

Earning Quality and Stock Return of Listed Companies in Tehran Stock Exchange (TSE)

¹Mohammad Hadi Zohdi, ²Hashem Valipour, ¹Mohadese Hasani, ¹Mohammad Reza Dalvand and ³Maryam Zohdi

¹Zahedshahr Branch, Islamic Azad University, Zahedshahr, Iran

²Firoozabad Branch, Islamic Azad University, Firoozabad, Iran

³Beiza Branch, Islamic Azad University, Beiza, Iran

Abstract: Earning quality is referred to the closeness of operating earnings to cash flow of operation. The more the distance of earning with cash flow, the less the earning quality and the less the ability of earning to explain stock return changes. Therefore, the present study aims to investigate the relation between earning quality and gained return by stockholders. To do the research, 157 companies of the companies listed in TSE were selected and the related data were studied during 2006 to 2010 by statistical tests of Analysis of Variance (ANOVA) and correlation. The results indicated that among different classified companies, there is not different return average based on earning quality. The other results show that there was no significant relation between earning quality and stock return of the companies.

Keywords: Earning quality, stock return, Tehran stock exchange

INTRODUCTION

Analysts of stock, managers of companies, investors and the people who participate in capital market focus mostly on the figure of net earnings as the last information item of loss and gain. This figure is calculated and identified based on accrual figures. According to the accrual approach in case of fulfilling incomes and occurrence of costs, the earning can be reported. As in accrual basis, identification of incomes and costs was not with receiving and paying cash and in calculation of earning, predictions and estimations are used and this question is raised that to what extent we can rely on this figure during decision making. The answer to this question is of importance due to the fact that taking wrong decision because of inadequate and wrong information cause that resources are shared unfairly.

The power of managers in using fulfillment and coordination principles and using estimation and prediction are the factors that can affect earning quality. On one hand, due to their increasing information of the company, it is expected that they provide information in a way that they can better reflect the condition of company as the best and on the other hand, it is possible that due to some reasons such as remaining in the company, receiving rewards and other factors, the manager represents the condition of the company accidentally or on purpose very well. Therefore, the earning quality of the companies is affected by reporting principles and managers' discretion. In other words, real earning of the company is different from the earning reported in financial statements. If users of financial

information focus merely on accounting earning, it is possible that by manipulation of earning by management, they involve in misunderstanding. To calculate the earning quality, different models are presented. In this research, it is attempted that at first the studied companies are classified in terms of earning quality, classification and then they are studied that whether there is significant difference between return average of the companies considering their classification in terms of earning quality or not? It is predicted that there is positive and significant association between accounting earning quality and stock return of companies, if there is such association, we can recommend the information users to focus on accounting earning quality beside considering the information of financial statements including accounting earning and it is recommended to the providers of information that beside financial statements, disclose the information of accounting earning quality.

LITERATURE REVIEW

Earning is one of the most important criteria of performance assessment and determining the value of economical institutions. Due to the presence of intrinsic limitations in accounting, it is possible that the reported earning in financial statements is not compatible with real earning of institution. To solve this problem, the concept of earning quality is used. There are various views about the definition of earning quality. Revsine *et al.* (2010) considered the high quality earning, the more stable one. Penman and Zhang (2002) defined earning quality the

ability of earning in showing future earnings. Schipper and Vincent (2003) showed that the earning quality is related to the required earning reported by Hicks (1939), they believed that earning quality is the extent of honesty that represents the income the same as in the required earning report of Hicks (1939). Houge and Loughran (2000) believed that earning quality is the degree of reported net earnings difference of real earnings. The definition of Mikhail *et al.* (2003) of earning quality is the degree of relevance of previous earnings of a company with future cash flow. White *et al.* (2003) know the earning quality the amount of caution taken in the reported earnings. Lougee and Marquardt (2004) considered the high quality earning the one with more information content. Kirschenheiter and Melumad (2002) defined the high quality earning the one that is near the value of company in long-term period and it is consisted of more information. Scholer (2006) defined earning quality as the relation between accruals items and cash flows. One of the probable reasons of the various definitions of earning quality is different views of researchers to various aspects of this concept. Due to this fact, the earning quality is a complex issue and until now, no researcher could present a unique definition of this concept or its total index. Earning quality is referred to the closeness of current earning to cash flow of operation. The more the distance of earning with cash flow, the less the earning quality and the less the ability of earning to explain stock return changes. Because accrual items have negative relation with future return of stock (Chan *et al.*, 2006), thus the weak relation of earning with future return is attributed to low quality of earning (Lev, 1989). The closer the value of earning to the cash flow, the less its accrual items and the higher earning quality would be observed. Abdelghany (2005) by referring to the different methods of measuring earning quality and by 3 methods showed that different methods of measuring earning quality lead into different assessments and an industry or a company cannot be considered based on method as high or low earning quality. Due to this, he recommended that beneficiaries before taking any investment decisions choose more than one method to assess earning quality.

