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THE EFFECT OF EARNINGS FORECASTS QUALITY ON RISK TAKING AND FIRM'S VALUE IN FIRMS LISTED IN TEHRAN STOCK EXCHANGE

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Abstract *The aim of this study is to investigate the effect of earnings forecasts quality on risk taking and firm's value in firms listed in Tehran Stock Exchange (TSE). To do so, 135 firms listed in TSE are selected to be studied during the period from 2006 to 2012 using regression and correlation tests. Earnings forecasts quality is captured by two proxies of earnings forecast accurateness and earnings forecast frequency. In addition, risk is broken into systematic and unsystematic risks and firm's value is captured through Tobin's Q. The results show that frequency of earnings forecasts has a negative and earnings forecasts has a positive significant effect on unsystematic risk of firms listed in TSE. These results suggest that with increasing earnings forecasts quality, unsystematic risk decreases. In addition, the study fails to find a significant relationship between earnings forecasts quality with systematic risk and firm's value.*

Keyword: *Earnings Forecasts Quality, Risk Tasking, Firm's Value, Tehran Stock Exchange*

INTRODUCTION

Earning is one of the most important items in financial statements which attracts financial statements users. Financial statements indicate historical information for a firm; however, potential investors need information about firm's future. Managers having knowledge about their firm's future, make estimates and forecasts. These forecasts increase markets efficiency (Lotfi & Hajipour, 2010).

Estimates and forecasts influence most financial statement items through rendering managers the tools to communicate to investors forward-looking, inside information which improves the relevance of financial information. On the other hand, the quality of financial information involves: (i) the increasing difficulty of making reliable forecasts in a fluctuating economy, and (ii) the repeated managerial misuse of accounting estimates to manipulate financial data. Given the increasingly importance of estimates in accounting data, whether these estimates result in an improvement in the quality of financial information or not is of the most critical debates in accounting (Li *et al*., 2009). Nevertheless, estimates are necessary for economic decision makings. In the economic world, all users of financial statements such as investors, creditors and managers rely on estimates. Since the most of these groups have not access to financial information, they have to relyon information provided by managers. Accordingly, Securities and Exchange Organization (SEO) has made stock companies to provide their future forecasts of earnings in the form of earnings forecast per share (Tamjidi *et al*., 2013). However, in recent years, investors, academics, and authorities have fired firms on manipulating earnings in that executives manage market expectations and earnings to satisfy short-term earnings goals (Call *et al*., 2010).

The issuing earnings forecasts by managers highlight firm's futures performance according to one of the most important accounting numbers, earnings. However, earnings forecasts may have an impact on firm's value and firm's risk. In Iran, according to 7th provision of managers commitment of firms listed in Tehran Stock Exchange, firms are required to predict earnings per share quarterly and yearly, and should be presented to management of supervision on firms of Tehran Stock Exchange in maximum 20 days.

In this study,the effect of earnings forecasts quality on risk taking and firm's value in firms listed in TSE is investigated. The answer to this question may make managers aware of their forecasts importance.

LITERATURE REVIEW

Yaekura & Sougiannis (2000) examined the earnings forecasts quality and the quality of the GAAP earnings and

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find analysts' earnings forecasts communicate information about value far from that communicated by current earnings, book values and dividends.

Foerster *et al.* (2010) investigated whether earnings voluntary disclosure forecasts impact investors' long-term evaluation of firm's risk and firm's value. They find a significant negative relationship between the providing earnings forecasts and a set of risk measures consisting idiosyncratic risk, stock return volatility, beta, and bid-ask spreads suggesting that information risk is an important determinant of both diversifiable risk and non-diversifiable systematic risk. They also demonstrate that earnings forecasts are positively related to firm value when firms have determined their forecasting reputation by releasing more frequent, precise and credible forecasts.

