

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

Risk assessment and risk management are a young and innovative science field and it is not over 40 to 30 years old. During this period, the first scientific journals, papers and scientific conferences have been formed, in which the main idea and principles of how to evaluate and manage accurate and desirable risk are discussed. The supply chain risk is a potential loss for a supply chain in terms of efficiency and effectiveness values, and is intended to be extracted through unspecified and unspecified improvements in supply chain characteristics. This research examines the risk centered on companies admitted to Tehran Stock Exchange and its relationship with the value of capital. Excel and Eviews software have been used to compute and prepare the data for the required research information as well as their analysis. The society and the statistical sample of companies accepted in the Tehran Stock Exchange during the period from 2011 to 2015. The results showed that there is a positive and significant relationship between the centralized risk and the value of capital in companies selected as the sample of this study. This means that 1% change in the independent variable (centralized risk) causes 0.3727% direct change in the dependent variable (value of capital). According to the above description, the research hypothesis is confirmed.

KEYWORDS

Risk, Risk Management, Capital Value, Tehran Stock Exchange

INTRODUCTION

The concept of risk and risk assessment have a long history. More than 2400 years ago, the Athenians considered the issue of risk assessment and assessment before adopting a decision (Bernstrin, 1996). However, risk assessment and risk management are a young and innovative science field that is not more than 40 to 30 years old. During

this period, the first scientific journals, papers and scientific conferences have been formed, in which the main idea and principles of how to evaluate and manage accurate and desirable risk are discussed. In general, these ideas and principles form the basis of this area. These foundations have shaped the molds for risk assessment and management that have emerged since the 1970s and 1980s. Although these areas have been developed and developed over the decades. However, new and numerous expert analytical techniques and techniques have been developed, and risk analysis approaches and approaches have now been used in most units and sectors. To illustrate this, we can point to specific groups of society that use risk analyzes. For example: answers provided to solve problems, ecological risk assessment, emergence of nano scale materials, engineering and infrastructure, exposure assessment, risk and safety policies and policies.

STATEMENT OF THE PROBLEM

Various attempts have been made to formulate the same definitions and to accept keywords related to fundamental concepts in the field of risk. Each field of science or system requires a firm resistance to well-defined definitions and understandable global concepts and terms. Nevertheless, experience has shown that an agreement on an identical set of definitions is not realistic. This was the departure and change of the deliberate process recently undertaken by the SRA, leading to a new SAR (SAR) vocabulary (SRA, 2015a).

This glossary is based on the basis and belief that it is still possible to form valid definitions, which leads to different perspectives in fundamental concepts, and the distinction between qualitative definitions and relevant and consistent criteria is formed. Here, we will focus on the concept of risk, but this glossary covers terms such as probabilities, volatility, elasticity, resistance.

While trying to accept different views, it does not mean that all the definitions that can be found in the literature are

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

included in these glossaries. These definitions should include some basic guidelines (basic principles and rationales) such as rationality, descriptiveness, desirability, comprehensibility, precision, and the like. In the following, we summarize the definition of risk based on SRA:

Let's consider a future activity, for example, we define the function of a system and risk in relation to the results of this activity in accordance with human values. These results are often seen in relation to some of the reference values (planned values, goals, etc.), and these emphases are not normal in unpredictable and negative outcomes. There are always at least some results that are considered as negative and unpredictable results.

Heckman et al. (2015) pointed to the lack of clarity and clarity in understanding what the concept of supply chain risk refers to and what researchers are looking for solutions to. A new definition has been proposed: the supply chain risk is a potential loss for a supply chain in terms of efficiency and effectiveness values and is intended to be extracted through unspecified and unspecified improvements in the characteristics of the supply chain. Authors say the real challenge in the supply chain risk management sector is still to define, map, and model the supply chain risk. To date, supply chain risk management has suffered a lack of a qualitative and qualitative benchmark for supply chain risk that supports and supports the characteristics of modern supply chains.

We are seeing a similar structure with the SRA script structure with a broad concept of qualitative criteria that outlines the risk. The supply chain risk is only an example to describe this risk-related set of functions. Examples of finance, business, and operational research will be presented to outline the various issues related to the challenge of interpreting and measuring appropriate risk. These are beyond the scope of this article and are presented to provide a pervasive view of their contribution.

