



The Relationship Between Accruals and Investors' Perceptions of Earnings Forecast Error

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Abstract

This study aims to investigate the relationship between accruals and investors' perceptual management. The study's statistical population includes all firms listed on the Tehran Stock Exchange from 2011 to 2017. After reviewing the firms and systematically deleting them, 95 firms were selected for the study. The Findings show a positive and significant relationship between accruals and investors' perceptions (earnings forecasting error). This study attempts to state that if managers face limitations in the management of accruals, they report aggressive forecast earnings as a complementary approach to investor perception management and accounting earnings containing information content. Business management can manage investors' beliefs by managing accruals.

Keywords: Accruals Management, Investors' Perceptions, Earnings Forecast Error

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1. Introduction

Accounting is an information system responsible for collecting, classifying, summarizing, and reporting an organization's financial and economic events as the most important subset of management information systems. Although most users of this information are shareholders and managers of an enterprise, management provides various information to users outside the firm based on the duties and responsibilities it has towards different groups of users of financial information, as well as legal requirements. Previous research has shown that managers provide voluntary disclosure reports, such as earnings forecasts, to meet investors and financial analysts' demand for information. Meeting information demand increases liquidity or reduces capital costs (Ciftci & Salama, 2017). Therefore, in this regard, managers can complete the earnings management process by managing accruals and the management of investors' perceptions through earnings forecasting, which is, on average higher than accounting earnings, and if managers face limitations in accrual management of accruals. They report aggressive anticipated earnings as an alternative to earnings management.

The purpose of this study is to investigate the relationship between accruals using earnings management methods and investor perception management through earnings forecasting error. In other words, this study tries to answer the question that if managers face limitations in earnings management, do they report aggressive forecast earnings as an alternative and complementary method in investor perception?

Despite the many studies conducted by management in our country regarding earnings forecasting, most of the research has examined the factors affecting earnings forecasting error, predictive earnings information content, and comparing the accuracy of forecast earnings with the accuracy of different earnings forecasting models. Experimental research has slightly examined the opportunistic behavior of management in providing earnings forecasting.

2. Literature Review

Previous research has suggested that managers may publish voluntary information, such as earnings forecasts, to reduce information asymmetries between investors and managers. According to this discussion, previous research shows that firms that publish earnings forecasts have more information asymmetry than firms that do not publish forecasts (Ciftci & Salama, 2017). In addition, Coller & Yohn (1997) found that information asymmetry decreased after the prediction was published. Similarly, Lennox & Park (2006) suggest that managers' published predictions reduce information asymmetry impact and reduce estimated risk (Barry & Brown, 1985). Previous research has also shown that investors seek to disclose future information, such as earnings forecasting, and that analysts cover firms with more future disclosures (Ajinkya et al., 2005).

Healy et al. (1999) showed that widespread management disclosure leads to increased institutional ownership and analyst coverage. One of the motivations for voluntary disclosure is to develop a credible relationship with investors.

Elshafie et al. (2010) examined managers' methods in earnings management and investor perception management. They concluded that managers use commitment management or real earnings management to achieve target earnings. Managers complement these methods by managing investors' perceptions through earnings forecasting, which is, on average higher than accounting earnings. Their research showed that managers report less aggressive earnings forecast by management when managers can achieve targeted earnings. They measured the aggressiveness of earnings forecasting through the difference between earnings forecasted by management and reported earnings and concluded that the aggressiveness of earnings forecasting by management was

negatively related to their ability to manipulate earnings through accruals and Real management earnings.

Das et al. (2011) showed that managers positively take advantage of earnings management and expectations management. If earnings management becomes difficult, managers try to replace earnings management with expectations management. Also, according to their research, comparing the earnings of expectation management with the benefits of earnings management showed that expectation management is much more expensive than earnings management.

Mehrani et al. (2017) examined the effect of three indicators of earnings quality, including the quality of accruals, absolute value of unusual accruals, and fluctuations in earnings on the strength of financial distress forecasting models. They showed that increasing the two indicators of earnings quality (the quality of accruals and fluctuations in earnings) reduces the likelihood of financial distress.

