

Studying the Relationship between Asymmetric Timeliness and Type of Conservatism in Stock Exchange Accounting

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Abstract

The study examined the relationship between asymmetric timeliness and type of conservatism in stock exchange accounting. To this end, market to book relations vary due to a) reaction of profit to good news, b) reaction of profit to bad news, c) asymmetry timeliness of profit detection and e) how these relations vary simultaneously with periods used for estimation. For collecting information, this study has used data of a firm accepted in Tehran stock exchange during years 2001 to 2007. Two principles of synthetic data and multivariable linear regression models during one year, two year, three year periods has been used for analyzing the study data.

Key words: conservatism, market to book ratio (MTB), asymmetric timeliness

Introduction

Managers as a responsible person for preparing the financial statement with complete knowledge of firm's financial condition and more level of awareness than users of financial statement tries to represent the image of trade unit as desired as possible. For example maybe they settle the costs of a period as an asset, as a result they causes to decrease the costs and increase more profit in financial statements. Also it is possible to report assets and capital of a trade unit more than actual value. The final result of the action is that the image of trade unit seems better than real condition and motivation of people outside the organization to invest capital and financial resources will be increased. In such condition, conservatism concept is used for principles of accounting to support accounting standards setting bodies for equilibrating the manager's optimism, to represent financial statements and support the right of beneficiaries.

Conservatism is used for accountants as one of the limiting principles of accounting and despite many criticisms on it has always maintained its position among other accounting principles as that endurance and persistency of conservatism

against criticisms imposed on it during the successive years can be considered as a witness for basic element of the principle. Furthermore, conservatism can be called as a mechanism that if it conducts correctly, it will lead to solve many solutions and asymmetric information. Considering the importance of conservatism role, it seems that there is a need for its exact evaluation in financial reports (kordestani & Langarodi, 2008).

Basu (1997) represented a definition for conservatism: "tendency of accountant to obligate the higher degree of verifiability to recognize good news (profit) compared to bad news (loss)". Since annual efficiency represents good news during the year, this definition refers to the relationship between return and profit. Bauso in 1997 represented that based on the regression of annual profit to profit, profits to negative profit (bad news) shows more reaction than positive profit (good news). He called this different reaction as "asymmetric earnings timeliness" and it is used as a conservatism scale.

Recently, some of the researches doubt about the validity of asymmetric timeliness of profit recognition as the conservatism scale. This doubt

is formed from negative relationship observed among Basu scale and other conservatism scales especially regarding market to book ratio. MTB is one of the financial ratios. This ratio is a criterion for evaluating the created value for shareholders. This ratio that is the depended ratio to market value is obtained from division of stock market price into book ratio.

Many researchers try to describe the negative relationship, however, many of them have no idea to describe that why asymmetric timeliness of profit recognition is created and what is its relationship with MTB. Comprehension of relationship between asymmetric timeliness and MTB requires a theory of conservatism. This study aims to examine the relationship between asymmetric timeliness and type of conservatism in stock exchange accounting.

Literature

Tarig and Rashm (2011) examined the effect of conditional and unconditional conservatism on earning quality and stock prices in Egypt. Their findings showed: 1) conditional conservatism negatively affect earning quality and share price of Egyptian institutions, 2) unconditional conservatism has no effect on earning quality, however, it have negative effect on stock prices in Egyptian institutions.

Lara et al (2011) studied the effect of conditional conservatism and the firm value on capital cost of the firms. Their results represented that conditional conservatism has a meaningful and reverse relationship with cost of capital. They also found that without correct applying of conservatism in accounting, financial condition is done with less attention and it can causes more ambiguity, decrees of the firm value and increase of capital cost.

Jinhan et al in 2010 have conducted a study titled as “examining the link between earning conservatism and the price to book ratio”. They concluded that there is a reverse relationship between earning conservatism and the price to book ratio. Furthermore, there is no significant relationship between operating cash flow conservatism and changes of price- to- book ratio.

Lafond and Watss (2007) studied the role of conservatism. Their results showed that in the firms with higher PIN point (it means more information asymmetry), the low information about incomes and high information regarding loss in financial statement is reflected. Their findings represented that there is a relationship between high information asymmetry among investor outside the firm with managers and more conservatism about earning. So, increase of information asymmetry causes more conservatism. Generally, results of their study confirmed their hypothesis about this point that the conservatism is a stable response for investors to decrease the agency costs arising from information asymmetry between investors outside the organization and managers.