In the area of finance, business and research, significant work related to measurement and risk metrics includes both time-based and time-based criteria, and quality-based metrics. The first item covers, for example, the expected loss and expected loss function, and the second item, the risk value (VaR) and the conditional risk value (CvaR). Researchers have come to the conclusion that analyzing their assets and discovering how successful they have been, have made informed risk interpretations in the area of decision making and under different circumstances. For example, for a portfolio of projects or portfolios and a change in the degree of uncertainty associated with the parameters of enduring models that can be found in the works of Natarajan et al, 2009, Shapiro 2013, Brandtner, 2013 and mitra, salmpinis, christian and hood, 2015. All of these sources indicate that these tasks often have difficulty in mathematics and probabilistic bases with strong infrastructures that are based on economic theory, such as the expected utility theory.

Flage et al, 2014 put forward a new approach in this regard, entitled: Challenges and guidance for improvement and development in expressing and introducing risk assessment under uncertainty. Statistical analysis and

probabilities are the dominant and penetrating method used for uncertainty situations and related risk analysis. Both on non-cognitive and linguistic issues (the expression and presentation of deviations) and on cognitive topics (in relation to the lack of knowledge). For uncertainty with non-cognitive and litigious issues, there are widespread agreements on the use of probabilities with a limited number of interpretations.

Although there is no immediate and precise answer to the uncertainty associated with the topic. Bayesian's probable mental approaches are the most common ones, but there are many alternatives to them, such as distance probabilities, probabilistic measures, and qualitative methods. Flage et al, 2014 examine this problem and identify issues that are important in their behavior. One of these topics that took care of ideas was when the mental possibilities were not appropriate. This discussion is often seen in a way that if the knowledge propositions are relatively weak, then it would be difficult and impossible to assign and use mental possibilities with great confidence.

In recent years, there have been many advances in the subject of infrastructure and infrastructure in this area, namely risk. These developments in the present paper form the core of the discussion. The risk area has two main tasks:

1. Use risk assessment and risk management to study the risk of specific activities (for example, investing or installing a berth at the coast)
2. Risk research and development related to concepts, theories, frameworks, perspectives, principles, methods and models of understanding, assessment of communication, promotion and (in its broad sense) risk management / governance (Aven & Zio, 2014).

The concepts and tools of evaluation and management presented in the second task are presented for use in management problems and issues and the first task assessment. Simply put, the risk domain is a matter of understanding the world (in relation to risk) and how we can and should understand, evaluate and manage this world.

BACKGROUND RESEARCH

Rudez and Mihalic (2007) in their study, "Intellectual Capital in the Hotel Industry, a Case Study from Slovenia," investigated the impact of intellectual capital components on financial performance in the hotel industry in Slovenia. The results of this study showed that there is a significant positive relationship between intellectual capital components and financial performance in this industry, which indicates the effect of intellectual capital on the performance of companies. Secondly, the coefficient of high impact of capital investment relative to other components of intellectual capital is on corporate financial performance.

Berimble and Hogeson (2007) investigated the relationship between accounting variables and systematic risk. They showed in their research that accounting beta variables, earnings changes, growth, interest income ratio, current ratio, financial leverage, interest coverage ratio and tax leverage account for more than 57 percent of systematic risk changes.

Giner and Rerwert (2006) examined the risk associated with accounting data in the Madrid Stock Exchange. They concluded that there was a positive relationship between the cost of equity and accounting risk factors. In such a way, these variables reflect the underlying business risk stemming from the three types of company activities (operational, financing, and investment).

Young Chu et al (2006) investigated the relationship between intellectual capital components (human capital, communicative capital and structural capital) with the performance, the Advanced Industries of the Institute of Industrial Technology Research (ITRI) in a research entitled "Intellectual Capital, an Empirical Study of ITRI") and concluded that there is, firstly, a significant positive relationship between the components of intellectual capital and corporate performance, and secondly, the increase of intellectual capital depends on the process of creating value and their strategic storage in the organization.

Stone (2004) used capital cost estimates to estimate expected returns and the growth rate of expected short-term profits, and then, the ratio of the calculated stock risk to the beta market factors, firm size, financial leverage, the ratio of book value to market price, the ratio of profit to price and daily returns of the previous year. The results showed that the calculation of risk based on two methods of target pricing and acetone pattern showed a better relationship with risk factors.

IMPORTANCE AND NECESSITY OF RESEARCH

Many studies have been done to provide the right ways to invest in securities. The research carried out in the last fifty years has led to the formation of new investment theories. In these theories, selection of portfolios is done by examining the combination of risk and the returns of these securities. As a principle, selecting the optimal portfolio requires an estimation of both the risk factors and the returns of the securities. In fact, risk and return are the two main pillars of investment decision making, so that each investor demands higher yields by accepting higher risk levels. Similarly, the lower the risk is expected, the expected returns will decrease (Rai and Saeidi, 2008).

