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Analysis of Forecasted Earning Characteristics' Affects on Earnings Response Coefficient of Companies Listed in Tehran Stock Exchange

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Abstract: One of the most efficient ways where managers can convey their expectations to the capital market is Earnings Per Share (EPS) forecast issuance. The main purpose of this research is to investigate the effect of management forecast properties on the companies admitted to Tehran Stock Exchange. It was conducted during 7 consecutive years from 2009-2015 and the collected data from 104 of such companies was analyzed. According to the findings, precision or accuracy, type and horizon of the forecasted earning affected the future earnings response coefficient of the statistic sample companies during the research. Hence, it seems that capital market activists have the capacity to comprehend and apply EPS forecasts to investment decision-making patterns. Furthermore, the results indicate the insignificance of EPS forecast issuance frequency. Concerning this issuance frequency of the predicted EPS may not be considered as related data for the investors.

Key words: Earnings forecast issuance frequency, earnings forecast precision or accuracy, earnings forecast type, earnings forecast horizon, earnings response coefficient

INTRODUCTION

Management earnings forecast presents some data to the market voluntarily. Quality of this data facilitates developing insight into the relationship among the voluntary disclosure cases with the companies' capital expenditure. Investors are interested to know whether they can trust the financial inventories data from company authorities or not. Though independent auditing somewhat relieves the anxieties over the inventories quality, the investors ability to decide on the quality of the un-audited financial data is not very evident.

The data presented by the company and so the earnings outcome is based on the company prior events but investors need some data about the company outlook. One approach is to present merely historical and current data by the commercial unit. It should be carried out in a way that the investors themselves can do the forecasts, however. In the next approach, the manager makes reliable forecasts through the resources and facilities and improves the financial markets efficiency through the forecasts public issuance (Ghasemi, 2005).

Since, it is not adequately clear how the present investors process the data and efficient market theory focuses on the quantity and speed of financial data effect on shares prices, making decision on these approaches seems difficult. Different researches have yielded different results. However, the majority of the financial experts believe that issuance of the financial forecasts improves making decision on investment. Company managers go into the group of the financial inventory users who are inside the company and gain more data than the external users consequently. In addition to the inventories, managers have access to company confidential data and they are provided with different sets of data in less time (Hutton and Stocken, 2009). Hence, if what managers expect differs with shareholders, capital market must react to managers EPS forecasts and investors use the data revealed by management to forecast company value.

When company disclosed data enjoys high quality, the investors are more capable to forecast the company future performance. indicated that precision augmentation in EPS forecasts accompanied better evaluation and assessment of companies by investors. that capital market activists and investors can comprehend the quality of the data revealed by joint stock companies and investors act better in forecasting the companies future performance. Hirst believe that Earnings Per Share (EPS) forecast issuance is one of the most efficient ways where managers can convey their expectations to the capital

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market. If this issuance helps investors in forecasting the future earnings, the earnings response coefficient may follow the quality of the revealed data related to the EPS forecasted by the manager. Hence, the main problem is to clarify the capital market activists' comprehension and reaction to different aspects of forecasted prediction based on the forecasts informative role in estimating the future earnings. Taking benefit of the prior researches, the present project attempts to complete the emirical and theoretical bases of the role that company disclosure plays in guiding the capital market activists in making proper and timely decisions on investment. Hence, the main problem of this research would be as the following.

How do the properties of forecasted earnings per share affect the response coefficient of the future earnings?

Previous research

Literature review: Investigated conservatism effect on management earnings forecasts. Their findings indicate that performing conservatism accounting is a substitute for management forecasts and reduces the market information asymmetry and potential judiciary lawsuits through timely reporting of the inappropriate news. studied the role of management forecast precision in estimating management earnings forecasts error. studied management earning forecasts in the companies Japan stock exchanges. They concluded that the first earnings forecast were higher than reality but it is negatively balanced during the year. The results show that the forecasts are informative on the average but they are less informatively reliable where made by the companies which give poor performances and have managers with poor and optimistic forecasts. The companies which were audited by the five major institutes enjoy higher authenticity of the forecasted earnings and lower forecasting error studied bias and accuracy of management earning forecasts according to the regulations of management forecasts audition in canadian companies. The findings indicate that the auditioned forecasts significantly enjoy less positive or optimistic bias than other forecasts but no significant relation was found for forecast accuracy. Rakow (2010) showed that optimistic forecasts and the ones which forecast a loss have significant correlation with high capital expenditures. Contrarily, timely forecasts and highly informative forecasts were related to low capital expenditures. Koch and Park (2011) studied the effect of consistent earnings growth on the properties of management forecasted earnings. They showed if the listed earnings were reported in the continuation of the company reported growing earnings chain at the time of stating the forecasted earnings, they were more important to the investors and analysts. The researchers argued that if the company has experience in consistent earnings growth, the forecasted earnings would be more valid and credible. According to them, earnings forecast accuracy is higher for the companies which have consistent earnings growth rate. Furthermore, the existence of management indexes and earnings facilitation in the company issued reports reduces the effect of consistent earnings growth on the validity of the forecasted earnings.

