

## Evaluating the Relationship between Earnings Forecast Error with Abnormal Returns and Systematic Risk in Tehran Stock Exchange

Nima Tamjidi<sup>1</sup>, Touraj Bahrami hajiabad<sup>2</sup>, Mohammad Naghizadeh Aydenlu<sup>3</sup> and Kamal Bagherzadeh Hushmandi<sup>4</sup>

### Abstract

The present study undertakes to evaluate factors affecting management of earnings forecast error. Accordingly, two hypotheses are projected to examine the relationship between earnings forecast error with abnormal returns and systematic risk. To control effects of other factors, some control variables are used, including firm size, profitability, leverage, book value to market value, and Altman's financial crisis indicators. In order to test hypotheses, 100 companies listed at Tehran Stock Exchange during 2006-2012 are selected using screening method. Variables are analyzed using static consolidated data and generalized least squares models. Results indicate a linear positive and significant relationship between earnings forecast error and abnormal returns. However, no linear relationship was observed for earnings forecast error and systematic risk.

**Key words:** earnings forecast error, earnings forecast accuracy, abnormal returns.



Available online  
[www.bmdynamics.com](http://www.bmdynamics.com)  
ISSN: 2047-7031

### INTRODUCTION

Dividend is an essential component of returns on investment, and since forecasted earnings plays a significant role in calculating expected returns on investment, accuracy of earnings forecast and identifying factors on its deviation are of greatest importance. Earnings forecast per share may be said to contain the most important factor on stock price. Moreover, earnings forecast reports of a company in different time spans are the most important source of information for investors, creditors, and all those who use them [1][4].

Many different ways have been proposed for forecasting earnings, from among which, forecasting by managers and forecasts based on time series models are the most popular. Considering the fact that the majority of investors don't have access to, or knowledge of, time series models and mostly rely on forecasts on managers, the accuracy of these forecasts gains more prominence [18].

The present study seeks to investigate the relationship between earnings forecast error (as the independent variable) with abnormal returns and systematic risk (dependent variable) in terms of control variables such as firm size, profitability, leverage, book value to market value, and Altman's financial crisis indicators. Significance of the study lies in that it helps provide a better understanding for investors about effects of earnings forecast error on abnormal returns or systematic risk.

A review of literature reveals that investors and shareholders, depending on their risk-taking tendencies, always seek to maximize profitability and, therefore, pay much attention to information on factors affecting profitability and earnings forecast. Hence, accuracy of earnings forecast by managers needs to be improved to make the provided information more reliable for investors. The study first explains theoretical concepts, including earnings forecast and literature review, and then tests the hypotheses to provide answers for research questions. Finally, results and suggestions for further studies are presented.

### THEORETICAL CONCEPTS AND LITERATURE REVIEW

Forecasts are important for economic decision makings. In an economic enterprise, all users of financial statements such as investors, creditors and managers rely on their own forecasts or that of others. Since the majority of them have no access to financial information, they have to consent for information provided by managers. Accordingly, Exchange and Securities Organization has made stock companies release their future forecasts of earnings in the form of earnings forecast per share.

<sup>1</sup> Department of accounting, Bonab Branch, Islamic Azad University, Bonab, Iran  
Email: [nima\\_tamjidi@yahoo.com](mailto:nima_tamjidi@yahoo.com)

<sup>2</sup> Young Researchers and Elite Club, Urmia Branch, Islamic Azad University, Urmia, Iran

<sup>3</sup> Department of accounting, Urmia Branch, Islamic Azad University, Urmia, Iran

<sup>4</sup> Department of accounting, Payam Noor University, Po box 19395-3697, Tehran, Iran  
Email: [kamalbh2000@yahoo.com](mailto:kamalbh2000@yahoo.com)

Significance of forecasted earnings depends upon its deviation from the true value. The lower the level of deviation, the higher is the level of accuracy. Studies show that realizing expectations of earnings per share is very important in the market [25]. When earnings per share go beyond expectations, an optimistic view of the company is created in the market; otherwise, the company is discredited in failing to fulfill the expectations [24].

