

The effect of the reliability of accounting information on systemic risk on listed companies at Tehran Stock Exchange

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Abstract

One of the most important subjects in the financial management is the systematic risk which has always been focused on by the researchers. Due to the vastness of the market, there exist different devices for the investment in every financial market. The main goal of the shareholders, business owners and those who are concerned is to produce the optimum return and they face some risks in order to reach their goals and the fundamental requirement is to keep the relation between the risk and the return balanced. In other words, the decision makers of the stock markets produce their desired return by using the financial information of the companies. Therefore, the investigation into the risk and the factors influencing the risk is of importance. This article studies the reliability of the accounting information upon the systematic risk. To test the hypothesis, the data obtained from 52 companies listed on the Tehran stock exchange from 2006-2010 were chosen by the systematic deletion method and were tested by using the multi-variable regression. The conclusion suggests that there is a significantly positive statistical relation between the reliability of accounting information and the systematic risk.

Keywords: Reliability of accounting information, Accruals quality, Earnings quality, Systematic risk, Fama and French three-factor model.

JEL Classification: M41

Introduction

The information offered to the managers, the investors, and the other users should be qualitatively high. The purpose of financial invoices, the final production of accounting system, and financial reporting is to render the brief and classified information about the financial situations, financial operations and financial inflexibility of the commercial units, which can be beneficial for the huge number of the financial invoice users for the purpose of making economic decisions.

According to the theoretical concepts of the financial reporting, a useful piece of the information must have particular qualitative features. The main qualitative features are related to the contents of the information and its reliability (Bolo et al, 2011).

Today, information systems of accounting play a prominent role in the operations of an organization within the economic environment. A large number of economic decisions are made based on the figures and information obtained from these systems. The financial reporting is a reflection of the information and expectations of the users of the financial invoices. Therefore, the passage of time, the development of economic activity, and the growing complexity of economy involve the growth of the purposes and the methods of reporting in order to meet the information needs because the dependable information obtained from the financial reporting is needed for making decisions about the activities of the business units (Khodaie Ardakani, 2008).

The investors make a choice from a wide range of investments based on the characteristics of risk and return. The investment in financial asset always entails some sort of hazard and insecurity which threatens the return and the capital. So, the role of risk in the investment is of importance.

It is quite obvious that the shareholders and the other beneficiaries of the economic centers try to reduce the cost of investment by minimizing the risk of investment. One of the risks the investors are faced with in the documents and negotiable instruments is the systematic risk. That is why it is necessary to draw attention toward the systematic risk and the influential factors on it in the capital market. The purpose of this study is to determine the dependable relation between accounting information which is measured by the accruals quality and it is called the systematic risk.

The Expression of the Question and the Theoretical Principles

The realization and the generation of revenues and the expenses of a company often differ from the time of receiving and paying cash. The accruals quality which distinguishes the profit of accounting from the cash flow is reported from this difference.

According to the point of view of the financial boards of accounting, one of the important roles of the accruals quality is to transfer the determination of the cash flow over the time so that the figures of the cash flow can measure the activity of a company better. The responsible accounting focuses on the economic transactions and events rather than the cash payment and receptions.

In the responsible accounting, the economic transactions and events are registered the moment they occur. In a responsible method, the principles like the realization and agreement are used for the reflection of revenues, the expenses, and the calculation of the benefits of accounting for example, the registration of the received account increases the

determination of the cash flow in the benefit, and conforms the time of its determination with the time of gaining the economic benefit from the setting (Dastgir and Pairvand, 2010). As a matter of fact, the principle of responsible accounting says the revenues are deposited into the accounts when the services are done.

In this method, the contracts made from the cash reception and payments are not only registered, but the business unit registers the contracts made on credit. After the industrial revolution had enhanced the commerce and the complexity of the contracts, the need for the responsible accounting arose. Although the success of a company can be measured by gaining the cash, the cash contract report has difficulty conforming and timing which make the cash flows a dangerous criterion for measuring the activities of companies. Since the companies make contracts on credit, reporting only the cash contract results in the wrong measurement of the activities of the companies. In the responsible accounting, the timing of knowing the cash flow is ignored in the reporting of the benefit. The benefit is made out of surplus and it is registered. According to the principle of the recognition of the revenues, the companies recognize all or considerable part of the cash they receive as the cost of their services. When the cash is reasonably known, and according to the principle of conformity, the companies recognize the cost in a period of time when the revenues are earned (Tousi, 2011).