Kurdistani and Bagheri (2009) studied the relationship between cash and economic value added and earnings forecast error. The findings indicate that cash and economic value added had a relatively informative content in the error of earnings forecast based on incorporative data and it facilitates forecasting. Mahdavi and Hosseinabadi (2011) studied the relationship between the earnings error forecasted by the management and total obligatory items and the effect of commercial environments uncertainty on the relationship between the earnings error forecasted by the management and obligatory items. The results obtained from the research statistical analysis showed that there is a significant relationship between the earnings error forecasted by the management and total obligatory items. In addition, the relationship between earnings error forecasted by the management and the total obligatory items in the highly uncertain environments was not admitted.

Theoretical framework and the research hypotheses codification: Hutton and Stocken (2009) found that there is a direct relationship between the abundance of the data on earnings forecast and the intensity of investors' response. They proved that number of the issued pieces of data is important to the capital market and it is likely that the market rewards such disclosure. It is argued that higher frequency of disclosing forecasts data during a fiscal year results in greater amount of data for the investors in updating their expectations and analyses. Hence, the second research hypothesis was introduced .

MATERIALS AND METHODS

First hypothesis

Predicted EPS issuance frequency affects the response coefficient of the future earnings: Managers of the joint

stock companies estimate the expenditure and earnings of data disclosure potentially and use it as a basis to determine the company disclosure policies. In this case, comparing the expenditure and earnings of the accurately presented data to capital market could be a basis for managers' disclosure policies. Normally when unreliability of macro-economy and the company perspective is high, managers issue the data less accurately. As a result, the investors would have less ability to analyze and interpret the management earnings forecasts data properly and assess the future earnings. In addition, disclosing the data would not probably be worth high. Hence, it seems that shareholders would react to forecasting EPS carefully.

Second hypothesis

Predicted EPS accuracy affects the response coefficient of the future earnings: Interim reports provide the accounting data users with timely data to interpret and analyze the performance of the economic agencies before the end of fiscal year. It seems that regular and quarterly issuance of EPS forecasts is important to the shareholders and investors in two aspects: first, assessing the fulfillment degree of the return expected from investment in different sections of the fiscal year and second, assessing the manager's ability in presenting timely and accurate data on the company future status.

Third hypothesis

Predicted EPS type affects the response coefficient of the future earnings: Making forecasts of long-term horizon is practically difficult while short-term forecasts are more accessible in addition to fewer requirements to specialty and data analysis. Managers can reduce the company capital expenditure through issuing long-term forecasts. Furthermore, they can reduce the investors' expectations by making short-term forecasts. Presenting a long-term view on the company future status helps the capital market and the shareholders to have more capability in assessing the future earnings and forecasting the cash flows related to the investment. Hence, it seems that forecast horizon affects investors' response to the issued forecasts.

Fourth hypothesis

Predicted EPS horizon affects the response coefficient of the future earnings

Research population and sample: This research used classified and audited financial data of the productive companies listed in Tehran Stock Exchange to test the research hypotheses. The appropriate statistic sample was selected through systematic omission sampling method. This method was utilized to homogenize the statistic sample with the entire population and generalize the tests results to the statistical population. The statistical sample is selected according to the following conditions) the company should not be among the financial broking and investing companies) the company fiscal year should end at the end of ESF and the company should not undergo changing the fiscal year in the research period) the company transactional symbol should not have been transferred to the stock exchange unofficial billboard. This research project time span is 2004-2010. Having applied the conditions in the systematic omission sampling, 104 companies were selected from the statistical population to test the hypotheses. The project lasts for seven consecutive years. Hence, the sample final volume for testing the hypotheses is 728 years company.

Research variable and their measurement

Research independent variable(s): The independent variables of this research are the qualitative properties of the earnings issued and forecasted by management which include forecasts frequency, forecast precision or accuracy, forecast type and forecast horizon which are measured and estimated as the following.

Management earnings forecast frequency: Management may reconsider the forecasted earnings for a couple of times during a fiscal period. The reconsiderations are due to the manager's unreliability to implementation of the prior forecasts. This variable is computed through Ln1 and number of forecasts issued during fiscal year:

$$LNF = Ln (1+ NF)$$

Earnings forecast accuracy: This variable reflects the predicted EPS closeness degree with the real EPS. In order to measure EPS forecast precision, the absolute value of the difference between the real and fulfilled EPS and the predicted EPS. The more absolute value indicates less accuracy of the earnings forecast:

$$PREC_{it} = \frac{PEPS_{it}-EPS_{it}}{EPS_{it}}$$

Where:

PEPS = Predicted Earnings Per Share

EPS = Real and accomplished earnings Per Share

Earnings forecast type: Joint stock companies issue earnings forecast for quarterly and annual periods. Forecast type reflects that the value issued in the market is annually or quarterly. This concept is added to hypothesis testing pattern through virtual variables and considers the company policies on issuance periods from different aspects. These aspects have been completely clarified for the variable in the hypotheses testing pattern.