Nikolaev (2018) analyzed accrual items into the components of an accounting error, economic performance, and accrual performance and described the accounting quality structurally as facilitating performance measurement by accruals. In his research, econometric strategies have been used to identify accruals and earnings' quality under the flexibility set of assumptions. Research analysis states that the variance of performance components is greater than the accounting error, and the performance component explains a large gap in the variance of accruals.

Moghimi (2019) examined the relationship between earnings management and earnings forecasting accuracy by management in firms listed on the Tehran Stock Exchange. The results show that after controlling the firm's return on equity and size, there is no significant relationship between earnings forecasting accuracy and earnings smoothing in each of the two smoothing and non-smoothing procedures.

Huang (2020) examined the firm's predictive errors in management and investment efficiency. The results showed that the predictive errors of the signed management are associated with an abnormal investment. More optimistic forecasts are associated with over-investment, while more pessimistic forecasts are associated with lower investment.

3. Research Methodology

The present study is quantitative and is done with an inductive approach. Also, since the present study's data is real and historical information, it can be classified as post-event (quasi-experimental). Library methods and documentary studies were used to gather theoretical information about the research literature. To obtain the required information, financial statements of firms listed on the Tehran Stock Exchange will be used to process the research hypothesis. Also, the research data were collected from www.codal.ir site and collected using Excel software. The hypothesis test method in the present study is using Eviews9.5 statistical software. To test the research hypothesis (there is a significant relationship between accruals and investors' perceptions (earnings forecasting error), the conventional least squares regression model (OLS) is used.

$$EFE_{it} = \beta_0 + \beta_1 DACC_{it} + \beta_2 MTB_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \varepsilon_{it}$$

In this model, β_1 is used to prove the research hypothesis.

β : Model coefficients.

ε : Model error.

i: Firm.

t: Current year.

3.1. Dependent Variable: Earnings Forecast Error (EFE_{it})

Earnings forecasting accuracy was defined by management based on the study of

Garcia et al. (2011) as a dependent variable. The earnings forecast error is calculated by the absolute value of the difference between the real net earnings and the net earnings forecasted for each share divided by the absolute value of the real net earnings per share.

$$FE_{it} = \left| \frac{AP_{it} - FP_{it}}{AP_{it}} \right|$$

Where we have:

FE_{it} : Predictive error of earnings per share i for period t .

AP_{it} : The real earnings per share i firm for the period t .

FP_{it} : The first forecast of earnings per share by managers to participate in i period t .

In the above formula, the first forecast of net earnings per share is the earnings that are published at the same time as the announcement of last year's earnings, and the earnings are considered as the forecasted earnings in the above formula that is presented to the public before the end of July. Also, since 2018, the predictions based on the Tehran Stock Exchange Organization decisions have not been disclosed.

3.2. Independent Variable: Accruals ($DACC_{it}$)

In this study, in order to measure the accruals, the earnings management method, which is in the research texts of the edited version of the original Jones model and is referred to as the adjusted Jones model, has been used. This model was first used by Dechow et al. (1995). One of the disadvantages of the Jones model is that it ignores the possibility of making earnings management by commenting on revenue recognition. The adjustment made prevents this.

The modified Jones model is calculated as follows:

$$NDA_t = \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} \right) + \alpha_3 \left(\frac{PPE_t}{A_{t-1}} \right) + \varepsilon$$

Where in:

NDA_t : Non-custodial part of accruals in the year t .

A_{t-1} : Total assets in $t-1$ year.

ΔREV_t : Year income t minus year income $t-1$.

PPE_t : Total value of property, machinery, and equipment at the end of the year t .

ΔREC_t : Net accounts receivable for the year t minus net accounts receivable for the year $t-1$.

$\alpha_1, \alpha_2, \alpha_3$: The specific parameters of the firm are obtained using the following model:

$$\frac{TA_t}{A_{t-1}} = a_1 \left(\frac{1}{A_{t-1}} \right) + a_2 \left(\frac{\Delta REV_t}{A_{t-1}} \right) + a_3 \left(\frac{PPE_t}{A_{t-1}} \right)$$

Where in:

TA_t : Total accruals per year t .

