Investigating Earnings Quality and its Relationship with Future Profitability of Accepted Companies in Tehran Securities Exchange

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Abstract: In this article the relationship between earnings quality with earnings stability index and future profitability has been investigated. Accordingly, three hypotheses were formulated. The first hypothesis investigated the relationship between profit stability and future profitability, the second hypothesis investigated the relationship between accruals and future profitability, and the third one investigated the relationship between operational cash flow and future profitability. To do this, 84 companies among the accepted companies in Tehran securities exchange were investigated during 2007 to 2014. To evaluate the earnings quality pooled data method was used, and then the hypotheses testing was implemented using multi-variable regression model. The results of this study show that there is a significant positive relationship between earnings quality and future profitability, and earnings stability is an appropriate tool to measure earnings quality and durable and stable earnings can be used to predict the future earnings.

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1. Introduction

Technology progressing and creation of competitive environment between companies, capital market have developed and have created great developments in communities economies. In such environments changes occur rapidly and investors enter into this market aiming more return and are looking for correct and logical decisions. Earnings is one of the important factors that most investors and sponsors put as their decision making basis and fundraising from company requires having earnings with high quality. Revsine et al (1999) call more stable profits as with quality. Penman and Zhang (2002) define the quality of earnings as showing the future revenues. Earnings with higher stability and lower accruals are called earnings with quality.

With increasing the earnings stability and the expected future earnings the investment of the entity is increased. Since managers' decisions are based on the future profitability of the entity, it is probable that investment decisions of managers include information about the earnings quality. Management can affect earnings quality using different methods of earnings manipulating and one of these methods includes accruals. In fact, in discretionary accounting system managers encounter different options about the time of recognizing incomes and costs including more rapid recognition of income through credits (Theo et al, 1998).

2. Theoretical foundations

1). Earnings quality

Earnings are as one of the most important factors to evaluate the performance and determine the value of enterprises in financial statements. Regarding the high limitations in accounting the earnings reporting in the financial statements may not be in accordance with the real earnings of the entity. To solve this problem the concept of earnings quality has been applied. Bernstein (1993) believes that quality discussion is resulted from the need to a basis to compare the different entities earnings and also the need to recognize the existed differences in the earnings of different entities for the assessment purposes. With respect to different attitudes of individuals, no perfect and complete definition has been presented for earnings quality.

Kischenheiter and Melumad (2004) believe that one of the reasons of numerous definitions of earnings quality is probably that different users use information in different decisions. Chen et al (2004) have defined earnings quality based on the reported earnings ability to reflect the operational capabilities of the entity. Mikhail et al (2003) have defined earnings quality according to the past earnings ability in predicting the future cash flows. Richardson et al (2001) have defined earnings quality based on the stability of the current earnings in future periods.

2). Earnings stability

One of the qualitative features of earnings is the

earnings stability which means the reproducibility and permanence of current earnings, and the more stable earnings the higher company's capability and value which have higher earnings. Earnings stability makes future earnings prediction easier and more reliable for the entity. According to Green (1999), companies that have high prediction capability have higher earnings quality. High earnings quality can be attributed to high ratio of return to the total capital and the closeness of earnings to cash and its reproducibility, while instability can be related to low earnings quality.

Lipe (1990) defines stability as the autocorrelation in earnings as: without considering the magnitude and signs of earnings innovation, stability deals with this issue that to what extent the innovations of new era are going to be the permanent part of the earnings time series? Investors can use the earnings series with stability in their assessments. According to them, stable earnings are very important and are considered as durable. In other words, these earnings are not transient and temporary, but durable. The more stable the earnings, the more capability will the company have to keep the current earnings and the assumption is that earnings quality is higher.

***3).* Accruals**

Accruals are as important factor in recognizing the earnings quality which are defined as the difference between the accounting earnings and cash flows obtained from the operations and are applied in shares evaluation. Accruals are divided into discretionary and non-discretionary, and discretionary accruals elements are the accruals that management can have some controls over them and non-discretionary accruals are accruals that management cannot manipulate them.

Richardson et al (2005) related the reliability of accruals to the earnings stability. They concluded that the elements of earnings that have low reliability including non-current operational assets lead to lower earnings stability.

3. Review of the literature

Khajavi and Nazemi (2006) investigated the relationship between the earnings quality and stock return emphasizing the accruals role. The results of their research indicate that the companies' stock return average is not affected by the accruals and their elements.

In a research, 'Stability of cash dividend components' Ghorbani (2009) concluded that dividend promises the earnings stability or permanence in later years.

In his research, 'Investigating the relationship of accruals estimation error and accruals quality and earnings quality' Barghaei (2007) concluded that there is a positive relationship between accruals quality and earnings quality.

Ghosh et al (2005) concluded that stable increasing of earnings along with stability in incomes and operational earnings, have the most earnings quality and earnings response coefficient. Lev (1993) investigated the relationship between earnings quality and stock return. He concluded that companies with higher level of earnings quality have higher earnings response coefficient and return.