The literature is abundant with studies on the relationship between earnings forecast and risk. Beaver et al. [11] introduce risk in three categories:

1. Financial risk: is the probability of losses from financial structure of the company which is determined by leverage and firm size.
2. Business risk: risk from conducting business in a particular industry or environment.
3. Systematic risk: Beta represents sensitivity of fluctuations of stock returns in terms of fluctuations of returns on market portfolio, and is obtained from stock market covariance (risk assets) with returns on market portfolio divided by market portfolio variance.

During 1960s, accounting research shifted towards positivistic theories which, in turn, rely on fundamental theories of economic or behavioral sciences. This is the basis of accounting research which deals with evaluating the relationship between price and accounting information. A pioneer work in this field was conducted by Cragg & Malkiel [15], comparing accuracy of forecasts by analysts and accuracy of forecasts from time series model. Their results indicated the accuracy of the former. Ball & Brown [9] were among the first to realize information content of earnings. Beaver considered information content in his study and concluded that announcement of earnings leads to abnormal changes in stock price.

Elton & Gruber [16] compared accuracy of forecasts by analysts and accuracy of forecasts from time series model and, unlike Cragg & Malkiel, realized the latter as more optimal. Richard [26] compared forecasts error of analysts with that of time series model for 92 companies. He obtained the error from the difference between forecasted earnings and actual earnings divided by actual earnings and reported that forecasts error of analysts was 14.8% smaller than that of time series model. Ruland [27] compared forecasts by managers with forecasts of analysts and time series model during 1969-1973 and concluded that the former is more accurate, though their difference is not significant. Also, forecasts by analysts released before forecasts by managers are less accurate. His study revealed that forecasts by analysts, when reported before forecasts by managers, have no advantage over time series model.

Baginsky & Hassel [8] examined the relationship between firm size and accuracy of forecasts by managers and argued that large companies are more likely to have access to low-cost information which equips them with a higher capability to perform forecasts. Therefore, they reported a direct relationship between firm size and accuracy of forecasts by managers.

Hartnett & Romcke [21] assumed an inverse relationship between forecast errors of management and auditor reputation. They argued that large companies, with an incentive to maintain their reputation, support their managers in providing optimal forecasts to reduce forecast errors. They also reported that level of complexity in the industry within which the company operates is highly influential upon risk and reduces the accuracy of management forecasts. Interestingly, the authors found that companies operating in one business tend to have fewer forecast errors, compared to those operating in more than one business.

Vivian [28] studied a big sample of companies during 1996-2006 and reported an inverse and robust relationship between management forecast errors and accuracy. This relationship was weaker in the short run and stronger in the long run. Hutagaol & Siau [22] evaluated factors, such as interval, firm size, audit quality, industry type, and scope of activity, which exert some influences on earnings forecast errors and pricing the first issuance of securities. They used 124 samples from Indonesian stock market during 1997-2005 and concluded that forecast interval is directly related to forecast error, while firm size has a significant and inverse relationship with forecast error. They picked four large audit institutes as representative of audit quality, but found no significant relationship audit quality and forecast errors. However, increase in audit quality led to decrease forecast errors. No significant relationship was observed for scope of activity and forecast errors.

Choi et al. [12] studied the effects of forecast surprise and forecast error on determining management forecast accuracy from 1995 to 2004 and found an inverse relationship between the two. This relationship

is stronger for forecasting bad news, compared to good news. Also, forecast accuracy is inversely related to forecast error, and is stronger when forecast error is negative.

A great deal of studies on earnings forecast is conducted in Iran. Sajjadi [3] evaluated the relationship between unexpected earnings and future abnormal returns of companies listed at Tehran Stock Exchange and revealed a positive and significant relationship between them.

Mashayekh & Shahrokhi [6] evaluated management forecast accuracy and related factors. They used forecasts by 279 companies during 2003-2006, containing 639 observations obtained by mean difference model. Their results demonstrated a significant difference between management forecast error and forecast error based on random walk model. Moreover, the management forecast was found to be more accurate than random walk model. The authors also found that management forecast has optimistic deviation, and that forecast accuracy differs in terms of firm size, corporate profitability (or non-profitability) and type of industry.

Jahankhani & Saffarian [2] evaluated stock market response to issuance of estimated earnings per share in Tehran Stock Exchange and found that the issued estimated earnings per share contain information content and cause changes in price and trading volume in companies listed at Tehran Stock Exchange.