If non-voluntary accruals are deducted from accruals, optional accruals will be obtained.

$$DA_t = TA_t - NDA_t$$

DA_t : Optional components of accruals in year t .

It should be noted that the following equation can be used to calculate the sum of accruals:

$$TA_t = EARN_t - CFO_t$$

$EARN_t$: Net earnings per year t .

CFO_t : Operating cash flow in the year t .

3.3. Control Variables:

Firm Market Value (MTB): The firm's market value is the book value of the

shareholders' equity.

Return on Assets (ROA): Net Profit-Loss Ratio to Total Assets.

Firm size (Size): The natural logarithm of the market value of equity.

The study's statistical population includes all firms listed on the Tehran Stock Exchange from 2011 to 2017. In the present study, the statistical population was adjusted based on systemic characteristics (a statistical sample). The following characteristics were considered in the selection of companies:

In order to increase the comparability and uniformity of the conditions of the selected firms, the firm's financial year should be the end of March of each year, and this date has not changed during the period of access to information.

In order to simulate the type of items and classify them in financial statements, the selected firm belongs to the stock exchange industries "Banks, Credit Institutions and Other Monetary Institutions", "Other Financial Intermediaries", "Financial Investments" and "Multidisciplinary firms". Not industrial.

In order to have a reliable market price, do not stop trading for more than three months during the research period, and have a transaction throughout the research period.

After examining the firms in terms of the mentioned features and systematic deletion, 95 firms were selected as the study sample.

4. Findings

After entering the information in Excel and performing statistical tests, the results of descriptive statistics and unit root test are as follows:

The number of observations shows that the research data comprises the balanced panel type of 95 firms (over 7 years). The average corporate earnings forecast error was 0.05. At the same time, the average of this variable is equal to 0.13. This difference between the mean and the mean indicates the significance of the two evaluation criteria in the research community, indicating that the earnings forecast by the management of the firms under study is generally optimistic and has an error of 0.05.

Observations also show that the earnings management of sample statistical research firms, on average, has either considered a policy of increasing earnings or a high level of accruals; Of course, this does not mean earnings management in all sample firms. Average positivity may be optional due to the positive mean of the commitment items.

The average return on assets of firms is 0.13, and the average is 0.12. In fact, corporate profitability averaged 0.13. In addition, the high standard deviation in the variables indicates a high distribution in the data. The highest standard deviation belongs to accrual items, and the lowest belongs to return on assets.

Also, the maneuverability test's significance level is less than 0.05 if the maneuverability indicator is variable. In addition, in order for a variable to remain stable, the relevant test statistic must be greater than 2 in the absolute value, which is as follows in the table below:

In this study, the statistical Variance Inflation Factor "VIF" was used to investigate the correlation between the model variables. When the variance inflation factor is less than 5, there is no correlation between the model variables. The leveling test was performed using Eviews software, and the results are as follows:

Table 1: Descriptive statistics and unit root of variables

Variables	Mean	Median	S-Deviation	Obsv	Unit Root
EFE	0.05	0.13	0.88	665	-21.06145 (0.0000)
DACC	61.66	82	40.45	665	-22.74731 (0.0000)
MTB	0.61	0.47	0.45	665	-9.502716 (0.0000)
SIZE	13.57	13.47	1.17	665	-22.74731 (0.0000)
ROA	0.13	0.12	0.11	665	-10.36715 (0.0000)

Table 2: Variance Inflation Test (VIF) for Model

Model	DACC	MTB	ROA	SIZE
VIF	1.15	1.31	1.31	1.15

In order to investigate the variance inequality test, considering that the pattern of constant effects in the software was confirmed, the similarity of Breusch Pagan-Godfrey variance is used. According to the test results, the model has a significant level of more than 0.05, which does not suffer from the variance mismatch problem.

One of the assumptions considered in regression is the independence of the errors (the difference between the actual values and the values predicted by the regression equation) from each other. Linear regression cannot be used if there is self-correlation in the errors. If this statistic is between 1.5 and 2.5, there is no need to worry. Durbin-Watson statistics in the model (equal to 1.899920) most likely refute the assumption of the existence of self-correlation.