Dechow and Dichev (2002) studied the role of accrual figures for better measurement of assessing the performance of companies in a time series. As accrual figures require assumptions and prediction of future cash flows, the quality of accrual items and earning are reduced by increase in prediction error of accrual figures.

Earning quality and stock return: Most researchers found that earning quality is directly associated with stock return. Lev and Thiagarajan (1993) believed that the companies with high earning quality have high future income growth. Sloan (1996) and Houge and Loughran (2000) found that stock with high accrual items (low earning quality) are with low return, it means that there is

reverse relation between accrual items and stock return or there is direct association between earning quality and stock return. Chan *et al.* (2006) showed that accrual items are negatively associated with stock return. Increasing earning along with high accrual items refer to low earning quality and its low relevance with future return. Penman and Zhang (2002) showed that there is direct association between earning quality and stock return.

Chan *et al.* (2006) studied the relation of accrual items (the difference between earning and cash flows) with future return of stock and found that companies with high accrual figures have reduced stock return in the period after reporting financial information. One interpretation of these results is that the companies with low earning quality (the companies with high accrual items) in the after reporting earning period, have less return because the investors found about the how earning quality of the companies and reduce the stock price consistent with it.

RESEARCH METHODOLOGY

Any research based on main problem should have special hypotheses, plan and method to find about the organized recognition of the studied facts.

In this study, the aim is classifying companies based on the earning quality and investigating this issue that the companies with high earning quality (low) and high return average (low) and there is association between earning quality and stock return as in the present study, the relation between variables is considered, the research method is correlation and to test the hypotheses, ANOVA analysis and correlation test were used.

Data collection method: In this study, to collect data, library and field methods were used. In library method, theoretical principles of research were extracted of Persian and Latin specialized books and journals and various articles and in field method of data research, MP3 files published by TSE and Tadpirpardaz software were employed.

Data analysis method: The required data were collected and classified by Tadpirpardaz software and TSE. Then, by summarizing and performing the required calculations in Excel software, they were prepared for the statistical analyses. The final analyses were performed with SPSS package, version 11.5.

Research purpose: The current research is aimed to classify the studied companies in terms of earning quality and then it is investigated that whether there is significant difference between return average of the companies considering their classification in terms of earning quality or not? Finally if there is difference, the relation type

between earning quality of the company with their return is defined.

Research hypotheses:

First hypothesis: The companies listed in TSE with different earning quality gain different returns.

Second hypothesis: There is positive and significant difference between earning quality and return in companies listed in TSE.

Sample population: The companies listed in TSE were selected as sample population of this research to extract the required information of the research hypotheses of their financial statements.

High quality of the information of these companies is the major reasons of restricting sample population to the companies listed in stock exchange. Financial period of the research is 5-year, from 2006 to 2010.

Sampling method: It was attempted that considering the existing limitations in data collection of financial statements of the under study companies, the research samples were selected.

The existing limitations were as follows:

- Fiscal year of the company leads into the end of Esfand of each year.
- The company didn't have any fiscal year change during 2006-2010.
- The company is listed by the end of fiscal year 2006 in TSE.
- Stock transactions of the company are continuously done in TSE.

The companies with loss were excluded from the study.

Operational definition of vocabularies and terms:

Earning quality: In this research, earning quality is defined as the closeness of operating cash flow to operating profit and to calculate earning quality we use Penman (2001) approach. This approach is focused on the ration of cash flow of operation to operating profit. Based on this earning quality measurement criterion, the greater, the higher the earning quality and vice versa.

Earning quality = cash flows of operation activity/ operating profit

Stock return: To measure investment return, earning of investment is divided by initial price of investment. Earning of investment is consisted of two parts:

- Receiving price for stock earning or interest of securities.
- Loss or gain of capital of price change of stock in investment period.

Stock return is given by the following equation:

$$R_{it} = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$$

where,

R_{it}- = Stock return price i in period t

p_t- = Stock price at the end of period t

P_{t-1}- = Stock price at the beginning of period t or at the end of period t-1

D_t- Cash earning of each share i that is dedicated at period t to the stockholders.

Profit of operating activities: It is consisted of the profit of main and continuous activities of the company. This price is extracted directly from the loss and gain of the companies.

Cash flow of operating activities: It is cash flow of productive main and continuous activities of operating income of commercial unit. This value is extracted of cash flows statement of companies (directly or indirectly).