Chen *et al*. (2008) find that (1) earnings forecasts with disaggregated information are no different from aggregated earnings forecasts in either bias or accuracy for good news forecasts; (2) earnings forecasts with disaggregated information are significantly less accurate and more optimistic than aggregated earnings forecasts for bad news forecasts; (3) stock market reactions to disaggregated good news forecasts are no different from stock market reactions to aggregated good news forecasts, but stock market reactions to disaggregated bad news forecasts are more negative than stock market reactions to aggregated bad news forecasts.

Chin *et al*. (2006) examined the relationship between mandatory earnings forecast quality and the ownership structure. They find that concentrated ownership structures increase agency conflicts between owners and potential investors. They also find that firms are inclined to present more inaccurate and optimistically biased forecasts in the presence of the greater gap between the owner's control and the equity ownership level and firms with serious agency problems are inclined to revisit their forecasts more to reduce error or bias or manipulate accruals more. Finally, they show that the post-managed forecast error or bias does not change with the level of ownership concentrationsignificantly.

Givoly *et al*. (2009) indicate that analysts' cash flow forecasts are less accurate than analysts' earnings forecasts and increase at a slower degree during the forecast period. They indicated that cash flow forecasts is a naïve extension of analysts' earnings forecasts, thus representing limited information on expected changes in working capital. They also find that analysts' forecasts of cash flows have limited information content and are relatedto stock returns weakly. Finally, they show that estimating expected accruals as the difference between analysts' earnings forecasts and their cash flow forecasts does not lead to a better detection of earnings management than obtained by commonly used accrual models.

Goodman *et al*. (2013) investigated whether managers' reported earnings forecasts quality can be used to find out the quality of their corporate investment decisions. They find that forecasting quality is related to the quality of both acquisition and capital expenditure decisions positively which suggests that forecasting quality can be used to find out the quality of capital budgeting decisions within firms.

Baginski *et al*. (2006) find an increase in management earnings forecast precision, management earnings forecast accuracy, and managers' tendency to explain earnings forecasts in 1993-1996 relative to 1983-1986. They also indicate that the information content of management earnings forecasts increased in 1993-1996 relative to 1983-1986.

Glaum *et al*. (2010) find that the introduction of international accounting standards improved forecast accuracy and only the quality of notes to companies' financial statements matters to analysts while the quality of management reports make no difference to them.

Li *et al.* (2009) indicate that accounting estimates for working capital items do not improve the prediction of cash flows. However, estimates improve the prediction of next year's earnings but not subsequent years' earnings. They show that accounting estimates do not improve cash flow or earnings prediction.

Lee *et al*. (2002) evidence suggest that forecasts related to Big 6 auditors are more accurate than those for which a non-Big 6 auditor is used and bias for forecasts relatedto Big 6 auditors are less optimistic.

Tamjidi *et al.* (2013) evaluated the relationship between earnings forecast error with abnormal returns and systematic risk in TSE. Their results indicate a positive significant relationship between earnings forecast error and abnormal returns. However, there is not a significant relationship between earnings forecast error and systematic risk.

Call *et al.*(2010) find that firms providing short-term earnings forecasts exhibit significantly lower abnormal accruals than the firms that do not issue earnings forecasts. They also find that firms facing higher capital market pressure exhibit worse earnings quality while guidance issuance and guidance regularity mitigate the negative impact of capital market pressure on earnings quality.

Sab Alipour *et al.* (2012) investigate the relationship between corporate governance mechanisms and earnings forecast preciseness. Their results show that there is a significant positive relationship between outside board of director and earnings forecast preciseness while there is no significant relationship between institutional ownership, audit quality and duality, and earnings forecast preciseness.

HYPOTHESES DEVELOPMENT

H_1: Earnings forecasts quality has a significant effect on firms value listed in TSE.

Sub-$H_{1\text{-}1}$: Earnings forecasts accurateness has a significant effect on firms value listed in TSE.

Sub-$H_{1\text{-}2}$: Frequency of earnings forecasts has a significant effect on firms value listed in TSE.

H_2: Earnings forecasts quality has a significant effect on risk taking of firms listed in TSE.

Sub-$H_{2\text{-}1}$: Earnings forecasts accurateness has a significant effect on systematic risk of firms listed in TSE.