Lee in 2010 studied the role of conservatism on financial decision making of the firm. He believed that accounting conservatism affects the flexibility of the firm and it impact the financial decision making. There are 4 types of financial decision making contains: Maintained cash flow, sensitivity of cash flow changes to free cash flow, sensitivity of flow cash –investment and decision making of investors. The result also represented that the firms with high conservatism have low financial flexibility.

Chi and Wang in 2010 examined the relationship between information asymmetry and conservatism. They also represented that degree of conservatism accounting in various places of

the world is different. They found that there is a positive relationship between accounting conservatism and level of changes in information asymmetry. Their results were inconsistent with claims of FASB and JASB represented that the conservatism should be separated from quality features of information.

Artiach and Clarkson (2010) studied the effect of conservatism and revealing collectively and individually on capital cost. They with study on the united state company found that there is a reverse relationship between conservatism and capital cost; however, the issue in the environment with high conservatism is decreased. Their studies indicated the existence of positive economic results to applying the conservatism policies. In addition, they expressed that conservatism have a positive role in accounting principles even if the standard setting bodies do not observe the principle.

Joo Ann Ho (2009) examined the link between mechanisms if firms contain percent of manager's shares, separation of chairman of the board from chief executive officer and ratio of managers with conservatism in 716 Malaysia stock exchanges firms.

Watts (2003) believed that if a contract of the firm with other groups of investors is set, due to the contrast between managers and the groups, the managers of the company will try to change the condition in their interests. For example they may decrease the debt and increase the profit. In the meantime, conservatism is a effective contract conservatism that neutralizes the biased behavior of managers.

Research hypotheses

Considering the theories and existing literature, there for research in this study:

First hypothesis: reaction of earning to good news has a negative relationship with MTB ratio at the end of estimate period.

Second hypothesis: whatever the period of estimate becomes longer, the negative relationship between reaction of earning to good news and MTB ratio at the end of estimate period will be stronger.

Third hypothesis: whatever the period of estimate becomes longer, the negative relationship between reaction of earning to bad news and MTB ratio at the end of estimate period will be weaker.

Fourth hypothesis: whatever the period of estimate becomes longer, the positive relationship between asymmetric timeless of earning recognition and bad news at the end of estimate period will be stronger.

Statistical models of the study and definition of variable functions

After collecting and preparing the data of the study, at the first for having the overview of estimate results of Basu model in futuristic timeframe, the following model is estimated:

$$E_{t+1,t+k}/P_1 = \alpha + \eta DR_{t+1,t+k} + \beta R_{t+1,t+k} + \gamma R_{t+1,t+k} DR_{t+1,t+k} + \varepsilon_t \quad (1)$$

Then for testing first and second hypotheses, the following model is estimated by using synthesis data method:

$$E_{t+1,t+k}/P_1 = \alpha_0 + \alpha_1 MTB_RANK_t + \eta_0 DR_{t+1,t+k} + \eta_1 MTB_RANK_t DR_{t+1,t+k} + \beta_0 R_{t+1,t+k} + \beta_1 MTB_RANK_t R_{t+1,t+k} + \gamma_0 R_{t+1,t+k} DR_{t+1,t+k} + \gamma_1 MTB_RANK_t R_{t+1,t+k} DR_{t+1,t+k} + \varepsilon_t \quad (2)$$

In above models:

$E_{t+1,t+k}$ is accumulative earning from $t + 1$ to $t + k$ time frame that K changes from 1 to 3. $K=1$ shows $t+1$ year earning without accumulation.

$R_{t+1,t+k}$ represents a double dummy variable. If $R_{t+1,t+k}$ is negative, its value will equal to 1 otherwise it will equal to zero.

MTB_RANK is an ordinal variable constructed based on MTB of each firm at the end of t year. In every year, the firms are arranged into 5 classes. The firms with low MTB give lower rank and the firms with high MTB take higher rank.

Since in the model, earning and yield for future years and MTB_RANK_t variable play the role of MTB at the first of each period. Based on the first hypothesis, it is expected that in model 2 for all time, $MTB_RANK_t R_{t+1,t+k}$ variable coefficient is negative and significant.

In second stage, for having an overview of estimate results, Basu model in previous time frame orientation is represented:

$$E_{t-j,t}/P_{t-j-1} = \alpha + \eta DR_{t-j,t} + \beta R_{t-j,t} + \gamma R_{t-j,t} DR_{t-j,t} + \varepsilon_t \quad (3)$$

For testing third to sixth hypotheses, the following model is estimated:

$$E_{t-j,t}/P_{t-j-1} = \alpha_0 + \alpha_1 MTB_RANK_t + \eta_0 DR_{t-j,t} + \eta_1 MTB_RANK_t DR_{t-j,t} + \beta_0 R_{t-j,t} + \beta_1 MTB_RANK_t R_{t-j,t} + \gamma_0 R_{t-j,t} DR_{t-j,t} + \gamma_1 MTB_RANK_t R_{t-j,t} DR_{t-j,t} + \varepsilon_t \quad (4)$$

Where, $E_{t-j,t}$ is accumulative earning from $t-j$ to t interval that j is variant from 0 to 4. $J=0$ represents E_t .

