Prior Period Adjustments and Information Asymmetry: The Case of Iran

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Abstract: This study investigates the relationship between prior period adjustments and information asymmetry. The prior period adjustments are used in the financial statements. However, their possible role in diminishing information asymmetry is not clear. The main purpose of this study is to examine whether information asymmetry among investors is affected by companies' prior period adjustments. In order to accomplish this aim, prior period adjustments are obtained from statement retained earnings (losses) and information asymmetry is measured by spread. Financial statements of 62 firm listed in Tehran Stock Exchange in period 2007-2014 are investigated. The findings indicate that there is no significant relationship between information asymmetry at a particular period and prior period adjustments of the next period. Furthermore, study results show that the level of information asymmetry doesn't change in proportional to the changes of prior period adjustments. These findings can contribute to understanding of the nature of prior period adjustments of financial statements.

Key words: Prior period adjustments, information asymmetry, informed investors and uninformed investors, investigates, diminishing

INTRODUCTION

Prior period adjustments (hereafter PPA), refers to adjusting accumulated income (loss) of beginning of the year and restatement of comparative items of financial statements for last year(s). PPA is arising from: change in accounting procedure (policy) or prior period errors (IAS, 8).

The primary explanation offered by management for the use of PPA is to better reflect the investment and operating environment of the firm. This common justification by management is consistent with the tenor of accounting standards that allows for PPA.

Holthausen and Leftwich (1983) and Healy and Palepu (1993) suggest that discretion over accounting methods enables managers to convey more value-relevant information to the market. However, PPA decreases the consistency in financial reporting and may impede a user's ability to accurately assess a firm's financial performance relative to prior years. Furthermore, skeptics maintain that managers use such discretion over accounting methods to manipulate earnings to influence contractual agreements or the value of equity securities (Fields *et al.*, 2001). Dharan and Lev (1993) use a "buy and hold" strategy for firms that engage in changes in accounting principles and estimates. This strategy results in a negative return over a 5 years holding period. Researchers interpret their findings as evidence that accounting changes portend poor future performance.

Bishop and Eccher provides a direct test of investor valuation of accounting changes in the years subsequent to the change. They regress returns on earnings components to assess how investors value these changes in the year they occur and the subsequent 2 years. Results suggest that investors: discount the positive effect of useful life increases in the year of the revision, value the negative effects of useful life decreases in the year of the revision and consider the earnings effect of these accounting changes when valuing the firm in subsequent years. Hodge examine how an audit qualification of an accounting change affects investor assessments of the firm's current and future financial performance and the representational faithfulness of the change. They investigate this issue for income-increasing and income-decreasing accounting changes and across four apparent reporting strategies: reporting aggressively,

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taking a bath, creating hidden reserves and employing no apparent strategy. Their results show that when an income-increasing accounting change is qualified, investors decrease their assessments of current and future financial performance and when an income-decreasing accounting change is qualified, investors' assessments of financial performance are either unaffected or decreased depending on the apparent reporting strategy. They also find evidence that assessments of representational faithfulness relate positively (negatively) to assessments of financial performance when accounting changes are income increasing (decreasing) and under all conditions qualifications reduce investor assessments of representational faithfulness.

Hossein (2004) examined the relation between PPA, stock price, size and life period of the firms listed in Tehran Stock Exchange. His findings indicate a positive relationship between PPA and stock price and also the size of the firm but do not confirm the relationship between PPA and life period of the firms. Azad and Kazemi and Moshir Fatemi show that financial statements of the majority of firms listed in Tehran Stock Exchange have PPA. Abdollah and Mahboobeh (2011) investigate the materiality of PPA in financial statements of the companies listed in Tehran Stock Exchange. Their empirical findings indicate that amount of PPA is grater than materiality threshold at overall prior period financial statements. Therefore, awareness of financial statements users from effects of PPA can influence their decisions. Existence of PPA in financial statements may signal that financial statements in prior periods were unreliable and misleading.

In addition, PPA can create Information Asymmetry (hereafter IA) between informed and uninformed investors. Informed investors are likely to are corporate insiders such as managers and directors and analysts' and institutions given information by those insiders (Easley and O'Hara, 2004). Like IA in contracts, IA between informed and uninformed equity investors creates deadweight losses (agency costs) that reduce the firm's expected cash flows (Watts, 2003) and increases the equilibrium return on the firm's equity (Easley *et al.*, 2002; Easley and O'Hara, 2004). Both effects reduce firm value.