Sub-$H_{2\text{-}2}$:Frequency of Earnings forecasts has a significant effect on systematic risk of firms listed in TSE.

Sub-$H_{2\text{-}3}$: Frequency of earnings forecasts has a significant effect on unsystematic risk of firms listed in TSE.

Sub-$H_{2\text{-}4}$: Earnings forecasts accurateness has a significant effect on unsystematic risk of firms listed in TSE.

METHODOLOGY

Since the study tries to find the effect of earnings forecasts quality on risk taking and firm's value in firms listed in TSE, the research is descriptive-correlation study. On the other hand, the study is ex-post facto (casual-comparative) and it is applied study since the wide range of financial information users can utilize it. In addition, it should be considered as positive research in accounting when it is related to the capital market. It is worth to notice that risk taking and firm's value are considered independent variable, earnings forecasts quality as dependent variable and also leverage, firm`s size and leverage as control variable.

Population and Sampling

The population of this study consists of firms listed in TSE. However, due to high volume of population and heterogeneity among firms listed in TSE, following conditions are considered:

1. Firms must have been accepted since 2006 in TSE.
2. Firm's fiscal year must be ended at the end of year and they have not changed their fiscal year during studied period.
3. Firms must not be brokerage or investment firm.

As a result of these conditions, a sample of 135 firms is selected to be studied during 2006 to 2012.

Research Variables and Models

To test research hypotheses following regressions are used:

$Risk_{i,t}= a + bEARNA_{,i,t}+\sum y\ EARNF_{i,t}+e_{i,t} i=1,\ldots,N, t=1,\ldots,T$

$TobinsQ_{i,t}= a+ bEARNA_{,i,t}+\sum yEARN\ F_{i,t}+e_{i,t} i=1,\ldots,N, t=1,\ldots,T$

$Risk_{i,t}$: systematic and unsystematic risk of firm i in time t

$EARNA_{,i,t}$: earnings forecast accurateness

$EARN\ F_{i,t}$: earnings forecast frequency

$e_{i,t}$: models error

Dependent Variable

Tobin's Q measure is used to evaluate the firm's performance which is calculated as following:

$Tobin's\ Q = ((MV_{i,t})/(BV_{i,t})) - Debt_{i,t}$

$MV_{i,t}$: firms market value (total firms stock* stock price) for firm i in time t

$BV_{i,t}$: assets book value for firm i in time t

$Debt_{i,t}$: firms debt for firm i in time t

Systematic Risk

Also called market risk, it is not firm specific and it cannot be circumvented or eliminated by portfoliodiversification but may be reduced by hedging.[1]

Systematic risk is obtained from β coefficient as following:

$$\beta_i = \frac{\mathrm{COV}(r_i, r_m)}{\sigma^2(r_m)}$$

Unsystematic Risk

Company or industry specific risk that is inherent in each investment. The amount of unsystematic risk can be reduced through appropriate diversification. Also known as "specific risk," "diversifiable risk" or "residual risk"[2]which is obtained as following:

$R_{i,t} - R_{f,t} = \alpha_i + \beta_i(R_{m,t} - R_{f,t}) + e_{i,t}$

$R_{i,t}$: monthly stock return for firm i in time t

$R_{f,t}$: monthly risk free stock return

$R_{m,t}$: monthly risk free stock return

$e_{i,t}$: error

1. http://www.businessdictionary.com/definition/systemic-risk.
2. http://www.investopedia.com/terms/u/unsystematicrisk.asp

Independent Variables

Research independent variable is earnings forecast quality captured by following variables:

Earnings Forecast Frequency

Earnings forecast disclosure by management in studied period even for one time is considered as a proxy for earnings forecast frequency.

$IF_{i,t}>0$ (i=2005,2006,2007,2008,2009,2010,2011)

$IF_{i,t}$: Earnings forecast disclosure by management in studied period

Earnings Forecast Accurateness

Disclosure of accurate earnings forecasts in the way that determines amount or a range for earnings.