Kordestani & Bagheri [5] used cross-sectional and fusion models to evaluate the relationship between economic and cash value added with earnings forecast error. Results indicated negative relationships between earnings forecast error with ratio of changes in economic value added and operating profit. Results also revealed no relationship between cash value added and operating profit with earnings forecast error. On the other hand, results of data fusion model indicated a positive relationship between earnings forecast error and ratio of changes in economic value added. Also, the relationship between cash value added and earnings forecast error was found to be significant. Nevertheless, no relationship was observed between operating profit and operating cash flow with earnings forecast error.

Malekian et al. [7] showed in their study that earnings forecast error has a negative relationship with forecast period, leverage and corporate life. The authors confirmed the relationship between auditor's reports with forecast accuracy.

## HYPOTHESES

Providing earnings forecast error by managers of a company is an important source of information for users of financial information, since they contain information content and may prove influential on stock market and level of returns. Abnormal returns provide a measure for evaluating information content of forecasted earnings of companies. Moreover, since the market recognizes excess actual earnings as good news, a direct relationship is expected between excess actual earnings and earnings forecast error. It should be noted that because earnings forecast error leads to increase the gap between stock returns and market returns, a positive relationship between earnings forecast error and stock Beta is expected.

The present study puts forward the following hypotheses:

Hypothesis 1: earnings forecast error has a direct relationship with abnormal returns.

Hypothesis 2: earnings forecast error has a direct relationship with systematic risk.

## POPULATION AND SAMPLES

The study is an applied research and, in regard to data collection methods, is considered to be a descriptive and non-experimental one, mainly concerned with evaluating the linear relationship between the variables. Information is obtained from financial statements of companies, stock market and forecasted earnings by managers. Data are collected from databases, Rahavard Novin software, and official websites of Stock Exchange.

Population of the study includes all non-financial companies listed at Tehran Stock Exchange during 2006-2012. Criteria filtering technique is used for selecting samples satisfying the following criteria:

1. Information of companies should be available during the study.
2. Companies should have fixed fiscal year during the years under the study.
3. Companies shouldn't be of financial meditating nature (bank, insurance, investing, leasing).
4. Companies should have been active in the Stock exchange five years before the study.
5. Operating halt of companies shouldn't exceed 6 months in research period.

6. The equity shouldn't be zero during the study (it is needed for increasing data comparability and reliability of testing hypothesis).
7. End of fiscal year of companies should be set to Esfand 29.

Finally, a total number of 100 companies were taken for study in a span of 7 years, including 525 observations on year-company data collection and analysis.

## VARIABLES

- a. Dependent variables: abnormal returns and systematic risk are taken as our dependent variables. Abnormal returns are obtained by deducting stock returns from market returns:

$$AR_{it} = MR_{it} - SR_{it}$$

Here, the total index is used for calculating market returns, and stock returns are calculated as follows:

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

Where  $SR_{it}$  is stock returns of company I in the period t,  $D_t$  is cash dividend during a year,  $p_t$  is stock market price at the end of year,  $p_{t-1}$  stock market price in the beginning of year.

Systematic risk ( $\beta$ ): Beta represents sensitivity of fluctuations of stock returns in terms of fluctuations of returns on market portfolio, and is obtained from stock market covariance (risk assets) with returns on market portfolio divided by market portfolio variance.

- b. Independent variable: earnings forecast error (EFE) is set as the independent variable of the present study and is obtained from the rate of absolute deviation of actual earnings from forecasted earnings to forecasted earnings per share. This is in agreement with the definition of Coën et al. [14].

$$EFE_{it} = \frac{|AE_{it} - FE_{it}|}{FE_{it}}$$

Where EFE is earning forecast error, AE is actual earnings and FE is forecasted earnings.