Much of the IA arises from the nature of the firm's investment opportunity set, particularly, the extent to which the firm has growth options but some also comes from the way in which the management formally collects and reports information. Greater information asymmetries from growth options give managers more opportunities to manipulate financial statements to transfer wealth to themselves via insider trading and excess stock price based compensation (Corwin and Schultz, 2012). Those attempts are costly because they divert management's efforts from maximizing firm value and so generate agency costs just as attempts by managers to transfer wealth from other parties to debt and compensation contracts generate agency costs (Jensen and Meckling, 1976).

Security markets tend to anticipate the agency costs and reduce share price. This reduction in share value gives the management the incentive to reduce IA and the consequent agency costs. Given that managers liability is effectively limited, the manager is motivated to overstate performance and stock prices during his tenure and transfer resources from both shareholders and lenders (Kim *et al.*, 2013). The results by Abdollah and Mahboobeh (2011) research showed that most companies they investigate, overstated the income of per financial period and then tried to neutralize those overstatements by using negative PPA. This result indicates financial number game and earning management that consistent with manager's motivation.

Existence of PPA in the annual financial statements indicates that a part of relevant accounting information is not reflected in financial statements of prior periods. Thus, insider information can be used to increase IA and reduce uninformed investors return.

Considering what was said, we predict there is a positive relation between PPA and IA and PPA changes lead to IA changes. Therefore, the following hypotheses are posed.

Hypotheses: PPA is not reflected in prior period financial statements; therefore, it creates IA between managers, inside and outside investors. This reasoning provides us with two hypotheses:

- H_1: the larger the PPA in the firm's financial statements, the more the IA between informed and uninformed investors
- H_2: changes in PPA lead to the same changes in IA

MATERIALS AND METHODS

Research design

Prior period adjustments: According to the accounting standards, PPA, means adjusting accumulated income (loss) of beginning of the year and restatement of comparative items of prior period(s) financial statements of firms. PPA is arising from changes accounting procedures (policies) and error correction. In other words, existence of PPA means:

- A company has adopted a new accounting procedure due to its predominance over the past procedure in terms of providing a desirable form of financial statements of company, a change in accounting procedures is justifiable or changes are required by new accounting standards or law
- During the current period, mistakes about one or more of the previous fiscal period financial statements have been discovered. Such errors include mathematical mistakes, mistakes in applying accounting principles, oversight or misuse of available facts use of unacceptable GAAP and fraud

In accordance with accounting standards, the effect of PPA should be reflected by correction of accumulated income (loss) of the beginning of the year. Comparative items of last year(s) financial statements should be represented, unless this is not practical; in such circumstances the issue should be disclosed in the explanatory notes. We measure PPA by obtain it from retained earnings (losses) statement.

Information asymmetry measure: To test our hypotheses we require a measure of IA between informed and uninformed equity investors. In prior researches (Butler *et al.*, 2007; Leuz and Verrecchia, 2000), bid-ask spread (SPREAD), share turnover and stock return volatility are used as proxies for information symmetry. The first measure which is the bid-ask spread is a common measure for IA. The higher the IA, the wider the spread to cover the higher expected losses incurred by market makers when they trade with insiders.

The second measure is the median daily share turnover (the value of shares traded scaled by the firm's market value of equity) for the year. Turnover indicates investors' willingness to trade which is negatively related to IA.

The third measure is stock return volatility, computed as the standard deviation of firms' daily returns over a year (Dhaliwal *et al.*, 2012). To the extent that smooth movements in share prices suggest the absence of disagreement between the firm and shareholders or among investors, low levels of volatility suggest lower information asymmetries.

As Balakrishnan *et al.* (2014) and Butler *et al.* (2007) argued, among the three, the bid-ask spread is the most reliable measure of IA. Share turnover is less reliable because it's affected by factors unrelated to information such as portfolio rebalancing, liquidity shocks and changes in risk preferences. Return volatility is the least reliable measure because it is affected by many factors unrelated to IA.

IA between security traders affects security prices. This hypothesis goes back at least to Jack Treynor (Bagehot, 1971) who suggests information-based trading affects the spread between bid and ask prices offered by market specialists. The greater the relative private information, the larger the bid-ask spread and the lower the returns to investors without private information in particular non-insiders and the higher the equilibrium required returns on the stock (Amihud and Mendelson, 1986; Lafond and Watts, 2008). In addition prior studies such as Venkatesh and Chiang (1986), Muller III and Riedl (2002), Butler *et al.* (2007), Armstrong *et al.* (2011, 2015), Ahmad and Amir (2007) and Rezazadeh and Abdollah (2009) have shown that increasing IA among security traders expand the spread.