$PPIF_{i,t}$: $Lim(NIF_{i,t}-RF_{i,t})=0$

$PPIF_{i,t}$: earnings forecast accurateness for firm i in time t

$NIF_{i,t}$: earnings forecast for firm i in time t

$RF_{i,t}$: realized earnings for firm i in time t

Control Variables

Firm's size: natural logarithm of firms market equity at the end of year

$Size_{i,t}$: $LOG(MV_{i,t})$

$Size_{i,t}$: firm's size

$MV_{i,t}$: Market value of firms

Leverage: the ratio of total debts to total assets in the end of year

$D_{i,t}$:$Debt_{i,t}$/ $Asset_{i,t}$

$D_{i,t}$: debts ratio for firm i in time t

$Debt_{i,t}$: firms total debts for firm i in time t

$Asset_{i,t}$: firms total assets for firm i in time t

EMPIRICAL RESULTS

Descriptive Statistic

Descriptive statistic of research variables is presented in Table 1.

According to Table 1, earning forecast frequency has a minimum of 0 and maximum of 6 showing that firms of TSE disclosed earning forecast in studied period at most 6 times. Mean of beta factor is 1.2 showing that, on average, TSE firms have a beta of 1.2 which is rather high. In addition, leverage has a mean of 0.74 indicating that 74 percent of firm's assets are financed by debts and leverage which is rather high.

Hypotheses test

H_1:Earnings forecasts quality has a significant effect on firms value listed in TSE.

To test this hypothesis, earnings forecasts quality is captured through two proxies of earnings forecasts accurateness and frequency of earnings forecasts.

Sub-$H_{1\text{-}1}$: Earnings forecasts accurateness has a significant effect on firms value listed in TSE.

The results of this hypothesis are indicated in Table 2.

Considering significance of earning forecast accurateness, it can be concluded that earnings forecasts accurateness has no significant effect on firm's value listed in TSE. However, control variables of firm's size and leverage have a significant effect on firm's value. Durbin Watson statistic is between 1.7 and 2.2 showing that there is not an autocorrelation among regression residuals. Significance of F statistic indicates that the whole model is significant. Finally, adjusted R^2 indicate that 0.045 of changes in firms value is explained by

Table 1: Descriptive Statistic

	Min	Max	Mean	Standard div
Earning forecast accurateness	3/50	3372/73	154/21	406/85
Earning forecast frequency	0	6	4/79	1.64
Tobin's Q	-73527213	4390633/94	-593802.64	618180/93
β	-26.46	56.01	1.2	7.22
Unsystematic risk	0	352.88	38.72	44.95
Firms size	0	13.32	11.29	1.19
Leverage	0.24	5.02	0.74	0.48

Table 2: 1-1 Hypothesis Test Results

	Unstandards coefficient		Standards coefficient	t	Sig.	Collinearity diagnosis	
	B	Standards error	β			Tolerance	VIF
C	16827572	6549695	-	2.569	.011	-	-
Earning forecast accurateness	1057.41	1679.36	.060	.630	.530	.873	1.146
Firms size	-1228629	537006	-.207	-2.288	.024	.960	1.042
Leverage	-5416766	2654530	-.192	-2.041	.044	.883	1.132
Durbin Watson	R^2	AdjustedR^2	F	Sig.			
2.018	0.069	0.045	922.2	037.0			

independent variable and control variables.

Sub-$H_{1\text{-}2}$: Frequency of earnings forecasts has a significant effect on firms value listed in TSE.

The results of this hypothesis are indicated in Table 3.

Considering significance of earning forecast frequency, it can be concluded that earnings forecast frequency has no significant effect on firm's value listed in TSE. However, control variable of firm's size has a significant effect on firm's value, while leverage does not. Durbin Watson statistic is between 1.7 and 2.2 showing that there is not an autocorrelation among regression residuals. Significance of F statistic indicates that the whole model is not significant. Finally, adjusted R^2 indicate that 0.034 of changes in firms value is explained by independent variable and control variables.

H_2:Earnings forecasts quality disclosure has a significant effect on risk taking of firms listed in TSE.