RESEARCH HYPOTHESIS

- Investigating the centralized risk in listed companies in Tehran Stock Exchange and its relation to the value of capital.

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

Capital value = a0 + a1 Herfindal + a2 Market Share + a3 CorporateTax + a4 Unemployment + a5 Age + e

• Dependent Variables:

Herfindal index: Herfindal index is obtained from the following relationship:

The Hierarchical Index (HI) to eliminate some of the deficits of the ratio of concentration and inverse number of firms is Erisk. Herfindal (1959) proposed. The Herfindal Index determines how the market size distribution between existing firms and the type of market structure outperforms the concentration ratio. With the HI index, all points on the focus curve are considered and the information available throughout this curve is used; in fact, in this index, unlike the focus index, information from all firms is used to calculate the degree of concentration. The Herfindal Index (HI) is calculated as follows:

$$(1) \quad HI = \sum_{i=1}^n S_i^2$$

$$(2) \quad HI = \sum_{i=1}^n \left(\frac{X_i}{X}\right)^2$$

In this formula, n is the number of firms in the market and S is the share of firms from the total size of the market. In the above index, the number of firms (x) and the relative share of them (xi) are considered in the calculation. If there are countless firms with the same relative size in the market, the Herfindal Index will be very small and close to zero, and if there are a few firms with relatively unequal market sizes, this index will be close to one (Herfindal, 1959).

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.

CorporateTax: 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	Skid ding	Elongation
Value of capital	550	16.32	21.74	18.12	19.32	0.4121	16.6415	0.1957
Herfindal Index	550	0.0001	0.1024	0.0328	0.0082	0.0034	5.4462	13.2157
Market share	550	0.01	0.32	0.08	0.06	0.002	4.2030	10.2106
Corporate tax	550	9.37	12.92	11.08	10.57	0.4328	1.2388	9.9507
The unemployment	550	0.09	0.23	0.16	0.12	0.0431	7.0246	34.0031

rate	Age	550	3.77	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
Herfindal Index	156.37	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 Statistic	The significance level
Width from source	0.0870	0.0438	1.9874	0.0448
Herfindal Index	0.3727	0.0359	10.3806	0.0000
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 Herfindal coefficient of the companies listed in the Tehran Stock Exchange is 0.0000 and since this number is less than 0.05, it can be concluded that the assumption zero is rejected and the assumption is verified. According to the coefficient of this variable (0.3727), it can be stated that the centralized risk and value of capital in the companies selected as the sample of this research has a positive meaningful relationship and shows that 1% change in the independent variable (centralized risk) causes 0.3727% direct change in the dependent variable (value of capital). According to the above description, the research hypothesis is confirmed.

• Suggestions for Future Research:

Whatever the research, though comprehensively, in terms of some material and material constraints, both temporally and temporally, can not cover all aspects of the subject and deal with it in various ways. This research has not been an exception to this, so to do some research in line with this topic as well as its development, the following suggestions are presented for further research and future researchers:

1. For further research, it is suggested that different, and perhaps more reliable, results from other indicators be used to determine the risk of a centralized risk in order to achieve a comprehensive benchmark.
2. It is suggested that this study be compared with the number of years-more companies to achieve more reliable results, because the results appear to be directly related to the sample size used.
3. Finally, it is suggested that research be carried out in the areas referred to below:
 - The relationship between centralized risk and earnings response coefficients.
 - The relationship between centralized risk and the interactional social responsibility rate and internal rate of return.
 - The relationship between the internal rate of return and the yield response factor.
 - The moderating role of corporate governance mechanisms in the relationship between the sensitivity of cash flow to centralized risk investment.

REFERENCES

- [1] *Brimble, M.A., Hodgson, A. C. (2007), "The association between accounting variables and systematic risk", Managerial Finance, Vol. 33 (8), pp. 553-573.*
- [2] *Cheng, Q. (2005). What Determines Residual Income? The University of British Columbia. The Accounting Review.*
- [3] *Giner, B., Reverte, C., (2006), "The Risk-Relevance of Accounting Data: Evidence from the Spanish Stock Market", Journal of International Financial Management and Accounting, Vol. 17(3).*

- [4] **Gillian, S.G., Starks, L.T. (2003).** "A Survey of Shareholder Activism: Motivation and Empirical Evidence," *Contemp Finance Dig*, 10-38.
- [5] **Halsey, R.F. (2000).** Using the residual-income stock price valuation model to teach and learn ratio analysis. *Accounting Education*.
- [6] **Stark, A.W., Hardy M, T. (1998).** On the empirical relationship between market value and residual income in the U.K. www.ssrn.com.