$R_{t-j,t}$ is accumulative stock return and rest of the variables is defined such variable of model 2.

Since in this model, earning and return for previous year and MTB_RANK_t variable for current year is considered, MTB_RANK_t variable plays the role of market to book ratio at the end of the period. Based on the third hypothesis, it is expected that in model 4, $MTB_RANK_t R_{t-j,t}$ β_1 variable coefficient for all time is negative and significant. Furthermore, based on fourth hypothesis, it is expected that for longer time interval, the value of $MTB_RANK_t R_{t-j,t}$ β_1 variable coefficient is more negative. Fifth hypothesis forecasts that in longer time interval, total number of variable coefficients of $MTB_RANK_t R_{t-j,t}$ and $MTB_RANK_t R_{t-j,t} DR_{t-j,t}$ $\beta_1 + \gamma_1$ is also more negative. The final hypothesis forecasts that in longer time intervals, the variable coefficient values of $MTB_RANK_t R_{t-j,t} DR_{t-j,t}$ are more positive.

Methodology:

In the study, collecting the information has been done in two stages. In first stage for collecting theoretical bases, the library method was used and in second stage for collecting the data, financial statements, information represented in stock exchange and other information resources such as database has been used. For analyzing the study data, descriptive statistics, Pearson correlation coefficient, linear regression with synthesis data and real-time trading system with synthesis data have been used. The collected data were entered in Excel software and the necessary adjustment and information were conducted over them. The necessary variables were extracted from them and they were entered into Eviews 67 software for analyzing.

Testing first to forth hypotheses:

At first for having an overview from estimate results of Basu model in futuristic time interval,

the model 3 with synthesis data approach was estimated and the results of estimate has been represented in table 1. Significant level of Limir statistic and lake of significant Hausman statistics are represented in the first 2 columns (5.49, 7.91) and in mentioned 2 columns (1.51, 4.46), respectively. Significant level of Limir statistics and significant Hausman statistics in level of 5% shows that model 3 in third columns is estimated by using fixed effect approach. Lake of significant Limer statistics in previous 2 columns

(0.36, 0.17) also represents that model 3 related to the column has been estimated by using bound approach.

The represented results show that a y-intercept of all columns is significant at 1%. Variable coefficient ($DR_{t+1,t+k}$) is significant and negative only in first 2 columns (-0.0891, -0.0497). Variable coefficient $R_{t+1,t+k}$ is positive and significant at 1%. Te recent results confirms with Basu's findings.

Table 1- The estimated results of model (3)

$j=4$	$j=3$	$j=2$	$j=1$	$j=0$	Variables/models
0/3874	0/4931	0/3948	0/3237	0/1714	y-intercept
(4/00)**	(9/18)**	(12/16)**	(6/89)**	(10/39)**	
-0/0557	-0/0423	-0/0433	-0/0891	-0/0497	
(-0/23)	(-0/36)	(-0/62)	(-2/13)*	(-2/58)**	
0/6697	0/4237	0/3347	0/1810	0/0825	
(14/59)**	(13/65)**	(15/73)**	(10/81)**	(6/85)**	
-0/6698	-0/0785	-0/019	0/2193	0/1732	
(-1/59)	(-0/42)	(-0/15)	(2/46)*	(3/26)**	
-0/0001	0/3452	0/3157	0/4003	0/2557	
(0/00)	(1/87)*	(2/52)**	(4/57)**	(4/93)**	
0/2460	0/0890	0/1537	0/0985		Difference in β in comparison to the previous column
(80/19)**	(62/91)**	(209/81)**	(232/92)**		
-0/5913	-0/0595	-0/2383	0/0461		Difference in γ in comparison to the previous column
(-2/78)**	(-1/16)	(-9/88)**	(4/29)**		
-0/3453	0/0295	-0/0846	0/1446		Difference in $\beta + \gamma$ in comparison to the previous column
(-1/65)	(0/59)	(-3/61)**	(13/96)**		

37/52%	30/52%	32/62%	22/31%	12/30%	Adjusted R square
87/49**	93/11**	59/61**	109/95**	68/98**	Fisher statistics (significant)
(0/00)	(0/00)	(0/00)	(0/00)	(0/00)	
0/36	0/17	2/53*	7/91**	5/49**	F statistic of Limer (significance)
(0/70)	(0/92)	(0/04)	(0/00)	(0/00)	
---	---	10/06*	1/51	4/46	Hausman statistic (significance)
		(0/02)	(0/68)	(0/21)	

*and ** significance at the level of 1% and 5%

Note: In the first section, numbers in the parentheses are the statistics of t student and in the lower section the numbers in the parentheses are significance levels.