Earnings forecast horizon: Forecast horizon reflects number of days passed from the earnings forecast issuance until declaring the real earnings per share. The longer this period, data would be revealed timelier. This variable is computed through Ln (1+d). D is days remained the end of the year from the forecast issuance day.

Independent variable: Earnings response is the independent variable of this research. It is measured through the regression of the reported earnings of the statistical sample companies on their return stocks. Hence, a regression pattern which was presented by Collins and balanced and tested by Lundholm Myers in 2002 is used. This pattern is as the following:

$$R_t = b_0 + b_1X_{t-1} + b_2X_t + b_3R_{t-1} + \varepsilon_t$$

Where:

R = Company shares annual return
X = Accounting annual reported earnings

b_1 and b2 refer to earnings response coefficient of the prior period and current period, respectively.

Hypothesis testing and findings

Hypothesis testing: The testing pattern is derived. It is the developed model of measuring earnings response coefficient where the effects of management EPS properties on response coefficient of the future earnings are measured by adding the independent variables. Furthermore, some control variables were added to clarify the changes of shares return more efficiently. The regressive patterns of testing the hypothesis were elaborated as the following. First hypothesis testing model:

$$\begin{aligned}R_t = {} & \beta_0+\beta_1X_{t-1}+\beta_2X_t+\beta_3R_{t-1}+\beta_4LNF_t+\\ & \beta_5LNF_t\times X_{t-1}+\beta_6LNF_t\times X_t+\beta_7LNF_t\times\\ & R_{t-1}+\beta_8SIZE_t+\beta_9SIZE_t\times X_t+\beta_{10}LOSS_t+\\ & \beta_{11}LOSS_t\times X_t+\beta_{12}GROWTH_t+\beta_{13}GROWTH_t\times\\ & X_t+\beta_{14}EARNSTD_t+\beta_{15}EARNSTD_t\times X_t+\\ & \beta_{16}BETA_t+\beta_{17}BETA_t\times X_t+\varepsilon_t\end{aligned}$$

Where:

R = Company shares annual return
X = Annually reported net earnings divided by the company market value (company market value equals number of the issued shares multiplied by the company price per share in the capital market)
LNF = Reflects the forecast frequency variable and equals Ln1 plus number of forecasts issued during a fiscal period
SIZE = The company size as the control variable (natural logarithm of the company registered capital)
LOSS = Equals 1, if the company suffered loss in the period, otherwise, it equals zero (control variable)
GROWTH = Growth rate of the total assets of the company as control variable (change of official value in respect to the prior period)
EARNSTD = Standard deviation of the company net earning as control variable (earnings SD is computed in 3 years)
β = Company shares systematic risk index as control variable (shares systematic risk equals transformability of the company shares return to the transformability of the capital market return. It was computed by Rahavard Novin Software)

Coefficients β_1 and β_2 in the aforesaid regression pattern indicate the response coefficient of the accounting reported earnings in different periods. Coefficients β_5 and β_6 reflect the effect of earnings forecast frequency on the earnings response coefficient in different periods. In order to make decision about the first hypothesis, the aforesaid coefficients are compared for size and sign and the effects of adding forecast frequency variable on earnings response coefficient are considered in the regression model.

Second hypothesis testing model:

$$\begin{aligned}R_t = {} & \beta_0+\beta_1X_{t-1}+\beta_2X_t+\beta_3R_{t-1}+\beta_4PREC_t+\\ & \beta_5PREC_t\times X_{t-1}+\beta_6PREC_t\times X_t+\beta_7PREC_t\times R_{t-1}+\\ & \beta_8SIZE_t+\beta_9SIZE_t\times X_t+\beta_{10}LOSS_t+\beta_{11}LOSS_t\times X_t+\\ & \beta_{12}GROWTH_t+\beta_{13}GROWTH_t\times X_t+\beta_{14}EARNSTD_t+\\ & \beta_{15}EARNSTD_t\times X_t+\beta_{16}BETA_t+\beta_{17}BETA_t\times X_t+\varepsilon_t\end{aligned}$$

where, PREC is variable of forecast precision. It is obtained from the difference between forecasted earnings and accomplished earnings.