- c. Control variables

- Firm size: firm size refers to natural logarithm of issued value of stock market at the end of fiscal year. Natural logarithm ensures that probabilistic coefficients of variables in the model are not affected by bigger scales.
- Profitability: profitability is measuring by means of different ratios. Here, profit margin on sales is used as the indicator of profitability. It is obtained from net profit divided by calculable sales.
- Leverage: shows the extent to which assets are financed from liability or equity. It is calculated using the rate of liability to assets.
- Book value to market value: is calculated from book value of equity divide by market value.
- Altman coefficient ( $Z\_Score$ ): is used as control variable to control potential effects of financial crisis on forecast error.

$$Z\_Score = 1.2T_1 + 1.4T_2 + 3.3T_3 + 0.6T_4 + 0.999T_5$$

Where  $T_1$  to  $T_5$  represent working capital divided by total assets, accumulated earnings divided by assets, earnings before tax and interest divided by total assets, market value divided by total assets, and sales divided by total assets, respectively. It is noteworthy that if  $Z$  is greater than 2.99, the company lies outside financial crisis zone, and if it is smaller than 1.8, it is in financial crisis zone. Between these two scales is the gray zone [20].

## DATA ANALYSIS

In order to simplify data, using Excel, first the required ratios were calculated for each company and the years under study. Then, EViews software was used for testing hypotheses. Here, fusion data model is used instead of cross-sectional data. An advantage of this model is its statistical improvement of coefficients, compared to series or cross-sectional analysis of statistical data. Combining observations of time and cross-sectional series, along with the use of information in a big scale, in data fusion model lead to restricted heteroscedasticity of variance in organizations, decrease in collinearity of variables and

yields better performance due to increase in degree of freedom. Data fusion model may also help solve biased estimations in cross-sectional equations [10].

Appropriate model selection in static data fusion

Different models are used in regression estimation of fusion data. However, selecting the best model is difficult. The use of appropriate model in data fusion is tested in different ways. Houseman test is applied to determine the use of fixed effects or random effects models [10].

In the present study, Houseman test is applied on the first hypothesis and fixed effects model is selected. Then, coefficients of the model are estimated using estimated generalized least squares (EGLS) model. Results of Houseman test for the second hypothesis led to selecting random effects model. Models used in the study for evaluating the relationship between independent and dependent variables are:

a. Abnormal returns model

$$AR_{it} = b_0 + b_1 EFE_{it} + b_2 Size_{it} + b_3 PRO_{it} + b_4 OL_{it} + b_5 \left(\frac{BV}{MV}\right)_{it} + b_6 Z_{(Score)it} + \varepsilon_{it}$$

b. Systematic risk model

$$Beta_{it} = b_0 + b_1 EFE_{it} + b_2 Size_{it} + b_3 PRO_{it} + b_4 OL_{it} + b_5 \left(\frac{BV}{MV}\right)_{it} + b_6 Z_{(Score)it} + \varepsilon_{it}$$

## MODEL ESTIMATION AND RESULTS

a. Descriptive evaluation of data: disruptive statistics of data are calculated to perform data analysis. Results are given in Table 1.

**Table 1. Descriptive statistics of data**

Variables	Average	Mean	S.D	Skewness	Stretching	J statistics
<b>Dependent variables</b>						
Abnormal returns	1.61	-0.15	9.03	1.16	5.11	0.243
Systematic risk	0.56	0.39	1.07	1.20	6.86	0.215
<b>Independent variables</b>						
Earnings forecast error	0.06	0.04	0.93	3.8	4.51	0.085
<b>Control variables</b>						
Z_Score	2.90	2.26	2.52	4.67	37.52	0.112
Firm size	12.74	12.57	1.52	0.45	0.06	0.092
Profitability	0.21	0.15	0.27	4.33	28.20	0.073
Leverage	0.65	0.62	0.93	8.57	60.17	0.094
Book value to market value	0.46	0.26	1.85	19.03	72.56	0.195

As can be seen from Table 1, the coefficient of skewness is positive in terms of all variables, except earnings forecast error. This indicates that the peak is skewed to right and variables tend to smaller values.

Also, positive stretching indicates that variable distribution is higher than normal distribution and data are centered on the average. In order to approve normal distribution of data,  $H_0$  should be confirmed. When significance level is greater than 5,  $H_0$  (normal distribution) is confirmed. Results of Jargbera test demonstrate normal distribution of variables and confirmation of  $H_0$  at 5% level of confidence.

b. Statistical analysis and testing hypotheses.

EGLS is used for testing the following hypotheses.

