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# Persistence of earnings and prediction of future cash flows: the role of timely recognition of bad news

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## Abstract

Timely recognition of losses and expenses compared to revenues and increased values precipitates future expenses to match with current revenues. Thus, timely recognition of losses acts to reduce the persistence of earnings. However, it is expected that a more timely recognition of negative cash flows, as bad news, increase the power of earnings for predicting future cash flows. This study investigates the effects of the timely recognition of bad news (loss) versus the good news on the decrease of the persistence of earnings, and the effect of negative cash flows on forecasting future cash flows. In this study, two pooling type models and a panel type model have been used to estimate the persistence of earnings and cash flows. Seventy eight firms that were listed in the Tehran Stock Exchange during the period 2003–2010 were duly reviewed. The results of this research proved that the timely recognition of loss does not affect the persistence and the power of earnings for the purpose of forecasting future cash flows. The findings imply that conservatism does not distort persistence of earnings.

## Introduction

The concept of conservatism in accounting is determined by two criteria:

1.  The market to book value ratio (conservative balance sheet criterion)
2.  The asymmetric timely recognition of earnings (conservative gain and loss criterion).

The asymmetric timely recognition of earnings were first introduced by Basu (1997) to mean that the expenses and reduced values (bad news) are quickly recognized and reflected in earnings, while the recognition of revenues and increased values (good news) is generally delayed, due to its adherence to a more stringent verification criteria. Basu considers conservatism as a tendency to lean to-

wards a higher degree of verification in order to recognize good news compared to the bad ones (Basu 1997).

This interpretation of conservatism favors bad news over good. For example, the unrealized losses are typically recognized at a quicker pace compared to unrealized earnings. This acceleration in the recognition of losses, compared to the postponed recognition of earnings, is in accordance with the principles of conservatism. This is reflected in the case where a company receives news that will lead to a change in its estimation of the assets' useful life. If the new estimated lifetime is longer (good news), the company will be economically prosperous, but under the historical cost accounting principle, no earnings are currently recorded. Instead, the depreciation charges assigned to the current and remaining periods of the useful life would decrease. If the new estimated useful lifetime were shorter (bad news), the depreciation charges would

increase well over the remaining useful life of the asset. However, since this news precipitates an economic shock that will inevitably reduce the assets' value, the accounting principles prescribe a rapid recognition of such losses. Consequently, the earnings of the current period will sharply decline, but will not significantly affect future annual earnings (Kumhof et al. 2012). This example is indicative of the concept of "more timely response to bad news than good news" and "higher persistence of its positive changes than negative changes". Such concept decreases the persistence of earnings. The aim of this research is to measure the effect of timely response to bad news on persistence of earnings and prediction of cash flows.

# 1. The impact of timely recognition of bad news on the persistence of earnings

The persistence of earnings is considered as a quality that is characteristic of the accounting earnings, based upon the accounting data that helps investors assess both the company's future earnings and its cash flow. In their estimation, investors emphasize the persistent over the non-persistent part of earnings (Francis and Martin 2010; Francis et al. 2004).

Basu (1997) predicts that conservatism reduces the persistence of earnings during periods of bad news. The reason is that the accounting earnings will recognize bad news at a quicker pace compared to good news; which makes the persistence of earnings during the bad news periods lower. In other words, it can be said that the accounting earnings immediately recognizes and reflects negative changes such as losses, and reduced values during the current period; but it delays recognition of the positive numbers, such as earnings and increase in values, and postpones them to the future periods; consistent with the principle of conservatism (Chen et al. 2013).

The main basis of this hypothesis is that due to a more timely recognition of losses and expenses compared to revenues and increased values, conservatism aligns future charges with the current earnings, which is inconsistent with the matching principle, and ultimately leads to chaos in the accounting earnings and a reduced persistence. For example, a project with a negative NPV is going to be implemented. A conservative company would recognize and record the results of the project prior to its implementation, which speeds up the recognition of losses, leading to the matching of future expenses to current revenues and the reduction in the persistence of earnings.

Taking into account two companies, where one of them behaves conservatively, while the other does not. The former takes the research and development expenses as its business expenses, while the latter regard it as assets (Ahmed and Duellman 2013). As a matter of fact, the latter took into account the annual depreciation expenses in its calculation of earnings, but the former incorporates the cost of research and development expenses in its calculations; therefore, it is bound to report lower earnings, and

concurrently, its conservatism will decrease the persistence of earnings, and vice versa (Ahmed and Duellman 2013).

Jarva (2010) considers the reduction of earnings that is due to accruals. In fact, he believes that the quicker recognition of bad news compared to that of good news via accruals results in a lower persistence of earnings, which he considers the asymmetric timely recognition of accruals. The reason of this asymmetric recognition via accruals is associated with the accrual system's features, due to the fact that in the accrual system, the recognition time of both revenues and expenses is highly controlled by the managers. They are free to accelerate the recognition of expenses and reduced values, and also postpone the recognition of revenues and increased values. Therefore, the timely recognition of bad news will decrease the persistence of earnings (Jarva 2010: 17).

# 2. The impact of timely loss recognition on prediction of future cash flow

Ball and Shivakumar (2006) found that the timely loss recognition (negative cash flow) increases the power of earnings in predicting future cash flow. They suggest that a more timely reaction of accounting earnings against bad news (negative cash flow) compared to good news (positive cash flow) – introduced as asymmetric timely earnings recognition – can help the accounting earnings predict the future cash flow. Accordingly, they predicted the future cash flow; once based on the cash flow and the accruals of the current and previous year, and once based on the asymmetric timely recognition criterion. They used positive and negative cash flows as good and bad news, respectively (Ball and Shivakumar 2006: 33).