To test this hypothesis earnings forecasts quality is captured through two proxies of earnings forecasts accurateness and frequency of earnings forecasts.

Sub-$H_{2\text{-}1}$: Earnings forecasts accurateness has a significant effect on systematic risk of firms listed in TSE.

The results of this hypothesis are indicated in Table 4.

Considering significance of earning forecast accurateness, it can be concluded that earnings forecasts accurateness has no significant effect on systematic risk of firms listed TSE. However, control variables of firm's size have a significant effect on firm's value while leverage does not. Durbin Watson statistic is between 1.7 and 2.2 showing that there is not an autocorrelation among regression residuals.

Table 3: 1-2 Hypothesis Test Results

	Unstandards coefficient		Standards coefficient	t	Sig.	Collinearity diagnosis	
	B	Standards error	β			Tolerance	VIF
C	14134158	6436669		2.196	.030		
Earning forecast frequency	24884	480314	.006	.052	.959	.613	1.632
Firms size	-1224923	531049	-.208	-2.307	.023	.940	1.064
Leverage	-1373646	1584539	-.095	-.867	.388	.634	1.577
Durbin Watson	R^2	AdjustedR^2	F	sig			
2.002	0.046	0.034	2.006	.117			

Table 4: 2-1 Hypothesis Test Results

	Unstandards coefficient		Standards coefficient	T	Sig.	Collinearity diagnosis	
	B	Standards error	β			Tolerance	VIF
C	15.115	6.787		2.227	.028		
Earning forecast accurateness	-.001	.002	-.033	-.339	.735	.873	1.146
leverage	-3.405	2.751	-.118	-1.238	.218	.883	1.132
Firms size	-1.015	.556	-.167	-1.825	.071	.960	1.042
Durbin Watson	R^2	Adjusted R^2	F	Sig			
1.86	0.038	0.014	1.568	.201			

Significance of F statistic indicates that the whole model is not significant. Finally, adjusted R^2 indicates that 0.014 of changes in firms value is explained by independent variable and control variables.

Sub-$H_{2\text{-}2}$: Earnings forecasts frequency has a significant effect on systematic risk of firms listed in TSE.

The results of this hypothesis are indicated in Table 5.

Considering significance of earning forecast frequency, it can be concluded that earnings forecast frequency has no significant effect on systematic risk of firms listed TSE. However, control variable of firm's size has a significant effect on firm's value while leverage does not. Durbin Watson statistic is between 1.7 and 2.2 showing that there is not an autocorrelation among regression residuals. Significance of F statistic indicates that the whole model is not significant. Finally, adjusted R^2 indicates that 0.006 of changes in firms value is explained by independent variable and control variables.

Sub-$H_{2\text{-}3}$:Frequency of earnings forecasts has a significant effect on unsystematic risk of firms listed in TSE.

The results of this hypothesis are indicated in Table 6.

Considering significance of earning forecast frequency, it can be concluded that earnings forecast frequency has a significant negative effect on unsystematic risk of firms listed TSE. However, control variables of firm's size have a significant effect on firm's value while leverage does not. Durbin Watson statistic is between 1.7 and 2.2 showing that there is not an autocorrelation among regression residuals. Significance of F statistic indicates that the whole model is significant. Finally, adjusted R^2 indicates that 0.142 of changes in firms value is explained by independent variable and control variables.

Sub-$H_{2\text{-}4}$: Earnings forecasts accurateness has a significant effect on unsystematic risk of firms listed in TSE.

The results of this hypothesis are indicated in Table 7.

Considering significance of earning forecast accurateness, it can be concluded that earnings forecasts accurateness has a significant positive effect on unsystematic risk of firms listed in TSE. However, control variables of firm's size have a significant effect on firm's value while leverage does not. Durbin Watson statistic is between 1.7 and 2.2 showing that there is not an autocorrelation among regression residuals. Significance of F statistic indicates that the whole model is significant. Finally, adjusted R^2 indicates that 0.126 of changes in firms value is explained by independent variable and control variables.