Variable coefficient $R_{t+1,t+k}DR_{t+1,t+k}$ only is positive and significant in first 2 columns and it agrees with Basu's findings, however, in the other column, the agreement is not seen. Coefficient related to bad news ($\beta + \gamma$) only is positive and significant in first 4 columns and it is in conformity with Basu's idea, however, in previous columns there is not the conformity. In addition, the results show that there is a difference in variable coefficient $R_{t+1,t+k}$ in each column in the proportion of the previous column. However, there is a significant difference in variable coefficient $R_{t+1,t+k}DR_{t+1,t+k}$ and coefficient related to bad news ($\beta + \gamma$) in some columns rather compared to the previous column.

In the following, for testing first to fourth hypotheses of the study, model 4 was estimated by using synthesis data. In addition, results of the model have been represented in table 2. The results of estimate pattern selection test represent that model 4 from first to fourth columns and from fourth to fifth columns have been estimated by using fixed effect approach and bound approach, respectively. The represented results shows that

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y- intercept from source of first 4 columns (0.2063, 0.4352, 0.6936, 0.6793) is at 1% significant level. X- Intercept and previous column (0.4772) is 5% level significant. Variable coefficient MTB_RANK_t only is significant from second to fourth columns (- 0.0414, 0.1019, 0.0831). Variables coefficient, $MTB_RANK_t * DR_{t-j,t}$ is not significant in any column. Variable coefficient $R_{t-j,t}$ is significant in all columns (0.0955, 0.3093, 0.4384, 0.7763 and 1.2563).by increasing the length of time interval, coefficient of the variable increases. Variable coefficient $MTB_RANK_t R_{t-j,t}$ from second to fifth columns is a negative number, however it is significant in fourth (- 0.0721) and fifth (-0.1287) column. Based on the first hypothesis, it was expected that all coefficients of column become negative and significant. Therefore, the presented result confirms first hypothesis. According to the second hypothesis, it was expected that by increasing the length of time interval, the value of variable coefficient $MTB_RANK_t R_{t-j,t}$ becomes more negative. The results show from first column to fifth column, the value of the

coefficient has been achieved from 0.0020 to -0.1287, so, the hypothesis is rejected.

Variable coefficient $R_{t-j,t}DR_{t-j,t}$ is only significant in first (0.3818), second (0.6700) and fifth (-1.6869) columns but it is not significant in other columns. Variable coefficient $MTB - RANK_t R_{t-j,t}DR_{t-j,t}$ is only negative and

significant in second (-0.1929) column. Based on the forth hypothesis, it was expected that by increasing the length of time interval, the value of the coefficient tends to a positive number. The results represent that the value of mentioned coefficient has reached from -0.0765 to 0.3163. It confirms the forth hypothesis.

Table 2: The estimated results of model (4)

market to book ratio and asymmetry timeliness in the pervious

<i>j=4</i>	<i>j=3</i>	<i>j=2</i>	<i>j=1</i>	<i>j=0</i>	Variables/models
0/4772	0/6793	0/6936	0/4352	0/2063	y-intercept
(1/98)*	(4/56)**	(7/84)**	(7/55)**	(6/91)**	
-0/0811	-0/0831	-0/1019	-0/0414	-0/0120	
(-1/15)	(-2/02)*	(-4/07)**	(-2/59)**	(-1/47)	
-0/3623	-0/0808	-0/1705	-0/0939	-0/0641	
(-0/67)	(-0/28)	(-1/02)	(-0/96)	(-1/33)	
0/1620	0/0297	0/0422	0/0038	0/0069	
(0/97)	(0/32)	(0/82)	(0/13)	(0/49)	
1/2563	0/7763	0/4384	0/3093	0/0955	
(8/58)**	(6/68)**	(5/89)**	(5/72)**	(2/19)*	
-0/1287	-0/0721	-0/0148	-0/0227	0/0020	
(-3/54)**	(-2/63)**	(-0/82)	(-1/74)	(0/19)	
-1/6869	-0/2392	0/2062	0/6700	0/3818	
(-2/02)*	(-0/60)	(0/77)	(3/52)**	(3/02)**	
0/3163	-0/0020	-0/1114	-0/1929	-0/0765	
(0/97)	(-0/01)	(-1/14)	(-3/13)**	(-1/92)	
0/1876	-0/0741	-0/1262	-0/2156	-0/0745	
(0/58)	(-0/50)	(-1/32)	(-3/59)**	(-1/93)*	