The F test for the equality of width coefficients test from the origin of different sections and the Hausman test to determine the model of fixed and random effects has been estimated.

It should first be noted that there is no need to consider the data panel (differences or specific firm effects). It is possible to combine data from different firms and use it to estimate the model. In single-equity estimates, the F (Chow) test statistic is used to make the final decision. As shown in Table 3, at the 0.95 confidence level, the panel method is accepted.

In the following discussion, the choice of fixed and random effects models is used, for which the Hausman test is used. Table 3 indicates that in the statistical research model, the probability is less than 0.05, so the fixed effects method should be used.

Also, in examining the whole model's significance, considering that the F statistic's probability value is less than 0.05, it is confirmed with 0.95 certainties that the whole model is significant. Also, by examining the model's modified determination coefficient, it is shown that 0.184018 is the percentage that the independent variables and model control explain the dependent variables.

As mentioned, the hypothesis is validated if β_1 is significant at the 0/05 error level (0/95 confidence level). In order to investigate the research hypothesis in the model, it is observed that the statistical t-statistic of the independent variable of the research items is 2.761153 (with a coefficient of 0.0377339). Also, this statistic's significance level is equal to 0.6060, which shows that this variable's statistic is significant at 0/95 confidence level (0/05 error level). In other words, the probability level is less than 0/05. Therefore, according to the obtained results, it can be stated that the accruals and perceptions of investors (earnings forecasting error) have a significant relationship. Therefore, the hypothesis is confirmed. Also, by examining the variable coefficient of accrual items,

which is equal to 0.0373339, it can be stated that accrual items and investors' perception (earnings forecasting error) have a positive and significant relationship.

Table 3: Research Hypothesis Test

$EFE_{it} = \beta_0 + \beta_1 DACC_{it} + \beta_2 MTB_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \epsilon_{it}$				
Dependent variable: Earnings Forecast Error (EFE_{it})				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.475338	0.150631	3.155634	0.0017
$DACC_{it}$	0.037639	0.013632	2.761153	0.0060*
MTB_{it}	-0.00000475	0.0000085	-0.558476	0.5769
ROA_{it}	0.035900	0.010857	3.306783	0.0010*
$SIZE_{it}$	-0.066767	0.199542	-0.334600	0.7381
R-squared	0.357887			
Adjusted R-squared	0.184018			
F-statistic (Prob)	2.058365 (0.000001)			
Durbin-Watson stat	1.899920			
Variance analysis	4.98798			
	(0.0071)			
	Failure to verify that the error variance is the same			
F-Limer test	1.368864			
	(0.0221)			
	The width of the source is not the same in all sections (panel data)			
Hausman test	46.360474			
	(0.0000)			
	The method of fixed effects is appropriate			

5. Conclusion

The study focused on alternative methods that managers use to manipulate or manage accruals (earnings management) and investors' perceptions to achieve the desired results. This study shows that if managers face limitations in earnings management, they will report aggressive forecast earnings as an alternative to investor perception management. We examined the relationship between accrual management in the research model using earnings management tools with earnings forecasting error. The results showed that accrual items have a significant relationship with earnings forecasting error. The variable rate of return on assets had a significant relationship with earnings forecasting error. The results of the present study are researched by Bartov et al. (2002), Bloomfield (2002), Dutta and Gigler (2002), Black et al. (2014), Das et al. (2011), and Elshafie et al. (2010) is similar.

According to this study, managers complete the earnings management process by managing accruals and evaluating investors' perceptions by forecasting earnings above average on accounting earnings. In other words, when managers can achieve targeted earnings, they report less aggressive earnings forecasting. In general, the aggressiveness of management-forecasted earnings is negatively related to their ability to manipulate earnings through accruals (Elshafie et al., 2010). There is also a positive and significant relationship between earnings forecast error and optional accruals (earnings management tools). In fact, the existence of accruals will make the earnings less stable.

Therefore, venture capitalists are advised to pay attention to the above point when analyzing the firm's earnings. Financial analysts are also advised to analyze their profit and loss statement information based on net earnings and loss items rather than the total net earnings and loss because the net earnings and loss components are more than the total net earnings and loss provides useful information.

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