Data analysis:

Correlation between variables: To determine the relation between variables including earning quality and return amount, as a measuring index is of distance type, we used Pearson correlation coefficient. Table 1 shows

Table 1: Correlation coefficient matrix between earning quality and companies return during 5-year period

Variable	Correlation coefficient	Significance level
Earning quality of 5-year period×return of 5-year period	-0.04	0.620
Earning quality of 2006×return of 2006	0.05	0.544
Earning quality of 2007×return of 2007	-0.019	0.818
Earning quality of 2008×return of 2008	-0.038	0.664
Earning quality of 2009×return of 2009	-0.054	0.536
Earning quality of 2010×return of 2010	-0.033	0.696

Table 2: Quantile points of earning quality of the studied companies

Number of companies		157
Average of earning quality of 5-year		12.808
Mean of earning quality of 5-year		0.593
Quantile points (%)	20	0.143
	40	0.478
	60	0.727
	80	1.054

Table 3: Descriptive statistics of quantiles of earning quality of 5 years of the studied companies

Level		Number	Average	SD	Min	Max
Very little	Less than 0.143	32	0.228	0.493	-0.262	1.672
Little	0.143 to 0.478	31	0.328	0.578	-0.682	2.843
Moderate	0.478 to 0.727	31	0.464	0.683	-0.131	3.002
Much	0.727 to 1.054	31	0.744	1.550	-0.023	8.654
Much more	More than 1.054	32	0.392	0.451	-0.278	1.466
Sum		157	0.432	0.861	-0.362	8.654

that there is no significant correlation between two variables at 0.05 level, in other words, there is no relation between earning quality average of the studied companies during 5-year period of 2006 to 2010 or their return average, it means that increasing or decreasing earning quality of these companies didn't change their return. This issue is correct about the relation of these two variables in each of the years and correlation coefficient between the mentioned variables was not significant in none of research years.

RESULTS OF ANALYSIS OF VARIANCE

Earning quality average of 5-year of companies were divided into equal levels, it means that quantile value (5 levels) was calculated by SPSS software in points 20, 40, 60, 80% and their corresponding values were considered as a basis to classify the earning quality (Table 2). Table3 shows descriptive statistics of each of the required levels To determine the difference between classified earning quality of the studied companies during the fiscal year 2006 to 2010 in terms of return value, we calculated one-way variance analysis or F test. The results showed that there is no significant difference at level 0.05 between earning quality levels of the studied companies in terms of return (F = 0.16 and p>0.05) (Table 4 and Fig. 1). To

confirm the issue, the companies are compared based on their return average and the results showed that there is no significant difference among the studied companies in terms of return (F = 0.77, p>0.05) (Table 5).

To be ensured of the lack of significant difference between different earnings quality in terms of return of studied companies, analysis was done by dividing earning quality of 5 years of companies into 3 levels (Table 7). Table 8 shows descriptive statistics of each of the required levels. The results showed the lack of significant difference between return of studied companies in terms of three-level earning quality and the results are shown in Table 9 (F = 2.04, p>0.05).

DISCUSSION

First hypothesis: The companies listed in TSE by different earning qualities gain different returns. Considering the research findings and statistical tests, this hypothesis is rejected; it means that the companies listed in TSE by different earning quality didn't gain different returns.

Indeed, in classification of companies based on earning quality (very little, little, moderate, much, much more), increasing trend of return average is considered from very little level to much more level. But this change in return average was not statistically significant in classified levels.

Second hypothesis: There is positive and significant relation between earning quality and return in the companies listed in TSE. Considering the research findings and statistical tests, this hypothesis is rejected; it means that there is no significant relation between earning quality and return average of the companies listed in TSE. Despite the predictions based on previous researches that was expected that there is positive and significant relation between earning quality and stock return, the results indicate the lack of positive and significant relation between earning quality and companies' return. The results also, indicate inverse and weak relation in most years except 2006. Indeed, this relation is not significant statistically.