Hypothesis 1: earnings forecast error has a direct relationship with abnormal returns.

**Table 2. Results of testing hypothesis 1 - step 1**

$$AR_{it} = b_0 + b_1 EFE_{it} + b_2 Size_{it} + b_3 PRO_{it} + b_4 OL_{it} + b_5 \left(\frac{BV}{MV}\right)_{it} + b_6 Z_{(Score)it} + \varepsilon_{it}$$

Variables	Coefficients	Standard deviation	t-statistics	Significance level
fixed value of C	2.037	0.315	5.523	0.000
Earnings forecast error	0.048	0.0061	7.623	0.000
Firm size	0.285	0.052	6.091	0.000
Profitability	1.173	0.195	5.483	0.001
Leverage	-0.026	0.009	-1.715	0.092
Book value to market value	-0.051	0.012	-4.585	0.000
Z_Score	0.031	0.005	4.412	0.005
F Statistics	4.001	Adjusted coefficient of correlation		0.412
F probabilistic statistics	0.0000	Durbin-Watson		2.015

Table 2 shows that all values of p, except for leverage, are significant at 95% confidence level. Durbin-Watson value (2.015) represents no correlation between the errors. Since significance level of leverage is 9%, which is greater than 5%, it is removed from the model and the model is retested. Results are given in Table 3.

**Table 3. Results of testing hypothesis 1 - step 2**

$$Beta_{it} = b_0 + b_1 EFE_{it} + b_2 Size_{it} + b_3 PRO_{it} + b_4 OL_{it} + b_5 \left(\frac{BV}{MV}\right)_{it} + b_6 Z_{(Score)it} + \varepsilon_{it}$$

Variables	Coefficients	Standard deviation	t-statistics	Significance level
fixed value of C	2.342	0.369	4.983	0.000
Earnings forecast error	0.092	0.021	7.834	0.005
Firm size	0.290	0.041	5.612	0.000
Profitability	2.321	0.195	5.502	0.000
Book value to market value	-0.054	0.015	-6.583	0.000
Z_Score	0.017	0.016	2.713	0.000
F Statistics	3.843	Adjusted coefficient of correlation		0.431
F probabilistic statistics	0.000	Durbin-Watson		1.935

According to Table 3, all values of p are significant and their adjusted coefficients of correlation explain 43% of the behavior of dependent variable. Therefore, hypothesis 1, indicating a linear and significant relationship between earnings forecast error and abnormal returns, is confirmed.

Hypothesis 2: earnings forecast error has a direct relationship with systematic risk. Based on results of Houseman test, the second hypothesis was tested using random effects model. Results given in Table 4 show that P value of Beta, as the independent variable, is 0.116 and its probability is greater than 0.05. Therefore, hypothesis 2 at 95% confidence level is rejected.

**Table 4. Results of testing hypothesis 2**

$$Beta_{it} = b_0 + b_1 EFE_{it} + b_2 Size_{it} + b_3 PRO_{it} + b_4 OL_{it} + b_5 \left(\frac{BV}{MV}\right)_{it} + b_6 Z_{(Score)it} + \varepsilon_{it}$$

Variables	Coefficients	Standard deviation	t-statistics	Significance level
fixed value of C	0.683	0.389	1.526	0.042
Earnings forecast error	0.036	0.059	0.838	0.116
Firm size	-0.069	0.047	-1.628	0.000

Profitability	1.271	0.169	5.527	0.002
Leverage	0.048	0.063	0.690	0.083
Book value to market value	-0.031	0.031	-0.849	0.085
Z_Score	0.018	0.048	0.489	0.108
F Statistics	6.628	Adjusted coefficient of correlation		0.128
F probabilistic statistics	0.0000	Durbin-Watson		1.963

### Testing the validity of overidentifying restrictions

A time series variable is stationary when its average, variance and autocorrelation coefficients are stable over time. This test gains importance when we want to get information about stationary time series in mixed data.

Stationary test, along with calculation of unit root of variables, is performed to ensure accuracy or relationship between regression and significance of variables. This is done using Levin, Lin and Choi test model (2002), Eim, Sons and Sean test model (2003), Fisher - Augmented Dickey-Fuller unit root test (Fisher-ADF), and Fisher - Prone (1999) & Choi (2001) unit root test. Results demonstrate that variables are stationary. Therefore,  $H_0$  indicating a similar unit root is rejected (Table 5).