In order to measure the relation between the risk and the return, a line of thoughts in the framework of the pricing model of capital goods has been generated. In this model, the investment is valued by using proper theory and methodology when gaining benefit is expected from the investment in future. To value and budget the capital of a project, the possibility to gain the capital must be studied. In the decision-making process, the evaluation of this possibility is called the risk rate. In other words, there is a possibility that the real return of an investment will be less than the expected one which is called risk. The systematic risk is inevitable and if it occurs, it can't be controlled. The systematic risk has an effect on all the documents and negotiable instruments, which is called the market risk. The systematic risk arises from the political risk, the economic risk, etc. (Vakili Fard, 2010).

By studying the index of the reliability of accounting information and the systematic risk, the importance of accounting information has been empirically tested and determined whether it has been used by the investors and the other beneficiaries and it has an effect on the systematic risk or not. If any relation between these two is proved, it can be stated that the quality of accounting information can improve the function of documents and negotiable instrument, the reduction of risk, and the capital cost, or other methods should be searched to strengthen the role of accounting information.

The Purposes and the Theoretical Framework

One of the main sources of information for people to make decisions is the accounting information. The high quality information brings about more coordination between the managers and investors to make decisions about their investments. On the contrary, the lower the quality of the information is, the higher is the risk the investors have to sustain. When they tolerate higher risks, they expect the higher return.

One of the functions of the accounting is to provide the useful information for the investors in order to ascertain the value of the documents and negotiable instruments as well as help them to make wise decisions about investments. On this purpose, the systematic risk and its influential factors in the market should be focused on. The aim of this study is to ascertain the reliability of the accounting information which is measured by the accruals quality and it is called the systematic risk.

Niu (2006) studied the corporate governance characteristics on the quality of accounting earnings; his research was conducted from 2001 to 2004 in Canada. He investigated over the ownership concentration and management ownership. The result showed that the corporate governance mechanisms would improve the earnings quality.

Velury and Jenkins (2006) did the research to study the relation between the earnings quality and the corporate governance in the U.S. from 1992 to 1999 and they concluded that the earnings quality wasn't related to the corporate governance and the concentration of governance wouldn't influence the reported earnings quality. The conclusion of the research suggests that the concentrated corporate governance may negatively influence the earnings quality.

Pierre and Smith (2008) did a research entitled "The stock prices and accounting information" from 1987 to 1996 in Malaysia and studied how the published accounting information with the stock prices by using the equation of regression. They wanted to know the relations between the variables. The conclusion of the research shows that the two accounting variable, that is, the book value of equity and the benefits reflected in the balance sheet and income statement, in turn, are of high value in the process of valuation, entitling the managers to use the accounting system as a main source of information so as to study the financial activities.

Li and Wang (2010) studied the relation between financial reporting quality and investment efficiency in the China's securities market from 1998 to 2006. The conclusion of the above-said research shows that the quality of the financial reporting is negatively correlated with the upper limit and lower limit investments and the effects of the accruals quality and leveling off the benefit on the upper limit and lower limit investments are of considerable importance.

Iatridis (2010) conducted a research into the admission of international standards of financial accounting on the quality of reported figures accounting. He also focused on the correlation between the information coming from the financial invoices based on IFRS and the value of the company. The results show that the execution of the international standards of accounting improved the quality of accounting figures, so giving the managers a free hand decreases the earnings management and this leads to the timely recognition of the loss, and finally this brings about the accounting information report which is more related with the value. This article suggest that the Less information asymmetry and the less interference with the benefit should result in disclosing high quality and useful financial information, helping the investors to make the wise and impartial judgments.

Rajgopal and Venkatachalam (2011) tested the relationship between financial reporting quality and return volatility in the United States of America during 1962 to 2001 and found that there is a positive relationship between lower earnings quality and return volatility. This positive association holds after employing several mediator variables and the impact of some factors such as new listed firms, hi-tech firms and observations of the company's negative earnings.

El-Sayed Ebaid (2011) conducted a research entitled the accruals quality and the prediction of the cash flow of the future in emerging markets of Egypt. The evidence shows that the retained earnings can predict the cash flow of the future better. He also understood that non-accumulated accruals items (made of main constitutes), changes in the accounts receivable and payable and in inventory, depreciation of fixed assets, amortization of intangible assets and the other accruals items can significantly enhance the prediction of the earnings.

Houmes et al (2012) studied the effect of the leverage of the operation on the systematic risk of the USA transportation industry. They used three indexes of the degree of the operation

leverage, the natural net algorithm of the property, plant and equipment, the percentage of the active staff. The research showed that the three variables of the operation leverage would be positively related to the systematic risk (β).

Gill and Biger (2013) tested the impact of corporate governance on the efficiency of the working capital management of the manufacturing listed firms from 2009 to 2011. The sample is composed of 180 listed firms on NYSE. The findings of this study suggest that the corporate governance plays a key role in improving the efficiency of the working capital management. Cohen et al (2013) studied the role of cash and accrual accounting in the local governments. They investigated 106 municipalities in Greece and found that the information on cash accounting plays a significant role in decision making rather than the role played by the information of accrual accounting. It seems that larger municipalities use extended accounting information for the negotiations about the cash and accrual accounting.