Findings of the researches carried out by Lev (1989), Sloan (1996), Houge and Loughran (2000), Chan *et al.* (2006) and Penman and Zhang (2002), indicate that there is positive and significant relation between earning

Table 4: The comparison of earning quality levels of the studied companies in terms of 5-year return average

Variablei	Average of earning quality					F-Statistics	Significance level
	Very little (less than 0.143)	Little (between 0.413 to 0.478)	Moderate (between 0.478 to 1.727)	Much more Little (between 0.727to 0.754)	Much more (more than 1.054)		
Average of 5-year returni	0.23 ^a	0.33 ^a	0.46 ^a	0.74 ^a	0.39 ^a	0.16	1.67

a: It indicates the lack of significant difference between levels or groups

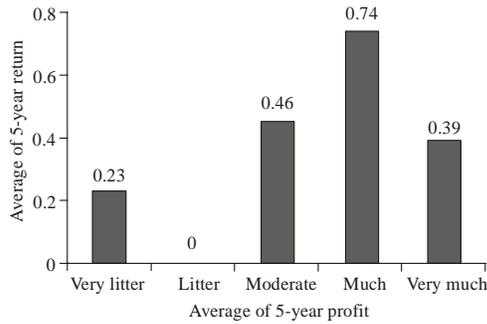


Fig. 1: Frequency distribution of return average of the companies based on earning quality classification

quality and stock return of the companies. The result of the present study is not consistent with the over mentioned researches. It seems that this is due to the following issues:

- Iran capital market is weak in terms of information efficiency. Improving supervising mechanisms, reforming regulations, more stability in policy makings and creating suitable mechanism to give information to the investors can help them that instead of taking decisions based on financial and non-financial information of informal resources, improve their decisions by studying accounting variables and consider accounting earning quality.

Table 5: The comparison of the studied companies in terms of 5-year return average

Variable	Average of Gerdabaf of yazd	...	Iran daru	Isfahan petrochemical	Firooza engineering	Farabi petrochemical	Aloumank	Orumieh cement	F-statistics	Significance level
5-year return	^a 0.44	...	^a 1.67	^a 2.60	^a 2.71	^a 2.84	^a 3.00	^a 8.65	0.77	0.97

significant difference based on Tukey comparative test; ...: the name of companies in the group "a" that their name and 5-year return average are shown in Table (6)

Table 6: The name of the company and their 5-year return average are in the group "a"

Company	5-year return average	Company	5-year return average	Company	5-year return average
Saipa	-0.362	Petro inv	0.102	Sina Chem. Ind.	0.357
Shokopars	-0.278	Iran Tire	0.104	Pars Pamchal-R	0.360
Plascokar	-0.245	Neyshabour S.-R	0.107	Bisoton Sugar-R	0.374
Sasan	-0.236	Khoy Textile-R	0.112	Glucosan	0.393
Pars carpet	-0.220	Khoy Textile-R	0.114	Zar Spring	0.441
Iran cable	-0.197	Osvah Pharm.-R	0.114	Dasht Morghab	0.444
Ghaemshahr loom	-0.195	Goltash	0.117	Mazandaran Cem	0.457
West loom	-0.179	Zahravi Phar.-R	0.122	Iran Carton-R	0.461
Babkan loom	-0.146	Iran Khodro-R	0.123	Iran Bearing-R	0.463
Iran china clay	-0.131	Soliran	0.130	Abadan Petr.	0.471
Alborz	-0.125	Alvand Tile	0.146	Shirin Darou	0.474
Amin pharma.	-0.100	Ghadir Inv	0.155	Iran Mineral P.-R	0.489
Mazandaran loom	-0.098	Tolid Daru	0.164	Pars Khodro-R	0.498
Iran Compressor-R	-0.098	Iran inv	0.164	Behshahr Inv.	0.499
Sanaie bastebandi Iran	-0.086	Iran Tractor F.-R	0.164	Khark Petr.-R	0.562
Iran Poliakril	-0.076	Absal-R	0.171	Jaam Darou	0.585
jamejahannama	-0.069	Varziran	0.180	Iran Chalk-R	0.588
Azarab Ind.	-0.064	Bank Melli Inv.-R	0.182	Hamadan Glass-R	0.605
Parsylon	-0.064	Pak Dairy	0.183	Ghazvin Sugar	0.635
Mashad Carton	-0.061	Pars metal	0.186	Pars sugar	0.674
Iran Poplin	-0.060	Tous Woolen-R	0.188	Iran Aluminium-R	0.695
Iran Radiator-R	-0.060	Shahdiran Inc.	0.199	Iran Tractor-R	0.725
Damavand Min.	-0.059	Damloran Pharm.-R	0.204	Paxan	0.727
Pars Pump	-0.058	Italran-R	0.207	Margarin	0.732
Kaveh Ind.	-0.037	Loabiran-R	0.221	Alborz Carton	0.735
Mehdi Tools-R	-0.033	Bahman Group-R	0.228	Saipa Inv.	0.738
Iran injection	-0.023	Iranmerinos	0.233	Iran Ferroalloy	0.742
Mashad Food	-0.022	Motogen	0.234	Ghoveh Pars	0.754
Chin Chin-R	0.007	Bonyan Diesel-R	0.245	F. & Kh. Cement	0.771
Ahwaz Farseet	0.009	Iran Form-R	0.246	Indamin-R	0.779
Fars Chem. Ind.-R	0.012	Iran Auto-Parts-R	0.246	Rangin-R	0.793
Tabriz Compres.	0.013	Pars Aluminum-R	0.259	Iran Const. Inv	0.799
Chimidarou-R	0.019	Iranit	0.270	Ghazvin glass	0.803
Behshahr Ind	0.019	Permit-R	0.271	Sina Darou Lab.	0.806
Melli Agro.-R	0.020	Pars carton	0.830	Keivan	0.275
Pichack	0.035	Iran Combine-R	0.280	Iran Pouya-R	0.842
Naghsh Jahan S.	0.036	Iran Polyacryl-R	0.284	Doode Sanati-R	0.861