Coefficients β_1 and β_2 in the aforesaid regression pattern indicate the response coefficient of the accounting reported earnings in different periods. Coefficients β_5 and β_6 reflect the effect of earnings forecast precision on the earnings response coefficient in different periods. In order to make decision about the second hypothesis, the aforesaid coefficients are compared for size and sign and the effects of adding EPS forecast precision variable on earnings response coefficient are considered in the regression model.

Third hypothesis testing model:

$$\begin{aligned}R_t = {} & \beta_0 + \beta_1 X_{t-1} + \beta_2 X_t + \beta_3 R_{t-1} + \beta_4 DOFonly + \\ & \beta_5 DQFOnly_t \times X_{t-1} + \beta_6 DQFOnly_t \times X_t + \\ & \beta_7 DQFOnly_t \times R_{t-1} + \beta_8 DQFJoint_t + \\ & \beta_9 DQFJoint_t \times X_{t-1} + \beta_{10} DQFJoint_t \times X_t + \\ & \beta_{11} DQFJoint_t \times R_{t-1} + \beta_{12} DCF_t + \beta_{13} DCF_t \times \\ & X_{t-1} + \beta_{14} DCF_t \times X_t + \beta_{15} DCF_t \times R_{t-1} + \\ & \beta_{16} SIZE_t + \beta_{17} SIZE_t \times X_t + \beta_{18} LOSS_t + \\ & \beta_{19} LOSS_t \times X_t + \beta_{20} GROWTH_t + \\ & \beta_{21} GROWTH_t \times X_t + \beta_{22} EARNSTD_t + \\ & \beta_{23} EARNSTD_t \times X_t + \beta_{24} BETA_t + \\ & \beta_{25} BETA_t \times X_t + \varepsilon_t\end{aligned}$$

Where:

DQFOnly = It equals 1, if the quarterly forecast fiscal period had been issued during the fiscal period not the annual forecast. Otherwise, it equals zero

DQFJoint = It equals 1, if both quarterly and annual forecasts had been issued. Other wise it equals zero.

DCF = It equals 1, if the issued earnings forecast happened in the current period. Otherwise, it equals zero. (Some companies issue the EPS forecast statement after the fiscal year and before the general meeting. Such forecasts are not timely and capital market activists may not care about them very much. If issuance of the company earning forecast in measuring DCF is as it was mentioned, zero is added

Coefficients β_1 and β_2 in the aforesaid regression pattern indicate the response coefficient of the accounting reported earnings in different periods. Coefficients β_5 and β_6 reflect the effect of earnings forecast type on the earnings response coefficient in different periods. Forecast type in this research refers to annual or quarterly data issuance. In order to make decision about the third hypothesis, the aforesaid coefficients are compared for size and sign and the effects of adding EPS forecast type variable on earnings response coefficient are considered in the regression model.

Fourth hypothesis testing model:

$$\begin{aligned}R_t = {} & \beta_0 + \beta_1 X_{t-1} + \beta_2 X_t + \beta_3 R_{t-1} + \beta_4 HORIZON_t + \\ & \beta_5 HORIZON_t \times X_{t-1} + \beta_6 HORIZON_t \times \\ & X_t + \beta_7 HORIZON_t \times R_{t-1} + \beta_8 SIZE_t + \\ & \beta_9 SIZE_t \times X_t + \beta_{10} LOSS_t + \beta_{11} LOSS_t \times X_t + \\ & \beta_{12} GROWTH_t + \beta_{13} GROWTH_t \times X_t + \\ & \beta_{14} EARNSTD_t + \beta_{15} EARNSTD_t \times X_t + \\ & \beta_{16} BETA_t + \beta_{17} BETA_t \times X_t + \varepsilon_t\end{aligned}$$

where, HORIZON is the days remained from PEPS issuance until the end of fiscal year. Coefficients β_1 and β_2 in the aforesaid regression pattern indicate the response coefficient of the accounting reported earnings in different periods. Coefficients β_5 and β_6 reflect the effect of earnings forecast horizon on the earnings response coefficient in different periods. Forecast type in this research refers to annual or quarterly data issuance. In order to make decision about the fourth hypothesis, the aforesaid coefficients are compared for size and sign and the effects of adding EPS forecast horizon variable on earnings response coefficient are considered in the regression model.

RESULTS AND DISCUSSION

Results of descriptive analysis of the research hypotheses: Descriptive analysis investigates the central indexes and dispersion of the data. Data analysis requires the data descriptive statistics. Table 1-4 shows the indexes and dispersion of the data.

This table shows the descriptive analysis of the variables. The total research period where the companies statistical sample data have been collected for is 8 years from 2003-2010. Since, some research variables are dilatory and related to t-1 period, 7 years were analyzed in the research hypothesis test practically.

