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# Evaluating the Relationship between Earnings Quality and Stock Returns in the Companies Listed in Tehran Stock Exchange

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#### ABSTRACT

This study has investigated the role of accruals in describing earnings quality of companies listed in Tehran Stock Exchange and relationship between earnings quality and ordinary and extraordinary stock returns has been studied, through accruals and their components. Our sample consists of 136 companies over the period 2008-2011. Accruals are separated to discretionary and non-discretionary components. To determine the relation of earnings quality with stock returns, six hypotheses have been tested. The results show that companies' stock returns are affected by the level of accruals and their associated components. In other words, there are significant differences between returns to companies who have reports on accruals as lowest and highest rates.

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#### INTRODUCTION

Over the past three decades, researchers have paid particular attention to topic in earnings quality, and it is attempted to achieve a reasonable and valid methodology for assessing the quality of earnings and to identify the affecting factors (Zariffard, 2004). The information content of components and other related factors are discussed, for topic of earnings quality so that it will facilitate the expected future cash flows and thus determining the value of the stock. Consideration to the quality of earnings in both occupations of the accounting and investment Management has been widely discussed (Anvariroustami, 2008). Literature in the field of accounting, financial management, investment management, guidelines and regulations of the Stock Exchange, reports of stock brokers directly or indirectly references to this topic (Laijiu, et al., 2013). The accounting profession's attention relies on this objective the reported net income reflects operating performance of the business unit fairly (Eskandarli, 2004).. But the application of the reported earnings to other sciences is to realize other specific goals. For example, financial analysts assess the quality of earnings in order to determine the relevant level of earnings and predict future net income and finally, specify share price of a company (Barzegar, 2011). Accruals to recognize earnings quality is an important indicator and is used in the stock valuation. Accruals play a role to change or modify identification of cash flows and adjusted amounts (adjusted earnings), this is better criterion to measure the performance of companies, on Statement of Accounting Concepts No 1. However, accruals are often based on assumptions and estimates that if wrong, should be corrected in future accruals and earnings (Mashayekhi, et al., 2012). So the quality of accruals and earnings due to the size of their estimation errors is reduced. Accruals are a distinction between companies' accounting earnings and their principal cash flows (Haghighat, et al., 2006). Large positive accruals indicate that earnings are much higher than the cash flows of the company. This difference is due to principle of the recognitions' revenue and principle of the matching. Based on accrual approach, if realizing revenues the occurring expenses, earnings can be reported. Since the accrual basis does not necessarily identify the revenues and expenses along with receiving and paying the cash and not estimate and predict for calculating the earnings, hence the question arises to what extent can these figures be trusted when decisions? Answering this question is important that incorrect decision due to insufficient and incorrect information makes resource sharing is unfair. Empirically, researchers have found that earnings to high accruals indicate that earnings are more than cash flows and in conclusion, have lower return (Badri, et al., 2013).. This is a profound study of the accruals' predictive power for stock returns. Therefore, in this study, the approach, which has not been yet considered in Iran's capital market, has been selected and examined. This approach is based on earnings' components, divided into cash and

accrual sections, thus, the role of accruals in earnings quality and their relationship with stock return are checked (khajavi, *et al.*, 2011). In other words, the relationship between quality of earnings, through accruals, and its components, through stock returns, has been studied.

#### Literature:

Richardson, et al., showed (2002) that the accruals with low reliability lead to less earnings persistence. Penman and Zhang (2006), another study showed that the earnings with high accruals is poor correlated with stock returns. Schipper and Vincent (2011) in examining the criteria of earnings quality assessment being used in previous studies and their relation to decision-making usefulness and economic definition of earnings demonstrated that the earnings quality depends on the type and amount of ratified contracts based on accounting information as well as the conventional measures. Chan, et al., (2006) examined relation of accruals (the difference between earnings and cash flows) with future stock returns and showed that companies' stock returns are reduced, with high accruals in the period following the reporting of financial information. One interpretation of these results is that companies' earnings are fallen, with low earnings quality (i.e. companies with high accruals) in the period after reporting earnings, because the investors realize to lower quality of companies and adjust stock prices, accordingly. They do this in separating components of accruals and classifying discretionary and non-discretionary accruals and similar results were obtained.