Spread is a function of the abnormal order flow. The underlying assumption is that public information is directly incorporated in prices because the market maker would move prices to the appropriate level at the time of the information and there would not be any trading activity. Private information generates excess buying or excess selling pressure (abnormal order flow) depending on the nature of the information. On a day in which bad private information arrives there are more sell orders than buy orders and conversely on good private information day there are more buy orders than sell orders (Lafond and Watts, 2008). We measured the spread by:

$$SPREAD_{it} = 2 \times \left[\frac{AP\text{-}BP}{AP\text{+}BP} \right] \times 100 \qquad (1)$$

Where:
SPREAD = Information asymmetry, measured as average of bid-ask spread (absolute spread divided by the sum of average bid and ask price) in a year
AP = Ask Price
BP = Bid Price

Model specification: Equation 2 determines the relation between PPA and IA, so we use that to test the first hypothesis:

$$SPREAD_{it\text{-}1} = \alpha + \beta_1 DPPA_{it} + \beta_2 SIZE_{it} + \beta_3 MB_{it} + \varepsilon \qquad (2)$$

Where:
SPREAD$_{it\text{-}1}$ = Information asymmetry, measured as average of bid-ask spread of the previous year
DPPA$_{it}$ = Absolute PPA divided by absolute accumulated income (loss) of the beginning of fiscal year
SIZE$_{it}$ = Control variable of firm size which calculated as follows:

$$SIZE_{it} = \ln Assets_{it} \qquad (3)$$

MB_{it} is a control variable that represents growth and is calculated as follows:

$$MB_{it} = \frac{Market\ value\ of\ equity}{Book\ value\ of\ equity} \qquad (4)$$

First hypothesis states that high PPA corresponds high level of information that was not reflected in the financial statements of prior periods and so the grater the IA between informed and uninformed investors. Therefore, the statistical hypothesis is the following:

$$H_0 = \beta_1 \leq 0$$

$$H_1 = \beta_1 > 0$$

Equation 5 determines the relation between ΔPPA and ΔIA, so we use that to test the second hypothesis:

$$\Delta SPREAD_{it\text{-}x} = \alpha + \beta_1 \Delta DPPA_{it\text{-}x} + \beta_2 SIZE_{it} + \beta_3 MB_{it} + \varepsilon \qquad (5)$$

Where:
$\Delta SPREAD_{it\text{-}x}$ = Changes in SPREAD during the t and t-x
x   = Equals 1 or 2
t   = The tested year

For example :

$$\Delta SPREAD_{2003} = SPREAD_{2003} \text{-} SPREAD_{2002} \qquad (6)$$

Where:
$\Delta DPPA_t$ = Changes in DPPA during the t and t-x
x   = Equals 0 or 1
t   = The tested year

For example:

$$\Delta DPPA_{2003} = \Delta DPPA_{2003} \text{-} \Delta DPPA_{2002} \qquad (7)$$

According to the rationalities, the statistical expression of the second hypothesis is the following:

$$H_0 = \beta_1 \leq 0; \; H_1 = \beta_1 > 0$$

Sample and data collection: To collect the sample, we start with all Tehran Stock Exchange firms in any year from 2007-2014. This period of time is chosen because the data needed to calculate SPREAD before 2007 is not available. The main reason for using the firms listed in Tehran Stock Exchange is that the bid and ask prices had been recorded by brokers.

Statistical sample include 62 firms or 372 Observations. Sample selection criteria are: firms exist at the Tehran Stock Exchange list from beginning of 2007 to the end of 2014; firms stocks traded during the period and its trades is not interrupted over the 6 months; the financial period of firms is not changed and the bid and ask prices are available.

RESULTS AND DISCUSSION

Descriptive statistics: Table 1 shows the mean of spread is 0.1672 for 372 observations. It shows the existence of IA between investors. The mean for ΔSPREAD is 0.452 that shows the variation of IA. The minimum and maximum of ΔSPREAD are 0.71 and 1.11 that indicates the growth of IA between investors. The mean of DPPA and ΔDPPA are 2.017 and 0.0452, respectively that shows the growth of PPA.

First hypothesis test results: Using 372 observations Eq. 2 is run to test the first hypothesis. Table 2 reports the regression results with spread as the dependent variable. Table 2 shows that there is positive relationship between SPREAD and DPPA but it is not significant; so the first hypothesis was not accepted. F-statistic equals 5.492 at 0.001 significant level. Therefore, the regression model is significant at 99% level. Coefficient of determination equals the 0.043 which shows that the regression line represents approximately 0.4% of changes in IA. Durbin-Watson statistic is equal to 1.69. When Durbin-Watson statistic is close to 2 it can be said that there is no auto-correlation.