Table 5: 2-2 Hypothesis Test Results

	Unstandards coefficient		Standards coefficient	t	Sig.	Collinearity diagnosis	
	B	Standards error	β			Tolerance	VIF
C	12.32	6.620		1.862	.065		
Earning forecast frequency	.118	.494	.027	.238	.812	.613	1.632
leverage	-1.241	1.630	-.084	-.761	.448	.634	1.577
Firms size	-.958	.546	-.159	-1.755	.082	.940	1.064
Durbin Watson	R^2	AdjustedR^2	F	sig			
1.88	0.03	0.006	1.26	.288			

Table 6: 2-3 Hypothesis Test Results

	Unstandards coefficient		Standards coefficient	T	Sig.	Collinearity diagnosis	
	B	Standards error	β			Tolerance	VIF
C	151.949	38.487		3.948	.000		
Earning forecast frequency	6.695-	2.872	.244-	2.331	.021	.613	1.632
leverage	-10.782	9.475	-.117	-1.138	.257	.634	1.577
Firms size	-12.153	3.175	-.323	-3.827	.000	.940	1.064
Durbin Watson	R^2	AdjustedR^2	F	sig			
1.915	0.263	0.142	8.026	.000			

Table 7: 2-4 Hypothesis Test Results

	Unstandards coefficient		standards coefficient	T	Sig.	Collinearity diagnosis	
	B	Standards error	β			B	VIF
C	204.746	39.359		5.202	.000		
Earning forecast accurateness	.413	.010	-.121	-1.334	.0185	.873	1.146
leverage	-37.530	15.952	-.212	-2.353	.020	.883	1.132
Firms size	-12.059	3.227	-.323	-3.737	.000	.960	1.042
Durbin Watson	R^2	AdjustedR^2	F	sig			
1.815	0.147	0.126	6.841	.000			

DISCUSSION AND CONCLUSION

The aim of this study is to investigate the effect of earnings forecasts quality on risk taking and firm's value in firms listed in TSE. To do so, 135 firms listed in TSE are selected to be studied during the period from 2006 to 2012 using regression and correlation tests. Earnings forecasts quality is captured by two proxies of earnings forecast accurateness and earnings forecast frequency. In addition, risk is broken into systematic and unsystematic risk and firm's value is captured through Tobin's Q.

In this study, two main and six sub-hypotheses are developed. First main hypothesis hypothesize that earnings forecasts quality has a significant effect on firms value listed in TSE. To detail this hypothesis, earnings forecasts quality is broken into earnings forecasts accurateness and frequency of earnings forecasts. The results show that there is not a significant relationship between earnings forecasts accurateness and frequency of earnings forecasts with firm's value listed in TSE.These results are against the results of Foerster *et al*. (2010).

Second main hypothesis supposes that earnings forecasts quality has a significant effect on risk taking of firms listed in TSE. To securitize this hypothesis, earnings forecasts quality is broken into earnings forecasts accurateness and frequency of earnings forecasts and risk taking is broken into systematic and unsystematic risks. The results of regression between earnings forecasts accurateness and frequency of earnings forecasts with systematic risk show that there is not a significant relationship between them.These results are against the results of Foerster *et al*. (2010). In addition, the results of regression between earnings forecasts accurateness and frequency of earnings forecasts with unsystematic risk show frequency of earnings forecasts has a negative and earnings forecasts has a positive significant effect on unsystematic risk of firms listed in TSE. These results are consistent with the results of Foerster *et al*. (2010).

These results indicate that investors of TSE firms do not consider earnings forecast quality in their decision making and accurate and timeline information are not disclosed by information providers. This may affect unsystematic risk of firm and consequently may have a negative effect on firm's value because unsystematic risk is related to firms own characteristics.

However, it is suggested that in long run, managers may improve their earnings forecast to reduce the information asymmetry between insiders and outsiders which consequently improve investor's confidence on provided information and reduce unsystematic risk.

LIMITATION OF STUDY

Because of un-reassessment of firm's assets in TSE and tax regulations, stock market and book value in calculation of Tobin's Q may be deviated..

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