Zarief fard (2009) have studied to identify factors affecting quality of earnings Iranian companies. In this study, the desirable and undesirable characteristics associated with each element influencing the quality are prepared and it emphasized that the each company's quality of reported net earnings at any particular time is a function of the amount and degree of desirable and undesirable characteristics of financial accounting, components of net earnings involved in the quality of earnings. It is also a function of perceptions and views of each individual analyst and other users.

Saghafy and Kurdistani (2010) have studied reviewing and clarifying the relationship between earnings quality and responsiveness to changes in cash earnings. Examining 50 companies between the years 70 to 81, they to measure the quality of companies' earnings have used three definitions, the relationship between operating cash flow and earnings and components of earnings, earnings predictability and consistency of reported earnings. Based on the first definition, they have shown that the market reaction is positive to increase in companies' quality of earnings, despite predictions. Based on the second definition of quality of earnings, the market reaction is positive to decrease in cash earnings of companies in accordance with the predictions, in terms of definition of earnings, extraordinary returns (accumulation) of shares increase (decrease), when increasing cash earnings and unexpected earnings (decrease).

Nouravesh and Majidi (2013) studied the relationship between earnings quality and the cost of capital; the research results have shown that there is an inverse relationship between earnings quality and cost of capital. Haghighat and Humayun (2012) have studied the relationship between the quality of accruals and earnings. The research results have shown that the accruals' quality is affected by variables, firm size, earnings and sales, and there is a significant positive relationship between quality of accruals to sales, earnings persistence, firm size, operating cash flow and earnings, and a significant negative relationship between the quality of accruals and accruals, there is no significant relationship between the operating cycle and the quality of accruals.

Khajavi and Nazemi (2013) have studied the relationship between earnings quality and stock returns, with an emphasis on the role of accruals in Tehran Stock Exchange. According to research findings, the average stock returns of companies are not influenced by the rate of accruals its related components. In other words, one cannot assume that there is a significant difference among the average return of companies, their accruals are reported to minimum and maximum amounts. Nouravesh, *et al.*, (2013) have studied accruals' quality and earnings, while emphasizing on the role of error in estimating accruals. The research results show that there is a significant relationship between the changes in working capital (non-cash) and cash flows.

### Methodology:

The research hypotheses:

Firstly, our opinion is introduced based on existing theories in question, whether there is a significant relationship between earnings quality and stock returns, and so, according to the research question, hypotheses have been proposed. In order to determine the relationship between earnings quality and stock returns, in the research, two main hypotheses and 4 sub-hypotheses are provided. Accruals have been considered for this study as an important indicator of the quality of earnings in the stock assessments. Thus, the main hypotheses of this study were to determine the relationship between these accruals and stock returns being divided into two categories: ordinary and extraordinary returns are as follows:

The first main hypothesis: there is a significant relationship between accruals and ordinary stock returns. The second main hypothesis: there is a significant relationship between accruals and extraordinary returns.

The measure to realize accruals' quality in companies' earnings, in this research, is ordinary and extraordinary stock returns. This means that whatever the quality of the reported figures is more (less), it

predicts those companies' returns are higher (lower). Accruals will reduce in accounting earnings quality. Since accruals, themselves, are affected by related components to them, in the research progress, it has examined the impact of accruals' components i.e. discretionary and non-discretionary accruals and their correlation with stock returns. Discretionary and non-discretionary components mean how far managers have been allowed to operate freely, in the preparation and reporting. Whatever they can operate less freely, stability of the earnings is more, and it predicts this is further related to stock returns. For example, increase in the sales makes increase in the discretionary component of accruals. According to the material presented, secondary research hypotheses are defined as follows:

The first sub-hypothesis: there is a significant relationship between discretionary accruals and ordinary stock returns.

The second sub-hypothesis: there is a significant relationship between discretionary accruals and extraordinary stock returns.

The third sub-hypothesis: there is a significant relationship between non-discretionary accruals and ordinary stock return.

The fourth sub-hypothesis: there is a significant between non-discretionary accruals and extraordinary stock returns.