Table 1: Data show the indexes and dispersion

Variables	No.	Min.	Max.	Average	SD
Ret	728	-0.78	5.830	0.2568	0.74788
X	728	-0.69	1.250	0.1679	0.20409
LNF	728	0.69	2.200	1.2175	0.42394
PREC	728	0.00	3.410	0.8803	4.83048
HORIZON	728	0.00	5.850	5.1842	1.44125
DQFOnly	728	0.00	1.000	0.1909	0.39331
DQFJoint	728	0.00	1.000	0.3187	0.46629
DCF	728	0.00	1.000	0.0714	0.25772
GROWTH	728	-0.89	15.840	0.3016	1.16791
EARNSTD	728	0.00	5.100	0.0568	0.19803
SIZE	727	8.01	16.160	11.3895	1.47423
BETA	728	-5.10	15.171	0.2889	1.39122

Table 2: Correlation matrix among research variables

R_{et} correlation coefficient Sig. (2-tailed) N	R_{et}	X_t	X_{t-1}	R_{t-1}	LNF	PRED	HO	DQFO	DQFJ	DCF
X_t correlation coefficient	1.000	0.543	0.287	0.059	0.049	-0.073	0.139	-0.019	-0.695	-0.078
Sig. (2-tailed)	0.00	0.000	0.000	0.113	0.048	0.048	0.000	0.0617	0.000	0.035
N	728	728	728	728	728	728	728	728	728	728
X_{t-1} correlation coefficient	0.534	1.000	0.522	0.077	0.035	-0.260	-0.002	0.017	-0.371	-0.030
Sig. (2-tailed)	0.000	0.00	0.000	0.038	0.343	0.966	0.966	0.655	0.000	0.417
N	728	728	728	728	728	728	728	728	728	728
R_{t-1} correlation coefficient	0.287	0.522	1.000	0.435	0.034	0.191	-0.013	0.057	0.0242	-0.054
Sig. (2-tailed)	0.113	0.000	0.000	0.000	0.358	0.000	0.736	0.122	0.000	0.144
N	728	728	728	728	728	728	728	728	728	728
LNF correlation coefficient	0.059	0.077	0.435	1.00	-0.011	-0.126	0.134	0.064	-0.082	-0.100
Sig. (2-tailed)	0.113	0.038	0.000	0.00	0.760	0.001	0.000	0.087	0.038	0.007
N	728	728	728	728	728	728	728	728	728	728
PREC correlation coefficient	0.049	0.035	0.34	-0.011	1.000	-0.006	0.249	-0.038	-0.035	-0.074
Sig. (2-tailed)	0.187	0.343	0.358	0.760	0.00	0.871	0.000	0.305	0.343	0.045
N	728	728	728	728	728	728	728	728	728	728
R_{et} correlation coefficient	-0.073	-0.260	-0.191	-0.126	-0.006	1.000	0.026	0.025	0.066	0.024
Sig. (2-tailed)	0.048	0.000	0.000	0.001	0.871	0.00	0.488	0.499	0.077	0.518
N	728	728	728	728	728	728	728	728	728	728
HO correlation coefficient	0.139	-0.002	-0.013	0.134	0.249	0.026	1.000	-0.051	-0.060	-0.446
Sig. (2-tailed)	0.000	0.966	0.736	0.000	0.000	0.488	0.00	0.173	0.105	0.000
N	728	728	728	728	728	728	728	728	728	728
DQFE correlation coefficient	-0.019	0.017	0.57	0.064	-0.038	0.025	-0.051	1.000	-0.322	0.042
Sig. (2-tailed)	0.617	0.655	0.122	0.087	0.305	0.499	0.173	0.00	0.000	0.261
N	728	728	728	728	728	728	728	728	728	728
DQFJ correlation coefficient	-0.695	-0.371	-0.248	-0.082	-0.035	0.066	-0.060	-0.332	1.000	0.039
Sig. (2-tailed)	0.000	0.000	0.000	0.028	0.343	0.77	0.105	0.000	0.00	0.290
N	728	728	728	728	728	728	728	728	728	728
DC correlation coefficient	-0.078	-0.030	-0.054	-0.100	-0.074	0.024	-0.446	0.042	0.039	1.000
Sig. (2-tailed)	0.035	0.417	0.144	0.007	0.045	0.518	0.000	0.261	0.290	0.00
N	728	728	728	728	728	728	728	728	728	728