In his research, Ogneva (2008) investigated the relationship between the accruals quality and stock return and showed that there is a significant negative relationship between accruals quality and stock future return.

Dhaliwal and Zhenli (2008) found that when the earnings quality is increased, the market response to the dividend changing will be less. In other words, earnings quality is an important factor in valuation of the company by investors that affect the information content of dividend.

Chan et al (2006) investigated the relationship between accruals and stock future return. The results of their study show that companies with low earnings quality will have decreased stock return in the next period of earnings reporting.

4. Research hypotheses

There is a significant relationship between earnings stability as the earnings quality index and future profitability.

There is a significant relationship between accruals and future profitability.

There is a significant relationship between operational cash flow and future profitability.

5. Research variables and experimental models

Return of assets has been considered as the dependent variable in this research.

$ROA_{it+1}= EARN_{it} / TASSET_{it}$

EARN: net profit/earning

TASSET: total assets

Earnings stability is considered as independent variable which is calculated through following equation:

$$Earningit+1=\alpha 0+\delta\ Earningit+vit$$

Earningit: earnings before long-term accruals in year t

vit: error value

Accruals are as the second independent variable and are measured as following:

$$TAit = \Delta\ CAit - \Delta\ CLit - \Delta\ CASHit + \Delta\ RECit - \Delta\ PPEit$$

TAit: total accruals in year t

CAit: changing in non-cash current assets

CLit: changing in current debts

CASHit: changing in cash

RECit: changing in receivables

PPEit: properties, machinery, and equipment of company i in year t

The Third independent variable, operating cash flow (CFO) is equal to the total sum of cash flows obtained from company operations.

Control variables:

Earnings growth

$g=\frac{epst-epst-1}{epst-1}$

EPS: each stock earnings at the end of period

Company size

SIZE= LOG 10 (Assetsit)

Which is obtained from the logarithm of total assets.

The research experimental model is the multi-variable regression and is as:

ROA it+1 = α0+ α1 Earningit + α2 TAit + α3 CFOit + α4Git+ α5SIZEit + εit

6. Methodology

The present study is a correlational one and companies' historical data has been extracted from Rahavard Novin software. To test the research hypotheses the multi-variable regression has been used and all tests have been implemented using Eviews software.

***1).* Statistical population and sample**

The intended population of this research includes all of the accepted companies in Tehran securities exchange from the beginning of 2007 to the end of 2014 as 8 years. To select the sample following constraints have been imposed:

The sample does not include company types of sponsor, investment, and insurance.

Sample companies have the fiscal year ending to the last day of the year.

Required data of the intended companies for the research should be available.

Companies should not have changed their fiscal years during the intended periods.

***2).* Descriptive statistics**

At the first stage of data analysis, the descriptive statistics related to each and every variable is calculated and provided in table 1.

Table (1): descriptive statistics

Variables	Symbol	Mean	Mode	Max	Min	SD
Return of assets	*ROA* it	0.3516	0.2532	0.6513	0.3021	0.1863
Earnings stability	*Earning*	0.2845	0.2122	0.3454	0.1334	0.1315
Total accruals changings	*TA*Δ	0.1262	0.1462	0.2268	-0.1164	0.0814
Operational cash flow	*CFO*	0.3866	0.3326	0.6205	0.4699	0.1549
Company size	*SIZE*	4.3595	6.1454	8.3965	4.1486	1.2146
Earnings growth	*GROW*	0.0645	0.0200	0.0801	0.0221	0.2010

Considering the descriptive table it is obvious that earnings stability increases simultaneously with return of assets increasing and the statistics of cash flows is between 0.6205 and 0.4699 which indicates the great effect of cash flow on the earnings of company.

***3).* Selecting appropriate pooled data model**

In the present study, the number of each section observation is 84 and each observation includes a time period of 8 years. Dependent and independent variables relationship, among 84 different companies, during time period of 2007-2014 are tested. Thus, to obtain better results the pooled data method has been applied and to estimate the regression models 84 companies' data during a period of 8 years has been combined and estimations have been done on this regard (672 year-company). The results of Chow test have been provided in table 2.

Table (2): Chow test results

Tested model	Chow test statistics	*p-value*	Test result
Earnings stability	0.1520	0.0016	Haussmann test *Panel data*
Total accruals changings	0.0801	0.0002	Haussmann test *Panel data*
Operational cash flow	0.1142	0.2700	*Pooled data*

The Chow test results for the first and second models of research have not confirmed the null hypothesis of this test stating the similarity of the intercept in all periods. Thus, the panel data model (fixed or random effects) should be used. However, for the third hypotheses the null hypothesis stating the similarity of intercept has been confirmed; accordingly, the pooled data method is an appropriate option.

Table (3): Haussmann test results

Haussmann statistics	*p-value*	Test results
0.0421	0.0020	Fixed effects
1.5353	0.8090	Random effects

The Haussmann test results for the first hypothesis

of the research shows that the first hypothesis is not confirmed. Thus, the fixed effect method is more appropriate to estimate this model.