Methodology

Materials and Method

This research is of descriptive-correlative nature because the relation among the variables is examined and valued. Since the study can be used in decision-making process, it is regarded an applied project. The research covers the period from 2002 to 2010 and has been used to measure the reliability of accounting information and estimate the coefficient of the Fama and French accounting information of the period from 2002 to 2005 and investigate the relations among the main variables from 2006 to 2010.

In order to answer the question, the following hypothesis is presented:

There is a significant relation between the systematic risk and the accruals quality.

The statistical Population, the Sample and the Sampling Method

In order to choose a statistical population, we referred to Tehran's documents and negotiable instruments and the statistical sample was chosen by using the deletion sampling and considering the following limitations.

- The fiscal year ends in March every year.
- The shares of the companies were traded at least for 100 days a year.
- The companies shouldn't be insurance companies, investment companies, or broker companies.
- The required data and information should be available for measuring the variables of the research.

Regarding the method conditions and criteria, 52 companies were selected as a sample.

The Means of Data Collection

The data collection is done through the library method. To collect the data needed in the literature, the central bank of the Islamic Republic of Iran and the financial statements of the companies listed to the documents and negotiable instrument center were referred to as the source of information. To access the data, the Rahavard-e-Novin Software, the website of Tehran's stock exchange and the website of Tehran's documents and negotiable instruments can be referred to.

To analyze, results, the multi-variable regression was used and in order to organize the data, Excel and SPSS 20 were utilized. To test the hypothesis, the confidence level was 95%.

The Variables and the Procedure

The variables existent in the research are divided into control, dependent, and independent ones. The reliability of the accounting information is regarded as the independent variable. To calculate the reliability of the accounting information, the accruals quality was used.

In this research, Dechow and Dichev modified model (2002) proposed by Francis et al (2005) was utilized. The following method is used to measure the accruals quality:

$$TCA_{it} = \phi_0 + \phi_1 CFO_{it-1} + \phi_2 CFO_{it} + \phi_3 CFO_{it+1} + \phi_4 \Delta REV_{it} + \phi_5 PPE_{it} + v_{it}$$

TCA is the total current accruals quality which is calculated by the following method:

$$TCA_{it} = \Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta STDebt_{it} - Depn_{it}$$

CFO is the operating cash flow which is measured by using the following method:

$$CFO_{it} = NIBE_{it} - TCA_{it}$$

NIBE_{it} is the net income before the extraordinary items.

ΔCA_{it} is the changes in the current assets.

ΔCL_{it} is the changes in the current liabilities.

$\Delta Cash_{it}$ is the changes in cash.

$\Delta STDebt_{it}$ is the changes in the current share of the long-term debts.

$Depn_{it}$ is the depreciation cost of the tangible and intangible assets.

ΔREV_{it} is changes in the revenues.

PPE_{it} is considered as the gross value of property, plant and equipment (the fixed assets).

v_{it} is the residual variable which its standard deviation from t to t-4 determines the accruals quality.

The present study exploits the depreciation and amortization costs from the notes accompanied to the basic financial statements and operating cash flows.

The Dependent Variables

In this research, the systematic risk is regarded as the dependent variable, considered as the coefficient of angle (β^M) in the Fama and French (1993) three-factor asset pricing model.

$$r_t - r_{f,t} = \alpha + \beta^M MKT_t + \beta^S SMB_t + \beta^H HML_t + \varepsilon_t$$

Where in:

r is the stock return.

r_f is the risk-free rate.

α is the Intercept.

$\beta^M, \beta^S, \beta^H$ are the angle coefficients of the market factor, size factor and value factor.

MKT is the market factor.

SMB is the size factor.

HML is the book value to market value (value factor).

t is the time.

ε is the residual value.

MKT is the market risk which is originally the beta factor of the model presented by CAPM. Market risk is defined as the difference between the market return and the risk-free return. The market return can be obtained from the total index of end subtracted from the total index of beginning divided by the total index of beginning. The index of the risk-free return is defined as the profit of government bonds.

The second factor, SMB , is the difference between the mean return of the portfolio of the shares of small companies and the portfolios of the shares of big companies, which is also called the size factor.

The third factor, HML, is the difference between the return of the portfolios of company shares with higher book value than the high market value and the return of the portfolios of company shares with the lower book value than the low market value which is called the value factor.

The Control Variables

The control variables are as follows:

The Size: The size of the company can be obtained from the natural logarithm of the value of capital market.

The proportion of the book value to the market value: This can be obtained when the book value of the shareholders is divided by the market value of the shareholders.