Testing method								
Variables	Levin, Lin, Choi		Eim, Sons, Sean		Fisher - Dickey Fuller		Fisher - Philips Prone	
	Statistic s	Probabilit y	Statistic s	Probabilit y	Statistic s	Probabilit y	Statistic s	Probabilit y
Earnings forecast error	-18.49	0.000	-5.52	0.001	206.38	0.000	253.83	0.000
Abnormal returns	-20.38	0.000	-8.21	0.000	271.39	0.000	269.28	0.000
Beta	-19.73	0.000	-4.06	0.000	201.52	0.000	284.26	0.002
firm size	-9.52	0.000	-4.92	0.000	228.41	0.001	291.35	0.000
profitability	-38.83	0.000	-6.84	0.000	235.83	0.000	257.82	0.000
leverage	88.64	0.000	-3.49	0.000	241.25	0.000	253.21	0.000
book value to market value	-18.52	0.000	-2.93	0.000	238.93	0.000	258.49	0.000
Z_Score	-18.23	0.000	-5.27	0.000	195.17	0.002	262.95	0.000

### CONCLUSION

The present study evaluated the relationship between abnormal returns and systematic risk with earnings forecast error and found a direct relationship between abnormal returns and earnings forecast error. These results are in agreement with the findings of Firth [17], Clarkson [13], Georgia [19] and Kordestani [5].

The above relationship may be an indicative of information content of forecasted earnings and, that, disclosure of forecasted earnings may lead to deviation in average rate of abnormal returns. Thus, it can be claimed that forecasted earnings is highly influential on decision making process of those who use financial statements. The importance of forecasted earnings necessitates paying due attention to the issue of information quality and financial statements in accounting. Financial analysts, investors, and other users of financial information may be able to use potential capabilities of these information sources. On the other hand, Tehran Stock Exchange needs to facilitate access to financial information.

Results of testing the second hypothesis demonstrate no significant relationship between systematic risk and earnings forecast error. This is in agreement with the findings of Lennox & Park [23], while disavowing results of Gang. However, domestic studies in Iran focus mainly on the relationship between earnings forecast error and non-systematic risk, such as financial risk and business risk.

### LIMITATIONS OF THE STUDY

There exist many different variables influencing the positive relationship between earnings forecast error and abnormal returns. Here, effects of some of these variables are controlled. Nevertheless, determination

coefficients of variables show that there are many other variables at play which exert some influences on this relationship.

### SUGGESTION FOR FURTHER STUDIES

Considering information content of forecasted earnings and its role in decision making process of investors and financial analysts, it is suggested that Tehran Stock Exchange provide a reliable and optimal medium for supplying quick and accurate information about forecasted earnings. The following may prove an effective guideline for future studies in this regard:

- a. Evaluating effects of independent variables using qualitative variables such as owner type and audit report type.
- b. Examining results of testing hypothesis using non-linear models.
- c. Replicating the study using dynamic data fusion model and generalized method of moments.
- d. Identifying and evaluating factors affecting forecast error.

