreadsheet and the results are analyzed using statistical software.

METHODS OF DATA COLLECTION

The data needed to calculate the variables of the research were obtained from the database, handwritten archives in the Stock Exchanges Library and the website for research, development and Islamic studies - the Stock Exchange Organization as well as the financial statements available on the site codal.ir. After collecting the data that is required to conduct the research, selecting the appropriate tool for the calculation and analysis of information about the variables is important. Excel and Eviews software have been used to compute and prepare the data for the required research information as well as their analysis. One of the things that

need to be considered in collecting data is the validity of data collection tools. The purpose of the data gathering tool is to allow the tools to show the facts well. Since the data gathering tool in this research is a database prepared by the Tehran Stock Exchange or Tehran Stock Exchange, it is possible to trust the reliability of data collection tools.

SOCIETY AND RESEARCH SAMPLE

The statistical population of the companies is listed in Tehran Stock Exchange. The sample includes companies admitted to the Tehran Stock Exchange which have the following characteristics:

1. Companies that have been admitted to Tehran Stock Exchange before 2011.
2. Companies that have been present at Tehran Stock Exchange from 2011-2015.
3. Companies with the end of their fiscal year are March 29th.
4. Companies that do not change the fiscal year.
5. The companies whose data they are looking for are available.

After applying the above limitations, 110 companies were selected as the statistical sample of the research.

RESEARCH MODEL

$$\text{Capital value} = a_0 + a_1 \text{ IRR} + a_2 \text{ Market Share} + a_3 \text{ CorporateTax} + a_4 \text{ Unemployment} + a_5 \text{ Age} + e$$

• Dependent Variables:

IRR: Internal return, the return on which the net present value of the company is zero.

Market share: The share of the company from the industry in which it operates.

• Independent Variables:

Capital value: Equals the natural logarithm of the equity marketer (the number of shares * the price per share)

• Control Variables:

Unitary changes: A variable is twofold, and if the company has a change in industry in the fiscal year, the number is 1, otherwise it will have 0.

Equity Stake: The amount of capital is equal to the share of the industrial market in which the company is active.

Corporate Tax: The natural logarithm of company tax over a fiscal year.

Unemployment: The unemployment rate in the fiscal year that is extracted from the Statistics Center report.

Age: The sand of the company since its admission to the Tehran Stock Exchange

DESCRIPTIVE STATISTICS

In this section, information is provided on the calculated variables of the research. It is necessary to describe this data before analyzing the statistical data. It also describes the statistical data in order to identify the dominant model and the basis for explaining the relationships between the variables used in the research.

The first step in data analysis, description and knowledge of the characteristics and characteristics of the studied units is research and familiarity with their changes in the sample. Knowledge of frequency distribution and central criteria and the distribution of key variables can serve as complementary information to play an effective role in determining the findings of the research. Therefore, before examining research hypotheses, the research variables are briefly summarized in Table 1. These variables include dependent and independent variables, the mean, mean, sloping, and elongation of these variables during the research period are presented in the table below.

Tab.1.Descriptive statistics of the research variables

Variables	Number	Minimum	Maximum	Average	Median	Standard deviation	Ski ddi ng	Elongation
Value of capital	550	16.32	21.74	18.12	19.32	0.4121	16.6415	0.1957
Returns	550	0.0128	0.3942	0.1246	0.0995	0.04318	10.5788	7.4521
Market share	550	0.012	0.32	0.086	0.06	0.0028	4.2030	10.2106
Corporate tax	550	9.37	12.92	11.08	10.57	0.4328	1.2388	9.9507
The unemployment rate	550	0.093	0.23	0.16	0.12	0.0431	7.0246	34.0031
Age	550	3.774	3.94	3.83	3.89	0.1238	7.986	8.3252

• Checking Normality:

One of the things that is usually considered in the data review is the normalization of the data. When the study is based on real data and there are limitations to sample selection, this may result in data not being normalized. Of course, when the number of observations is high, the normalization of data through the central limit theorem can be justified. The Jarque-Bera (JB) test has been used to check the normality of the data. The statistical hypothesis of this test is presented below:

$$\begin{cases} H_0: \text{The distribution of the variable is normal} \\ H_1: \text{The distribution of the variable is not normal} \end{cases}$$

If the significance level of the test statistic is more than 0.05 (significance level ≥ 0.05), the hypothesis is based on the normal distribution of the dependent variable and vice versa. Table 2 shows the results of this test for the capital expenditure variable.

Tab.2.Results of the Jarque-Bera Statistic

Variables	Test statistic	The significance level
Value of capital	325.54	0.0000
Returns	842.91	0.0000
Market share	341.52	0.0000
Corporate tax	776.83	0.0000
The unemployment rate	542.65	0.0000
Age	715.71	0.0000

As shown in the table above, the data is not normal, which is resolved through the central limit theorem, because in this case the data assumes that the number of observations in it is higher than 30 is normal.