#### MATERIALS AND METHODS

The study is a kind of correlation type, and the information obtained from the type and the number was performed by the collective analysis of data. Companies' historic data is used in this study. Thus, it is semi-experimental. The statistical sample of the research includes companies listed in Tehran Stock Exchange at the end of 2011. Information about operating profit, cash flow driven from operating activities, stock prices, dividends per share, capital and other information required by the research, which include control variables in 14 years at least, for the 136 companies listed in Tehran Stock Exchange by the end of 1390, has been collected from three sources of information CDs about the Tehran Stock Exchange, exchange publications, , financial reports published by companies listed in Stock Exchange, along with the independent auditors' report and official website of company in Tehran Stock Exchange. The information collected in this way in relation to the sample companies, has provided the basis for measuring independent and dependent variables of the study.

Firstly, in the study, by means of quantile charts, quantile of outlier data can be eliminated in the research variables. Then, descriptive statistics has studied the research variables provided by the software and it will published regression model. In decision making whether to accept or reject a hypothesis, the probability value or significance level are set and then a correlation coefficient in the statistical hypothesis can be determined to test to be significance. T-statistic is the test statistic to verify this assumption. Then F-statistic is examined the model to be sufficient. Thus, the practice is to check the statistical hypotheses that first of all, the correlation coefficient is studied among the independent and dependent variables and being significant coefficients. The type and severity of relations have been examined in terms of dispersion charts and underlying hypotheses, including homogeneity of variance is performed by the dispersion charts, reviewing normality by Kolmogorov-Smirnov test and residuals' independence by Durbin-Watson statistic and Runs test. At last, if all hypotheses were confirmed, it would confirm the results of the fitted model to be correct.

The research variables:

Accruals:

The difference between operating profit and cash flows from operating activities, namely:

Accruals = operating profit - Cash flow from operating activities

This value is standardized in terms of the average companies' assets.

(A) Companies' average assets

Average assets = (assets at beginning of period + assets at end of period) / 2

- (B) Operating Profit: Profit or loss is driven from ordinary and continuous activities of the entity that is obtained in terms of average total assets, dividing the profit from ordinary and continuous activities by average assets of companies. The amount is presented of profit or loss in the financial statements of companies that can be extracted.
- (C) Cash from operating activities: Based on companies' average assets which are achieved by dividing the cash from original and continuous activities generating the operating income in the entity by average assets. This value is extracted from companies' cash flow statement. By this definition, payable cash is not considered in respect of income tax and return on investments and dividend to financing (because of applying Iran's accounting standards). The amount can be extracted by the Cash Flow Statements presented in the financial statements of companies.

Discretionary and non-discretionary accruals:

To calculate discretionary and non-discretionary accruals, it must predict accruals for each year using

average sales and accruals for past three-year thus:

$$E_t(Acc_{it}) = \frac{\sum_{k=1}^{3} Acc_{it-k}}{\sum_{k=1}^{3} Sales_{it-k}} Sales_{it}.$$

 $E_t(Acc_{it})$ : predicting ith company's accruals in period t.

Sales: sales in company and

K: 3-year period before the year.

To calculate the numerator, the accruals for three years before the year are calculated, and average three numbers are put in the numerator. To calculate the denominator, the average sales for the last three years are considered. The resulting number of the fraction is multiplied by volume of the sales in the year. The resulting figure shows predicting the current period accruals.

#### (A) Discretionary accruals:

Discretionary accruals are items that are affected by the practices and policies selected by business unit. And whatever the manager is authorized by creating them, the possibility decreases to use them for influencing return.

$$DA_{it} = Acc_{it} - E_t(Acc_{it})$$

To calculate discretionary accruals, we subtract the accruals predicted from total accruals this year that above it mentioned how to calculate.

#### (B) Non-discretionary accruals:

Non-discretionary accruals are items that it predicts the management is not involved in creating them and/or, in other words, they are made of exchange normally.

$$NDA_{it} = E_t(Acc_{it}) - Acc_{it-1}$$

 $Acc_{it-1}$ : Accruals at the beginning of the period

To calculate non-discretionary accruals, we subtract the accruals a year before the current year from the amount projected by the accruals. Due to the limited time period (which is also due to the limitations of data collection), projected mean is to predict 3-preiod accruals. These figures are based on each company's average assets over the period considered to be the standard.

### Ordinary Stock Return:

In this study, the following method has been used to measure the ordinary return on stock.