The findings indicate that the PPA doesn't create IA between informed and uninformed investors. In addition, the positive MB coefficient indicates the relationship between IA and firm growth therefore the relationship between IA and MB robust the existents of IA in Tehran Stocks Exchange.

Second hypothesis test results: We use the equation 5 for 310 observations to test the second hypothesis. Table 3

Table 1: Descriptive statistics

Variables	n	Mean	Minimum	Maximum	SD
SPREAD	372	0.1672	0.00	1.46	0.2235
DPPA	372	2.0166	0.00	59.93	7.2325
SIZE	372	11.8857	0.58	42.05	4.2388
MB	372	3.5112	-67.83	42.05	6.8373
ΔSPREAD	310	0.0452	-0.71	1.11	0.2461
ΔDPPA	310	0.2850	-96.67	165.09	16.1680

Table 2: The relation between SPREAD and PPA

Variables	Beta	Predicted Sign.	t-values	p-values
α	-		3.48	0.001
DPPA	0.069	+	1.35	0.179
SIZE	0.102		1.98	0.048
MB	-0.176		-3.37	0.001

$R^2 = 0.043$; $F = 5.492$; Adjusted $R^2 = 0.035$; Sig. = 0.001; Durbin-Watson = 1.687

Table 3: The relation between ΔSPREAD and ΔPPA

Variables	Beta	Predicted Sign.	t-values	p-values
α			0.648	0.518
ΔDPPA	0.099	+	1.741	0.083
SIZE	0.018		0.316	0.752
MB	0.072		1.251	0.212

$R^2 = 0.015$; F = 1.6; Adjusted $R^2 = 0.006$; Sig. = 0.18; Durbin-Watson = 1.712

reports the regression results with ΔSPREAD as dependent variable. Table 3 shows there is positive relationship between ΔSPREAD and ΔDPPA but it is not significant; so the second hypothesis was not accepted. F statistic equals the 1.6 and its significant level is 0.18 and so, it shows the regression model isn't significant at 95% level. Coefficient of determination equals the 0.015 which shows that the regression line represents approximately 1.5% of changes in IA. Durbin-Watson statistic equivalent of 1.71 and when this number is closer to 2 there is no auto-correlation.

The findings show that change in IA between informed and uninformed investors was not affected by ΔPPA.

CONCLUSION

In this study, we investigate the effect of PPA on IA between informed and uninformed investors in Tehran Stocks Exchange. The results show that there is positive relation between IA at a particular period and PPA of the next period but this relation was not significant. In other words, it can be said there is not higher IA between equity investors of the firms with larger PPA. Furthermore, study results suggest that the changes in IA were not affected by ΔPPA so, the level of IA doesn't change in proportional to the changes of PPA.

The findings confirm that PPA exists; meaning that some of financial information was not stated in prior period but the range of IA between informed and uninformed investors has not expanded. We argued that existence of PPA lead to IA but the findings doesn't confirm that. This might be due to the nature of PPA in Iran and also due to existence of other sources of information. Many of Iranian firms have adjustments of prior period taxes in PPA. Most of financial statement users know that the tax determination process is so long and it takes >1 year. Informed and uninformed equity investors in Tehran Stocks Exchange do not have enough information about the final amount of the tax; because it depends on tax office's opinion. Thus, tax adjustments don't affect the IA.

Furthermore, existence of PPA in financial statements means that the income of prior period was not fairly stated. Thus, important decision making indexes such as EPS and hence PE and other financial ratios were misleading for uninformed users. Consequently, informed users would have opportunity to use insider information. This increases the uncertainty, creating doubts about the reliability of financial statements and so making incentives for finding a more reliable source of information, increasing losses due to adverse selection and ultimately shareholder rights will be violated. Furthermore, results show that there is a positive and significant relation between IA and the ratio of market to book value of equity (MB). This ratio represents the IA arising from the growth opportunities. This result, confirm the existence of IA in Tehran Stocks Exchange and robust the results of research.

The results by Abdollah and Mahboobeh (2011) research showed that most Iranian companies, overstated the income of per financial period and then, tried to neutralize those overstatements by using negative PPA. On the other hand, Rezazadeh and Abdollah (2009) findings emphasized the importance conservatism as qualitative characteristics of financial information and its role in reducing the IA among investors and also explained the role of conservative financial statements in reducing IA between equity investors. Thus, conservatism may reduce the abovementioned effects of PPA.

The above results may be useful for research about the consequences of PPA, information content of PPA, relationship between changes in PPA and conservatism, review of relationship between PPA and stock returns, review of relationship between PPA and earnings management, review of nature and composition of the main items of PPA, review of reliability of financial statements using the prior period errors and review of audit effectiveness including topics that could complete our knowledge about the effects of prior period adjustment.

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