Second hypothesis; however, shows that null hypothesis of this test has been confirmed. Thus, random effects method is selected to estimate this model.

7. Hypotheses testing results

First hypothesis investigated the earnings stability as one of the earnings quality indices and future profitability.

In this hypothesis the F statistics is significant with certainty level of 99%, because p-value obtained from the model testing is less than 1%. Thus, research model is significant in general, and independent variables are able to explain the dependent variable.

In testing the second hypothesis the F statistics with certainty level of 95% is not significant, because p-value obtained from the model testing is more than 5%. Thus, the second hypothesis is not confirmed and is rejected totally.

Testing the third hypothesis shows that the F statistics with certainty level of 95% is significant, because the p-value obtained from this model testing is less than 5% and this indicates that the dependent variable has been explained by independent variables.

Table (4): hypotheses testing results

Description	First hypothesis			Second hypothesis			Third hypothesis		
	coefficient	*t-static*	*p-value*	coefficient	*t-static*	*p-value*	coefficient	*t-static*	*p-value*
Earning	-0.0713	-6.0445	0.0000	0.2508	2.0236	0.0266	1.0546	0.0325	0.0986
TAΔ	0.1195	4.2246	0.2182	0.0339	1.2145	0.1133	0.2645	0.6468	0.0917
CFO	2.2831	9.4768	0.0027	0.0145	7.0261	0.0455	0.0065	3.0265	0.0148
SIZE	0.4233	8.6532	0.0051	1.0548	4.1526	0.0366	0.691	1.1489	0.0508
GROW	0.1129	1.8923	0.0837	0.8756	1.0237	0.0002	0.5045	0.357	0.1023
R-squared	0.4822			0.5556			0.3028		
Adjusted R-squared	0.4581			0.3942			0.2982		
F-static	6.0398			1.6654			0.9656		
F (p-value)	0.0000			0.0042			0.0153		
D-W	1.9279			2.0121			2.2844		

The obtained results of hypotheses testing are presented in table 4 in which the adjusted determination coefficient (adjusted R2) obtained from the first hypothesis testing is 0.4581. This shows that about 45% of the future profitability of sample companies are explained by independent and control variables existing in the model. To investigate the lack of autocorrelation of the errors resulted from model the Durbin-Watson test was used. Its desirable value for lack of autocorrelation is 2. If this statistics value is between 1.5 and 2.5, the autocorrelation in model error values is rejected. Regarding this fact that Durbin-Watson statistics value obtained from the research model is 1.9279, the autocorrelation in model error values is rejected.

Regarding the presented results in table 4, the significance values (p-value) for the first hypothesis variable is 0.0000 and less than 1%. Thus, earnings stability variable has had a significant effect on the return of assets. Independent variable coefficient is negative. Accordingly, the type of relationship between earnings stability and the return of assets is an inverse relationship. Thus, the first hypothesis research is confirmed with certainty level of 99%.

Adjusted determination coefficient (adjusted R2) obtained from testing the second hypothesis is 0.3942. This shows that about 30% of the changes of future profitability of sample companies have been explained by independent and control variables in the model. Regarding this fact that the Durbin-Watson value obtained from the research model is 2.0121, the autocorrelation in model error values is rejected.

Regarding the presented results in table 4, the significance level value (p-value) for the second hypothesis variable is 0.1133 which is more than 5%. Thus, the accruals variable has not have a significant relationship with return of assets. Accordingly, the second hypothesis of the research is rejected with

certainty level of 95%.

Adjusted determination coefficient (adjusted R2) obtained from the third hypothesis testing is 0.2982. This shows that about 29% of the future profitability of sample companies has been explained by independent and control variables existing in model. Regarding this fact that the Durbin-Watson statistic value obtained from the model is 2.2844, autocorrelation in model error values is rejected.

According to results in table 4, the significance level (p-value) for the third hypothesis variable is 0.0148 which is less than 5%. Thus, operational cash flow variable has a significant effect on return of the assets in the model. The independent variable coefficient is positive. As a result, the relationship between the operational cash flow and return of assets is a direct relationship. Therefore, the third hypothesis of the research is confirmed with certainty level of 95%.

8. Conclusions

Most of investors and sponsors choose the net earnings as the first criterion for decision making and they are looking for earnings with quality. In this research, the relationship between earnings quality and future profitability was investigated in which the independent variables included earnings stability, accruals, and operational cash flow, and return of assets was considered as dependent variable. The research findings indicate that accruals do not have a significant relationship with profitability, but companies that have appropriate operational cash flow, durable, and stable earnings have appropriate earnings and can use the current and past years' earnings to predict the future earnings. Earnings stability is an appropriate tool to measure the earnings quality. Investors, analysts, and other beneficiaries are recommended to pay a greater deal of attention to companies with more stable and durable earnings for their decision making.

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