Table 3: Results of statistical analysis to test the first hypothesis

				Collinear tests	
Variables	Size of coefficient β (standardized)	t-statistic	Significance level p-values	Tolerance	Variance inflation factor
X_{t-1}	0.247	1.178	0.239	0.820	1.386
X_t	0.789	7.363	0.000	0.777	1.332
R_{t-1}	0.213	2.185	0.029	0.894	1.258
LNF	0.020	0.438	0.662	0.644	1.455
$LNF_t \times X_{t-1}$	0.126	1.152	0.250	0.775	1.401
$LNF_t \times X_t$	-0.171	-1.593	0.112	0.777	1.243
$LNF_t \times R_{t-1}$	-0.145	-1.436	0.151	0.787	1.240
SIZE	0.019	0.457	0.648	0.511	1.956
$SIZE_t \times X_t$	-0.470	-2.270	0.024	0.621	1.331
LOSS	-0.296	-7.537	0.000	0.578	1.731
$LOSS_t \times X_t$	-0.010	-0.280	0.780	-0.733	1.365
GROWTH	0.095	1.836	0.067	0.633	1.399
$GROWTH_t \times X_t$	-0.071	-1.304	0.193	0.603	1.397
EARNSTD	0.099	1.570	0.117	0.724	1.366
$EARNSTD_t \times X_t$	0.103	1.434	0.152	0.774	1.263
BETA	0.293	6.294	0.000	0.709	1.347
$BETA_t \times X_t$	-0.150	-2.812	0.005	0.613	1.398

Balanced R^2 = 0.355; Watson statistics = 1.783; Statistic F = 24.531; F significance level = 0.000

Table 4: Results of statistical analysis to test the second hypothesis

				Collinear tests	
Variables	Size of coefficient β (standardized)	t-statistic	Significance level p-values	Tolerance	Variance inflation factor
X_{t-1}	0.209	1.047	0.295	0.622	1.358
X_t	0.671	15.478	0.000	0.770	1.329
R_{t-1}	0.068	1.778	0.076	0.598	1.671
PREC	-0.171	-1.535	0.125	0.671	1.316
$PREC_t \times X_{t-1}$	0.217	1.998	0.046	0.675	1.402
$PREC_t \times X_t$	0.076	2.054	0.040	0.641	1.561
$PRE_t \times R_t$.1	0.045	1.909	0.276	0.512	1.952
SIZE	0.009	0.227	0.820	0.520	1.923
$SIZE_t \times X_t$	-0.368	-1.813	0.070	0.602	1.427
LOSS	-0.298	-7.203	0.000	0.514	1.946
$LOSS_t \times X_t$	0.000	0.000	1.000	0.674	1.484
GROWTH	0.090	1.753	0.080	0.523	1.902
$GROWTH_t \times X_t$	-0.065	-1.199	0.231	0.602	1.313
EARNSTD	0.113	1.829	0.068	0.530	1.856
$EARNSTD_t \times X_t$	0.111	1.559	0.120	0.673	1.375
BETA	0.291	6.371	0.000	0.610	1.441
$BETA_t \times X_t$	-0.148	-2.805	0.005	0.615	1.376

Balanced R^2 = 0.36; Watson statistics = 1.776; Statistic F = 24.98; F significance level = 0.000

It includes 728 companies altogether. Descriptive statistics provides the researcher with useful statistics on the computed variables. For instance, descriptive analysis of net earnings variable indicates that the sample companies have been profitable during the research period because the variable average is positive. The finding is similar to shares return and it is confirmed by descriptive statistics.

Correlation matrix between research variables: A statistical technique which helps knowing the research

variables better is to investigate the correlation among independent and dependent variables individually. In fact, this technique is considered as a descriptive analysis. In order to conduct this analysis, correlation matrix was estimated according to Spearman correlation coefficient. This matrix shows the correlation among the hypothesis testing variables.

The results indicate that there is a significant direct relationship between shares return variable, for example and the current period earnings, prior period earnings and forecast horizon. However there is a significant and negative relationship between this variable and forecast accuracy, DQFJ and DCF.

Results of testing the first hypothesis: According to the results, regression balanced determination coefficient is 0.355 and this pattern clarified 35.5% of the dependent variable variations through changes of the independent variables. Watson statistics is between 1.5 and 2.5. Hence, there is not correlation among the errors of its regression pattern. Significance level of statistic F is less than testing error ($\alpha = 0.05$) and the estimated pattern is statistically significant and there is a linear relation among variables. Results of the collinear tests in the last two columns of the second section indicate a partial co-linearity among some independent variables. Since, the regression model of the hypothesis test is based on interactive variables, partial co-linearity among independent variables is inevitable and it does not affect the validity of the regression pattern.

According to the obtained results, estimation coefficient for variable X_t is 0.789 and its significance level is 0.000. This finding indicates a direct and significant relationship between the current periods reported earnings, shares return and earnings response coefficient. Coefficient variable R_{t-1} is also positive and significant. It indicates that there is a direct and significant relationship between the prior period return and the present period return. In addition as the presented findings in Table 3 show, the significance level of the forecast frequency variable and its interactive variables which measure the effect of forecast frequency on earnings response coefficient is higher than 0.05. This finding indicates that forecast frequency does not affect earnings response coefficient of the companies during the research period.