Ordinary return on stock = (company's market value at the end of the year - the company's market value at the beginning of the year + approved dividend - raising capital through cash and receivables) / market value at beginning of year.

The company's market value at the beginning of the year = the number of stock at the beginning of the period \* stock price at the beginning of the period.

The company's market value at year-end= the number of shares at end of period \* shares price at end of period. Approved dividend = dividends per share (the gross) \* the number of shares at end of period.

Raising capital through cash and receivables = (end- period capital – beginning-period capital) \* the percent of increase in capital through cash and receivables.

Cash dividends per share= this is the proposed and approved cash dividend at the general meeting of shareholders of the companies listed in Tehran Stock Exchange.

Raise capital= the purpose of the company with raising capital is that the company has ventured to raise capital over the years 1377-90. In the calculation of stock return, raising capital through cash and receivables of shareholders are considered.

# Extraordinary stock returns:

To calculate this, first the companies are independently classified into five categories based on the natural logarithm of the market value of stock (firm size) and the ratio of book value to market value of equity. The result of this contrast to 10 groups is 25 (5\*5=25) situations. Then, for each group with observed portfolio, corresponding average return is achieved. This could be due to controlling the effect of systemic risk using variable of firm size. There has been a significant relationship between firm size and systematic risk. Anyway,

extraordinary return is equal to the difference between every company's return and average portfolio returns, in which the company is. For example, if the return of the company in 2008 was 10% and the average yield of Group 1 from size variable and Group 2 from variable of the ratio of market value to book value, in which the stock is, was 20%, the extraordinary return would be equal to 10%.

Firm size = natural logarithm of the company's stock market value at beginning of year.

The ratio of book value to market value of equity = the company's assets at the end of the period / company's market value at end of period.

### The control variables:

Firm size= in the present study, the effect of firm size must be neutralized, which belongs to the control variable. In order to eliminate the effect of firm size, each of the independent variables is divided by the company's average assets each year until the results of the investigation should be reliable.

Systemic risk= In calculating extraordinary stock returns, the companies have been divided into two independent groups, based on the logarithm of the market value of stock (firm size) and the ratio of book value to market value of equity (B/P), and the average of the corresponding returns was calculated by portfolio obtained for each group. This is due to controlling the systemic risk using variable of firm size.

#### Results:

In order to establish a logical link between compiled evidence and the research hypotheses, descriptive statistics and uni-variable regression tests are used at 95% confidence level. Data analysis was performed by SPSS software. Table 1-1 contains descriptive statistics of the study data.

Table 1: Descriptive statistics for survey data

Measures	Ordinary returns	Extraordinary returns	Total accruals	Discretionary accruals	non- discretionary accruals
Arithmetic mean	0.4636	(0.1509)	0.0475	0.00343	0.0063
The lower limit of the confidence interval	0.4079	(0.2077)	0.0378	0.01154	0.0016
Upper limit of the confidence interval	0.5192	(0.0942)	0.0572	0.0047	0.0111
Trimmed average	0.4453	(0.1648)	0.0462	(0.00034)	0.0068
Median	0.4127	(0.2255)	0.0432	(0.0044)	0.0080
S.D	0.3206	0.3217	0.0569	0.0478	0.0278
Minimum	(0.0128)	(0.7431)	(0.0884)	(0.1324)	(0.0760)
Maximum	1.7678	1.4432	0.3172	0.2603	0.1431
Range	1.7806	1.4432	0.3172	0.2603	0.1431

What proposed in the original hypothesis was that the null hypothesis implies lack of significant relationship between accruals and the ordinary stock returns. However, it is predicted that due to the phenomenon of earnings management, firms with high accruals also achieved to greater returns. That is, their quality of earnings is illustrated better, affected by accruals, and so stock are associated with a greater chance. To verify this, the correlation coefficient between the independent and dependent variables was computed and numbers are 0.178 and 0.217. And also its possibility is 0.045and 0.015, which is smaller than 0.05, and model's determination coefficient is 0.032 and 0.074. Also given that we have accepted the normality and independence of residuals via relevant statistics, being direct and significant relationship with 95% significance level has been confirmed. Above the total impact of accruals on stock returns has been studied. We examine the accruals' components i.e. discretionary and non-discretionary accruals and their relationship to ordinary and extraordinary stock returns. Non-discretionary components refer to that management is not involved in their creation and/or, in other words, they are created in the exchange naturally. In contrast, discretionary components are influenced by selected policies and procedures. Whatever the manager is authorized by creating them, the possibility decreases to use them for influencing return. Calculating discretionary and non-discretionary components has different measures, in this study, the average sales for the last 3 years has been used to calculate them.