• F Limer Statistics:

Considering that observations in this research have been exploited at different levels, the question most often used in applied studies is are there any indications that data integration is possible, or that the model varies across all cross-sectional units. Therefore, it should first be examined whether there are any differences between levels, heterogeneity, or individual differences.

In case of heterogeneity of the panel data method, otherwise, the least square method is used to estimate the model. For this purpose, the F Limer statistic is used. In this test, the assumption H_0 of the same width of origin (combined data) against the opposite hypothesis H_1 is used, the inaccuracy of the width from the origin (panel data method) is used. The results of F Limer statistics are as follows:

Tab.3.F-Limer statistics

	Description	Amount	Possibility
First model	Period F	1.8543	0.1106
	Period Chi-square	6.4192	0.0984

As shown in Table 3, the results of the Chow test show that the probability obtained for the F statistic is more than 5%, so the zero hypothesis that the model data is compilation is accepted.

• Autocorrelation Test (Durbin-Watson):

One of the assumptions that are considered in the regression is the independence of the errors (the difference between the actual values and the predicted values by the regression model) of each other. If the independence hypothesis of errors is rejected and the errors are correlated, regression is not possible. In order to be independent of each other, the Durbin-Watson statistics are used.

If the value is in the range of 2.5 to 1.5, a lack of correlation between the errors is accepted, otherwise the correlation between the errors is present. According to the values obtained for the research model, the Durbin-Watson stature is 1.88, resulting in a lack of correlation between errors.

HYPOTHESIS TEST

• Least Squares Model (OLS Regression):

According to Chow's test results, the least squares model is used to estimate the parameters of the multivariate regression equation. The results of this test are described in Table 4:

Tab.4. Results of regression analysis of the research model

Variables	Coefficient	Standard deviation	T Statistics	The significance level
Width from source	0.0870	0.0438	1.9874	0.0448
Returns	0.0530	0.0128	4.1131	0.0021
Market share	0.0953	0.0445	2.1392	0.0425
Corporate tax	0.0064	0.0035	1.8253	0.0561
The unemployment rate	0.0446	0.0852	0.5242	0.6231
Age	0.0729	0.0123	5.8985	0.0024
The coefficient of determination	0.2732	Significant level of F statistics		0.0000
Adjusted coefficient of determination	0.2615	F statistics		14.3281
Durbin-Watson Statistics	1.8828			

DISCUSSION AND CONCLUSION

As you can see in the table above, the significance level of the rate of return on the companies listed in Tehran Stock Exchange is 0.0021. Since this number is less than 0.05, it can be concluded that the assumption zero is rejected and the assumption is verified and according to the coefficient of this variable (0.0530), it can be stated that the value of capital and rate of return in companies selected as the sample of this research has a positive significant relationship, and shows that 1% change in the independent variable (returns) causes 0.0530% direct change in the dependent variable (value of capital). According to the above description, the research hypothesis is confirmed.

• Suggestions:

Regarding the title of the issue and the fact that the topic was carried out in the field of Bourse companies, this can be used to manage stock exchanges, corporate executives, potential and actual investors of different sectors, such as institutional investors, public and legal investors, professors

and accounting students, and financial management and other people who are somehow interested or related to the topic are attractive. Therefore, based on the results of the last season and the analyzes conducted in this chapter, the following suggestions are presented:

1. It is suggested that investors pay more attention to their investment decisions in companies with a higher risk of centralized risk.
2. It is recommended to invest in companies that have higher internal profitability.

REFERENCES

- [1] *Admati, A., Petleider, P. and zechner. L. (1994). 'Large Shareholder, risk sharing, and financial arket equilibrium', Journal of political economy, 94: 461-480*
- [2] *Dater, Vinayt., Naik, N., Radcliffe, R. (1998) "Liquidity and Stock Returns: A Alternative Test" Journal of Financial Market, No. 1, PP: 203-219.*
- [3] *Eugene, F., Kenneth, F. (1988). "Dividend Yields and Expected Stock Returns." Journal of Financial Economics, Vol 22, pp: 3-25.*
- [4] *Green, .LP. (1999). the impact of-the quality of earnings on the valuation relevance of cash flow disclosures. The British Accounting Review. 31. 387-413.*
- [5] *Hawkins, D. f. (1998)"corporate financial reporting & analysis": text &cases, 4th edition.*
- [6] *Sang G, J., Marathe, A., Shawky, H.A. (2002). "Liquidity and Stock Returns in Emerging Equity Markets" Emerging Markets Review, No. 4, pp: 1-24.*
- [7] *Penman, S. (1996).The Articulation of Price-Earnings and Market- to- Book ratios and the Evaluation of Growth.Journal of Accounting Research.*
- [8] *Xing, Y. (2002). "Firm Investment and Expected Equity Returns" Business. YX35G Columbia. Edu.*