Regarding the control variables, the results indicate that loss sustainability of the company affects shares return negatively. Coefficient variable BETA is positive and significant. It indicates that it increase (decrease) of systematic risk has increased (decreased shares return. According to the aforesaid table, coefficient variable $SIZE \times X_t$ is negative and significant. It implies that the company size affects earnings response coefficient and results in the shareholders' negative response to the reported earnings.

Results of testing the second hypothesis: Estimated coefficient for variables $PREC \times X_{t-1}$ and $PREC \times X_t$ which indicate the effect of earnings forecast accuracy on the earnings response coefficient for the prior period and the present period respectively are positive and significant. This finding indicates that higher (lower) EPS forecast accuracy results in higher (lower) reported earnings response coefficient. Accordingly, if the issued forecasts are accurate (precise), investors would pay more attention to accounting system data. Hence, we could conclude that prediction EPS accuracy has significant statistical effect on earnings response coefficient. Hence, the presented claim in the second hypothesis is acceptable and the hypothesis is admitted at 95% reliability level.

Results of testing the third hypothesis: The estimated coefficients for DQF Joint and DQF Only are both significant and negative. It implies that there is significant and reverse relationship between forecast type and shares return. In addition, due to the size of the aforesaid coefficient, we could conclude that simultaneous issuance of the annual and quarterly forecasts has more undesirable effect on the company shares than when only quarterly forecast is issued. Estimated coefficient for $DQFOnly \times X_t$ is positive and significant. The recent finding indicates that the current earnings response coefficient in this group of companies is positive. According to the obtained results, coefficient of $DQFJoint \times X_{t-1}$ and $DQFJoin_t \times X_t$ which indicate the effect of annual and seasonal forecasted earnings issuance together on the coefficient of both prior period and the present period response coefficient are positive. This finding shows the effect of forecast type (together annual and seasonal forecasted earnings issuance) on earnings response coefficient. According to the aforesaid findings, we could conclude that EPS forecast type has statistically significant effect on earnings response coefficient. Hence, the third hyposis claim is acceptable with a reliability of 95%.

Estimated coefficient for variables $PREC \times X_{t-1}$ and $PREC \times X_t$ which indicate the effect of earnings forecast accuracy on the earnings response coefficient for the prior period and the present period respectively are positive and significant. This finding indicates that higher (lower) EPS forecast accuracy results in higher (lower) reported earnings response coefficient. Accordingly, if

Table 5: Results of statistical analysis to test the third hypothesis

Variables	Size of coefficient β (standardized)	t-statistic	Significance level p-values	Collinear tests: Tolerance	Collinear tests: Variance inflation factor
X_{t-1}	0.2570	1.387	0.166	0.521	1.408
X_t	0.4750	10.425	0.000	0.642	1.326
R_{t-1}	0.0600	1.102	0.271	0.536	1.538
DQFOnly	-0.2390	-5.300	0.000	0.650	1.457
DQFJoint	-0.3380	-8.274	0.000	0.524	1.656
DCF	-0.0130	-0.345	0.730	0.538	1.858
$DQFOnly_t \times X_{t-1}$	-0.0770	-1.570	0.117	0.694	1.405
$DQFOnly_t \times X_t$	0.2630	5.934	0.000	0.662	1.464
$DQFOnly_t \times R_{t-1}$	0.0710	1.694	0.091	0.602	1.485
$DQFJoint_t \times X_{t-1}$	0.1250	2.583	0.010	0.804	1.288
$DQFJoint_t \times X_t$	0.1440	3.687	0.000	0.865	1.152
$DQFJoint_t \times R_{t-1}$	-0.0340	-0.753	0.452	0.840	1.243
$DCF_t \times X_{t-1}$	-0.0230	-0.457	0.648	0.686	1.496
$DCF_t \times X_t$	0.0110	0.283	0.778	0.535	1.596
$DCF_t \times R_{t-1}$	0.0200	0.604	0.546	0.629	1.590
SIZE	0.0520	1.374	0.170	0.597	1.512
$SIZE_t \times X_t$	-0.4290	-2.212	0.027	0.519	1.624
LOSS	-0.2060	-5.660	0.000	0.535	1.869
$LOSS_t \times X_t$	0.0040	0.131	0.896	0.726	1.378
GROWTH	0.0270	0.572	0.568	0.621	1.416
$GROWTH_t \times X_t$	-0.0650	-1.199	0.231	0.602	1.313
EARNSTD	0.0900	1.585	0.113	0.619	1.570
$EARNSTD_t \times X_t$	0.0500	0.789	0.431	0.673	1.566
BETA	0.2520	5.892	0.000	0.588	1.574
$BETA_t \times X_t$	-0.1000	-2.044	0.041	0.696	1.374

Balanced R^2 = 0.484; Watson Statistics = 1.798; Statistic F = 28.285; F significance level = 0.000

the issued forecasts are accurate (precise), investors would pay more attention to accounting system data. Hence, we could conclude that prediction EPS accuracy has significant statistical effect on earnings response coefficient. Hence, the presented claim in the second hypothesis is acceptable and the hypothesis is admitted at 95% reliability level.