The proportion of the fixed assets to the total assets (capital intensity): the proportion of the net property, plant and equipment to the total assets.

The cash ratio is the proportion of the cash and equivalent amount of cash to the total current debts. In addition, the control variables include the angle coefficient of the size factor (β^S) and the value factor (β^H).

The Total Model of the Research

$$\beta_{it}^M = \psi_0 + \psi_1 \text{Accruals Quality}_{it} + \psi_2 \beta_{it}^S + \psi_3 \beta_{it}^H + \psi_4 \text{Size}_{it} + \psi_5 \beta$$

$$\text{Book-to-Market}_{it} + \psi_6 \text{Capital Intensity}_{it} + \psi_7 \text{Cash Ratio}_{it} + \epsilon_{it}$$

In the model β^M , the systematic risk of the i company in a year equals t . The index of the reliability accounting information, that is, the accruals quality and the control variable have already been discussed in the above paragraphs.

Results

The Statistical Description of the Data

Table 1.

The Descriptive Statistics of the Variable

	Mean	Median	Standard Deviation	Skewness	Kurtosis	Minimum	Maximum
Capital intensity	0.215	0.164	0.182	1.166	0.852	0.0016	0.8321
Cash ratio	0.084	0.047	0.157	8.919	108.490	0.0023	2.1108
Accruals quality	0.604	0.626	0.205	-0.303	-0.801	0.1267	0.9918
Size	27.284	26.902	1.454	0.827	-0.125	23.8749	30.7716
Book-to-market	0.467	0.301	0.604	7.216	77.748	0.0077	7.2770
β^M	1.866	30.429	722.382	-9.946	122.601	-9049.480	2309.350
β^S	0.7184	-0.133	12.9562	8.828	99.571	-35.99	153.310
β^H	-0.3103	-0.2081	9.875	8.914	119.648	-43.65	122.840

Testing the Hypothesis

There is a significant relation between the accruals quality and the systematic risk.

Table 2.

Analysis of Variance

Source	Degree of Freedom	Residual squares	Mean squares	F	Sig. level	Durbin Watson	R2	Adj. R2
Regression	8	92220038.47	11527504.8	569.858	0.000	1.635	0.819	0.817
Residual	147	2973621.916	20228.721					
Total	155	95193660.38						

Table 3.

Regression coefficients

Variable	Coefficient	Standard Deviation	t	Sig.
constant	62.425	221.570	0.282	0.779
Capital intensity	4.381	670156	0.065	0.948
Cash ratio	-22.578	123.267	-0.183	0.855
Size	-3.276	7.819	-0.419	0.676
Book-to-market	4.768	31.461	0.152	0.880
Accruals quality	130.849	63.148	2.072	0.040
β^S	17.080	5.483	3.115	0.002
β^H	99.807	16.928	5.896	0.000

Regarding Table 2, the level of significance of the statistic F shows that there is a significant regression and a linear relation between the dependent and independent variables with 95% confidence level. To study the independence of error of each other, Durbin-Watson test was used. The lack of correlation among errors is accepted when the statistic is between 1.5 to 2.5.

The finding of Durbin-Watson statistic shows the relative independence of data. According to Table 2, the modified coefficient of determination of the model is 0.81, that is, 81% of the changes of the systematic risk can on average be shown by the model. In Table 3, it is obvious that there is a significantly positive relation between the accruals quality and the systematic risk regarding the confidence level of the statistic t obtained from the accruals quality and the systematic risk. In addition, regarding the findings of Table 3 and the level of significance, it can be said that the measures of β^H and β^S have a significant relation with the systematic risk, but other control variables have a significant relation with the systematic risk.

Discussion and Conclusion

The hypothesis in relation to the reliability of the accounting information is calculated by the accruals quality, and the systematic risk is tested. By using the modified model of Dechow and Dichev (2002) presented by Francis et al (2005) is tested and the systematic risk is measured by Fama and French three-Factor model.

Moreover, the study shows that there is a significantly positive relation between the accruals quality and the systematic risk. The large size of the accruals quality shows the small size of the measure of the accruals quality.

The findings show that the accounting information is becoming increasingly popular with the other users, shareholders, and the managers. The findings refer to the importance of the accounting information in Tehran Stock Exchange.

Considering the findings of the research and importance of the accruals quality in the estimation of systematic risk of investors in the capital market, it is suggested that the reliability of the accounting information should be relied on more than ever. To improve and strengthen the accounting information, the clarity of the revealed accounting information, and assuring the investors, the Stock Exchange should execute a number of strategies.

The other findings suggest that there is a significantly positive relation between the risk of the size factor (β^S), and the value factor (β^H), and the systematic risk. It is also suggested that the beneficiaries and the decision makers should take these two factors into account while making decisions about the estimation of the risk.

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