### REFERENCES

- Saghafi, Ali; Talaneh, Abdolreza. "The Role of Book Value, Earnings, and Depositary Authority in Evaluating Right of Ownership in Manufacturing Companies Listed at Tehran Stock Exchange", 1992-2005. *Auditing and Accounting Reviews*, 2007, No. 44, 3-34.
- Jahankhani, Ali; Saffarian, Amir. "Stock Market Response to Disclosure of Estimated Earnings per Share in Tehran Stock Exchange". *Journal of Financial Studies*, 2004, No. 16, 83-100.
- Sajjadi, Hossein. "Factors Related to Unexpected Earnings and Stock Price", *Auditing and Accounting Reviews*, 1999. No. 24 & 25, 34-60.
- Alavi Tabari, Hossein; Jalili, Arezoo. "Effectiveness of Fundamental Variable in Forecasting Earnings Growth", *Auditing and Accounting Reviews*, 2007, 119-134.
- Kordestanchi, Gholamreza; Bagheri, Mojtaba. "Evaluating the Relationship between Cash and Economic Value Added with Earnings Forecast Error", *Accounting Studies*, 2010, 130-147.
- Mashayekh, Shahnaz; Shahrokhi, Saman. "Evaluating Accuracy of Earnings Forecast and the Related Factors", *Auditing and Accounting Reviews*, 2008, 14 (50).
- Malekian, Esfandiari; Ahmadpour, Ahmad; Rahmani Nasrabadi, Mohammad; Daryaei, Abbasali. "Factors on Earnings Forecast Accuracy of Companies", *Auditing and Accounting Reviews*, 2011, No. 61, 23-38.
- Baginski S.P, Hassel J.M. Determinants of Management Forecast Precision, *Accounting Review*, 1997; 72(2): 303 - 312.
- Ball R.J, Brown. An Empirical Evaluation of Accounting Income Number, *Journal of Accounting Research*, 1968: 103-126.
- Baltaghi H. B. *Econometric analysis of Panel Data*. New York, 3d, John Wiley & Sons Lt; 2005.
- Beaver W.H. The Information Content of Annual Earnings Announcement, *Journal of Accounting Research* 1968; 67-92.
- Choi J, L. A. Myers. The Roles that Forecast Surprise and Forecast Error Play in Determining Management Forecast Precision; 2009-A Guide, available at: <http://www.ssrn.com>
- Clarkson P.M, Douthett A. The voluntary inclusion earnings forecasts in IPO prospectuses. *Journal of Contemporary Accounting Research*. 2002; 14: 601-626.
- Coën A, esfleurs A. International evidence on the relative importance of the determinants of earnings forecast accuracy, *Journal of Economics and Business*, 2009: 1-19.
- Cragg J. G, Malkiel B. G. The Consensus and Accuracy of Some Predictions of the Growth of Corporate Earnings, *the Journal of Finance*, 1968: 67- 48.
- Elton E. J, Gruber M. J. Earnings Estimates and the Accuracy of Expectational Data, *Management Science*; 1972: 409- 424.
- Firth, M. and Liao-Tan, C.K. Signalling models and the valuation of new issues: An examination of IPOs in Singapore, *Pacific- Basin Finance Journal*; 2001; 27: 511-526.
- Frankel R, McNichols M. Discretionary disclosure and external financing, *Accounting Review*; 1995: 135-150.



- Georgia, Siougle. Information Content of Earnings Forecast Disclosure 2003; 1-53.
- Gong G, Yue Li L. The Association between Management Earning Forecast Errors and Accruals, Accounting Review 2009; 84(2): 497-530.
- Hartnett N, Romcke J. The Predictability of Management Forecast Error: A Study of Australian IPO Disclosures. Multinational Finance Journal 2000; 4(1&2): 101-132.
- Hutagaol Y, Siau F. The determinants of management forecasts error and the IPO underpricing: A case study of Indonesian IPO, 2009; A Guide, available at: <http://www.ssrn.com>.
- Lennox C, Park C. The informativeness of earnings and management's issuance of earnings forecasts, Journal of Accounting and Economics 2006; 42 (3): 439-458.
- Payne J. L. The Influence of Audit Firm Specialization on Analysts' Forecast Errors Auditing: A Journal of Practice & Theory 2008; 27(2): 109-136.
- Rees L. Siavaramakrishnan K. The Effect of Meeting or Beating Revenue Forecasts on the Association between Quarterly Returns and Earnings Forecast Errors, Contemporary Accounting Research 2007; 24(1): 259-290.
- Richard. R. M. An Examination of the Accuracy of the Earnings Forecasts, Financial Management 1977; 78-84.
- Ruland, w. The Accuracy of Forecasts by Management and by Financial Analysts, The Accounting Review 1978; 2: 439-447.
- Vivian, W. The Role of Management Forecast Precision in Predicting Management Forecast Error, Rutgers Business School, Rutgers University, 2009; A Guide, available at: <http://www.ssrn.com>

© 2013. This work is published under <http://creativecommons.org/licenses/by/3.0> (the “License”). Notwithstanding the ProQuest Terms and Conditions, you may use this content in accordance with the terms of the License.