Results of testing the fourth hypothesis: Estimated coefficient for $HORIZON \times X_{t-1}$ which indicate the effect of forecast horizon on the prior period earnings response is -0.18 with a significance level of 0.037. According to the findings, forecast horizon is a factor which encourages the investors to use accounting earnings data in determining shares price and forecast horizon results in creating negative earnings response coefficient. In other words, investors pay less attention to accounting earnings in the companies with high EPS forecast horizon.

According to the findings it could be concluded that EPS forecast horizon has statistically significant effect on the earnings response coefficient of the current period. Hence, the presented claim in the fourth hypothesis is acceptable with a reliability level of 95% it show in Table 5 and 6.

Table 6: Results of statistical analysis to test the fourth hypothesis

Variables	Size of coefficient β (standardized)	t-statistic	Significance level p-values	Collinear tests: Tolerance	Collinear tests: Variance inflation factor
X_{t-1}	0.139	0.615	0.539	0.517	1.554
X_t	0.631	5.242	0.000	0.761	1.318
R_{t-1}	0.224	1.340	0.181	0.632	1.469
HORIZON	0.003	0.087	0.931	0.586	1.707
$HORIZON_t \times X_{t-1}$	-0.180	-2.185	0.037	0.639	1.471
$HORIZON_t \times X_t$	0.004	0.036	0.971	0.663	1.492
$HORIZON_t \times R_{t-1}$	-0.144	-0.865	0.387	0.532	1.522
SIZE	0.021	0.501	0.616	0.507	1.971
$SIZE_t \times X_t$	-0.434	-2.080	0.038	0.620	1.483
LOSS	-0.291	-7.433	0.000	0.582	1.719
$LOSS_t \times X_t$	0.001	0.017	0.987	0.739	1.353
GROWTH	0.093	1.804	0.072	0.531	1.522
$GROWTH_t \times X_t$	-0.071	-1.321	0.187	0.603	1.496
EARNSTD	0.095	1.521	0.129	0.629	1.363
$EARNSTD_t \times X_t$	0.089	1.247	0.213	0.676	1.478
BETA	0.291	6.228	0.000	0.506	1.461
$BETA_t \times X_t$	-0.149	-2.807	0.005	0.614	1.386

Balanced R^2 = 0.355; Watson Statistics = 1.792; Statistic F = 24.457; F significance level = 0.000

CONCLUSION

It seems that EPS forecast issuance frequency is not considered as related data for the investors. In other words it could be interpreted that EPS forecast issuance frequency does not affect the capital market activists' investment decisions. Furthermore, forecasts issuance frequency shows that the manager reconsidered the forecast earnings. Rakow (2010) believes that forecast reconsideration is due to management unreliability to the future perspective of the company, industry or probably macro-economy. The reconsiderations convey this unreliability to the capital market. According to the results, higher (lower) manager's precision in EPS forecast results in the investors' higher (lower) reaction to the company reported earnings. Capital market has the ability to comprehend and use the data on EPS forecast news in the patterns of investment decision-making. In other words, the capital market response to the properties of earnings forecast indicates that the investors follow up the management forecasts on EPS and compare them with the prior procedure to find out its precision degree and they use the data in their decisions on shares purchase and selling. In addition, the results evidently show that quarterly forecasts issuance results in creating earning response coefficient in the companies in the statistic sample. It seems that the financial data of the companies which issue short-term forecasts are more attractive to the capital market activists and the minority share holders and the shares exchange volumes of these companies would be higher than other companies due to the expected short-term results they create for the shareholders.

SUGGESTIONS

Managers of the joint stock companies are advised to avoid conducting the reconsiderations to achieve admissibility in the shares market and encourage the investors' response, because it was proved that investors may not pay attention to the data on EPS forecast reconsideration and this variable did not result in any particular response in the capital market. However, if the reconsideration is due to achieving new data which may affect future implemented earnings, they should use different informing or communication methods to help the investors in balancing their expecting return according to the new data.

In issuing the forecasts, two factors should be considered) managers should try to pay attention to the entire cases such as the company properties and historical data which the capital market may consider in forming the expecting return and the forecasted data should be publicized through different methods such as Internet, economic gazette, etc. as well as the stock exchange.

Managers of the joint stock companies should prefer accuracy (precision) in estimating and issuing the forecasts and avoid issuing careless hasty forecasts.

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