Table 6: (Continue)

Shahdaab-R	0.038	Shahroud Sugar-R	0.289	Iran Tractor-R	0.922
Tehranmetr c	0.047	Ghohestan Sugar	0.290	Pars Veg. Oil-R	0.986
Iran Argham-R	0.047	Iran Transfo	0.296	Iran Carb.-R	1.009
Behran Oil-R	0.049	Isfahan Const.-R	0.306	Bakhtar Cable-R	1.034
Azadi Texture-R	0.059	Isfahan Sugar-R	0.306	Azərbayjan Inv.	1.045
Melat Inv.-R	0.063		0.314	Vitana-R	1.127
Pars ceram	0.072	Pars Metal Pkg.-R	0.319	Saipa Azin-R	1.136
Tolypers-R	0.075	Hegmatan Sugar	0.335	Azarit	1.331
Aliaf	0.078	Abouraihan P.-R	0.335	Hakim Pharm.-R	1.397
Noush Maz.-R	0.087	Marvdasht Sugar	0.342	Exir Pharm.-R	1.449
Pars Packing-R	0.088	Pars Int. Mfg.	0.347	Arak petro	1.466
Sahand Rubber	0.094	Charkheshgar-R	0.355	Alborz Por.	1.606
Pars petro	0.100	Glass and gas-R	0.356	Nilou tile	1.613

Table 7: Quantile points of earning quality of the studied companies

The number of companies	157
Average of earning quality of 5-year	12.808
Mean of earning quality of 5-year	0.593
Quantile (%)points	33.33 0.435
	66.67 0.765

Table 8: Descriptive statistics of quantiles of 5-year earning quality of the studied companies

Level	Number	Average	SD	Min	Max
Little	Less than 52	0.252	0.457	-0.362	1.672
	0.435				
Moderate	0.435 to 53	0.581	1.295	-0.131	8.654
	0.765				
Much	More than 52	0.462	0.548	-0.278	2.604
	0.765				
Sum	157	0.432	0.861	-0.362	8.654

- The lake of information of many investors with financial issues and the shortage of financial analysts and experts that predict the performance of companies in accordance with scientific methods cause that most of the investors invest based on confidential information, informal news, gossips and others advice and stock price change and formation of Unnormal return of cumulative stock are based on this behavior of investors and previous information reflected in financial statements on which earning quality of companies is assessed, are considered less in reaction of investors to new information such as cash profit change.
- The influence of government policy making and regulations change and the lack of adequate economical stability at macro level cause that investors are more inclined to accept the industries that gained some opportunities to develop future earning under the influence of new regulations and stock price of such companies are increased rapidly, as this price increase is not justified based on accounting information.

CONCLUSION

This study tries to investigate the relation between earning quality and gained return by stockholders. To achieve this aim, 157 companies of the companies listed in Tehran Stock Exchange (TSE) were selected and the

Table 9: The comparison of earning quality levels of the studied companies in terms of 5-year return average

Earning quality average				

Moderate				
(between Much (more Signifi				
Variable Little (less 0.435 and than 0.765) F statistics cance				
than 0.435) 0.765) level				
5-year	0.25 ^a	0.58 ^a	0.46 ^a	2.04 0.133
return average				

a: lack of significant difference between levels and groups

related data were studied during 2006 to 2010 by statistical tests of Analysis of Variance (ANOVA) and correlation. Although, the research results indicate the lack of significant relation between earning quality and gained return by stockholders, we cannot ignore the importance of earning quality because most of the researches in this regard indicated the positive and significant relation between earning quality y and stock return. But with considering the factors affecting on Iran capital market, the results of this research should be taken with caution. Since the increase in capital market efficiency and reduction of the influence of non-economical variables such as political and psychological factors, it can be expected that there will be positive and significant correlation between earning quality and stock return.

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