-0/0566	-0/0573	0/0079	-0/0247		Difference in β in comparison to the previous column
(-27/27)**	(-53/14)**	(15/82)**	(-88/94)**		
0/3183	0/1094	0/0815	-0/1164		Difference in γ in comparison to the previous column
(2/47)**	(3/38)**	(6/15)**	(-21/61)**		
0/2617	0/0521	0/0894	-0/1411		Difference in $\beta + \gamma$ in comparison to the previous column
(2/07)*	(1/67)	(7/00)**	(-27/63)**		
41/14%	34/99%	36/82%	30/96%	17/19%	Adjusted R square
48/19**	48/13**	44/99**	41/54**	22/96**	Fisher statistics (significant)
(0/00)	(0/00)	(0/00)	(0/00)	(0/00)	
0/40	0/24	2/37*	9/71**	5/39**	F statistic of Limer (significance)
(0/67)	(0/86)	(0/05)	(0/00)	(0/00)	
					Hausma statistic (significance)

*and ** significance at the level of 1% and 5%

Note 1: In the first section, numbers in the parentheses are the statistics of t student and in the lower section the numbers in the parentheses are significance levels.

Note 2: Limer statistics shows that in first to third columns, fixed effects model is prior compared to bound model. Since in estimator between samples, the number of sections is more than the number of coefficient, this model cannot be estimated by using randomly effects approach. Therefore, fixed effects approach is selected for estimating the model. In the next two columns, Limer statistic represents that the model should be estimated by using bound estimate.

The third hypothesis forecasted that whatever time interval becomes longer, the coefficient related to bad news ($\beta_1 + \gamma_1$) tends to positive number or zero (non-significant). The results represents that coefficient of the value from first column (-0.0745) has increased to the previous column (0.1876) which is not significant. It has compatibility with forecast of third hypothesis.

The results of three remained rows study the significant level of coefficient difference β_1 , γ_1 and $\beta_1 + \gamma_1$ in each column compared to the previous column. The results from the rows show that there is a significant difference between mentioned coefficients in each column compared

to the previous column. Adjusted R square also demonstrate that independent variables from first to fifth columns that determines the dependent variables are 17%, 31%, 37%, 35% and 41%, respectively. Statistical significant of Fisher's statistics also represents the overall significant of the model.

Discussion and conclusion:

The analysis of first hypothesis testing results: the first hypothesis examines the relationship between reaction of earning to good news and MTB at the end of the estimate period. The

expectation is that the mentioned relationship will be negative. The results of the hypothesis testing demonstrates that coefficient related to good news considering the MTB at the end of estimate period is only significant and negative in some examined periods. Therefore, first hypothesis is weakly accepted.

The analysis of second hypothesis testing results: the second hypothesis of the study shows that whatever the estimate period become longer, the negative relationship between reaction of earning to good news and MTB ratio at the end of estimate period will be stronger. The results of hypothesis testing represent that by increasing the length of time interval, the value of coefficient related to reaction of earning toward good news considering MTB ratio will be more negative. Therefore, the second hypothesis is not rejected since they are consistent with the results of Watts's research (2007).

The analysis of third hypothesis testing results: based on the third hypothesis, whatever the estimate period becomes longer, the negative relationship between reaction of earning toward bad news and MTB ratio at the end of estimate period will be weaker. The results of the hypothesis show that coefficient related to bad news has increased from a negative number to a positive number that has in conformity with forecasting of third hypothesis.

The analysis of third hypothesis testing results: based on the fourth hypothesis, whatever the estimate period becomes longer, the positive relationship between asymmetric time of identifying earnings and MTB ratio at the end of estimate period will be stronger. The results of the hypothesis testing represent that the coefficient related to asymmetric time of identifying earnings considering MTB ratio at the end of estimate period tends to a positive number that it represents a weak evidence of a failure to

reject the fourth hypothesis. The results of the hypothesis are consistent with the results of Watts's research (2007).

Suggestions for future research

- 1- In the present study, Basu model has been used and it is suggested that in future researches that other models will be used for examining the conservatism.
- 2- In the future research, it is suggested to examine the relationship between conservatism and other measurement criteria.

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