Table 2: Results of the analysis of sub-theories variables.

sub-theories	Correlation coefficient	Probability	Determination coefficient	Type of the relation
First	0.407	0	0.166	Direct
Second	0.208	0.001	0.078	Direct
Third	(0.267)	0.002	0.071	Inverse
Fourth	(0.147)	0.104	0.022	Inverse

According to the data of Table 2. and Figures from statistical analyzing first, second and third sub-hypotheses confirmed a significant relationship in significance level of 95%, on the first and second sub-hypothesis, there is a direct significant relationship between discretionary components of accruals and extraordinary stock returns. On the third sub-hypothesis, there is a significant inverse relationship, due to the

negative correlation coefficient between non-discretionary accruals and ordinary stock return. On the fourth hypothesis, the relationship between non-discretionary accruals and extraordinary stock returns is not confirmed, due to being greater possibility of correlation coefficient than 0.05. For interpreting the theory, it can be said that these components would be influenced less than discretionary components, due to less authority and therefore the market's reaction towards stock returns is not the same reaction as discretionary accruals, so, the hypothesis is rejected. Not confirming the related hypothesis to non-discretionary accruals is not match with the results of some earlier studies which have documented. Results of hypotheses are the same results of hypotheses in research of Chan, *et al.*, (2006).

Table 3: Summarizing the results of research hypotheses assessment.

hypotheses	Probability	Correlation	Determination	- W	**	Dinia	Test result
	value	coefficient	coefficient	D-W	K-s	RUNS	Type of relation
First main hypothesis	0.045	0.178	0.032	1.862	0.2	0.156	Accepting it
							direct
Second main hypothesis	0.015	0.217	0.074	1.766	0.089	0.324	Accepting it
							direct
First sub- hypothesis	0.000	0.407	0.166	1.891	0.2	0.379	Accepting it
Trist sub- hypothesis	0.000	0.407	0.100	1.091			direct
Second sub- hypothesis	0.001	0.280	0.078	1.785	0.2	0.152	Accepting it
Second sub- hypothesis	0.001	0.280	0.078	1.763			direct
Third sub- hypothesis	0.002	(0.267)	0.071	1.861	0.2	0.327	Accepting it
							inverse
Fourth sub- hypothesis	0.104	(0.174)	0.022	1.743	0.2	0.057	Rejection it
							inverse

#### Discussion and Conclusion:

This study assessed the role of accruals to describe and analyze earnings quality. Accruals due to ability of manipulating may affect earnings quality. Expected that increase in accruals makes increase in earnings quality, and market's reaction. The main hypotheses examined the role of total accruals, and the results show that we can assume that companies with low and high accruals affect stock returns. This could be a sign of the market's reaction to the amount of accruals by companies, and these confirmed hypotheses are consistent with the results of several empirical studies have also documented. Examining sub-hypotheses is noted that the components of accruals, that is, discretionary and non-discretionary accruals the test based on them show one can assume that the companies' return can be substantially affected by these components, and the existence of a direct relationship between the stock return and discretionary accruals has been confirmed, while an inverse relationship between non-discretionary accruals and stock returns and its relation with extraordinary returns is rejected. This confirms the results of the first and second hypotheses, accords to the prediction. Finally, it put forward the following recommendations based on the results:

- 1. Examining the role and position of audit and supervisory mechanisms to provide the quality information and also contracts theory and agency theory, when publishing the financial reports.
- 2. Necessary to explain and illustrate for greater disclosure of information through the notes, or other means to ensure users of the financial statements, for the possibility of acquiring reliable information.
- **3.** More emphasis in the Stock Exchange and Auditing Organization as a formulator reference of accounting standards on phenomena of accounting information quality and information disclosure. It is natural that setting the part of financial data which is more capable for management and manipulation and emphasis on standards that are more prone to this issue can help ultimate objective of capital market which is the fair share through appropriate assessment.

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