This hypothesis is based on the criterion of asymmetric timely earnings recognition that was introduced by Basu in 1997, suggesting that bad news is quickly recognized in current period, but the recognition of good news requires a higher degree of verification, which is inevitably postponed to the future. A more timely recognition of bad news i.e. the current negative operating cash flow, indicative of conservative behavior, renders the predictions of future cash flow more realistic and reliable; thus, it is expected that a timely loss recognition (negative cash flow) increases the power of earnings in predicting future cash flows, and finally enables investors and other users to accurately measure the true value of the company and adopt more favorable decisions, based on the projected cash flow. The present study examines the impact of timely loss recognition on the future cash flow prediction (Ball and Shivakumar 2006: 33).

# 3. Literature review

In the conservatism literature, the timely loss recognition is considered as an important property for accounting. Companies can utilize the timely loss recognition as a

controlling factor of management performance (Francis and Martin 2010: 1). Since the managers, as the controllers of financial statements is biased towards a more favorable financial situation, timely loss recognition can act as a preventive mechanism, which tempers the over-optimism in managers; due to the fact that a timely loss recognition and delay in earnings recognition moderates the managers' tendency towards a more favorable financial situation in their respective company.

Lafond and Roychowdhury (2008) argue that intra-agency conflicts between shareholders and managers are associated with the early loss recognition. Despite their findings, the results from Ball et al. (2008) showed no evidence of a correlation between the increase of timely loss recognition and the capital market. However, other researchers suggested that insider trade laws in the securities markets lead to increase in timely loss recognition (Jayaraman 2012).

Ball and Shivakumar (2006) analyzed the asymmetric timely recognition of accruals (the accrual component of earnings). Utilizing a regression relationship between accruals and cash flow, they found that in the case of losses (negative operating cash flow), there is a higher correlation between accruals and cash flow, which implies conservatism (Ball and Shivakumar 2006).

By analyzing the asymmetric timely recognition in measuring conservatism (Basu criterion), Dietrich et al. (2007) proved that the tests of asymmetric timeliness are attributed to bias with regards to assessment of conservatism. This perceived bias could skew the experimental results, which are thought as evidence of conservatism in the absence of asymmetric timely recognition of earnings. Utilizing this framework, it was demonstrated that the asymmetry coefficient that were estimated by the earnings and return regression is not indicative of a quicker reflection of bad news than good news (Dietrich et al. 2007: 1).

Shroff et al. (2013) examined the criterion of asymmetric timely recognition of earnings. Their results show that there is a higher relationship between bad news and accounting earnings in the current period, compared to good news and accounting earnings in the current period. In other words, accounting earnings quickly recognizes bad news in the current period, but postpones the recognition of good news to the future (Shroff et al. 2013).

Tian et al. (2009) examined the asymmetric timely recognition of operating cash flow. Their findings suggest that the asymmetric timely recognition of accruals is highly related to the characteristics of the accounting measurement system, but the asymmetric timely recognition of cash flow is correlated to the company's fundamental earnings process, which is determined by characteristics such as size, sales growth, life cycle, and capital expenditures. Their findings show that the asymmetric timely recognition of cash flow is inversely related to a company's size and age, while it is directly correlated to the capital expenditure, and has a U-shaped relationship with the company's growth (Tian et al. 2009: 21–23).

Jarva (2010) examined the asymmetric timely recognition of operating cash flow. The results indicate that when accruals (the accrual component of earnings) are used as the dependent variable in the Basu model, the asymmetry coefficient is reduced by only 28%. It represents a high contribution of accruals in asymmetric timeliness of earnings. In contrast, the results show that the operating cash flow has a lower contribution in the measurement of the asymmetry coefficient (Jarva 2010: 1). Similarly, Collins et al. (2014) found that CFO asymmetry does not signal for recognizing unrealized gains versus unrealized losses.

In addition, Jarva (2010) examined the persistence of earnings during the period of bad news. His results imply that due to accruals, the persistence of earnings declines in the bad news periods (Jarva 2010). Moreover, Athanasakou et al. (2014) found that firms with higher volatility of operations and managerial incentives to withhold bad news exhibit relatively more concentrated bad news flows. This relative concentration is also positively associated with lower earnings quality.

Ruch and Taylor (2011) examined two types of conservatism in countries utilizing common law. The results indicate that these countries prefer the conditional conservatism (i.e., more timely recognition of losses and reduced values than earnings and increased values in the financial reporting system) to the unconditional conservatism (Ruch and Taylor 2011: 11).

Jayaraman (2012) examined the impact of capital market demand on timely loss recognition as an evaluation criterion for conservatism. The results indicate that timely loss recognition, as an evaluation criterion for conservatism, moves forward concurrent with the capital market demand in order to raise the quality of financial reporting (Jayaraman 2012: 78).

Kim et al. (2013) studied the correlation between the asymmetric timely recognition of earnings (conservative gain and loss criterion) and the market to book value ratio (conservative balance sheet criterion). According to their findings, there is a significant negative correlation between these two conservatism criteria. They found that the longer the estimated period of asymmetry criterion is, the more negative this correlation will be (Kim et al. 2013).

Mehrani et al. (2009) examined the asymmetric timely recognition of earnings, and its correlation with accruals in the Tehran Stock Exchange. Their findings suggest that the accounting profit is about 3.66 times more sensitive to the negative than the positive stock returns, and the fact that about 78 percent of the asymmetric timely recognition of accounting earnings are explained by the accruals (Mehrani et al. 2009).

Mashayekhi et al. (2009) examined the relationship between the conservatism and the distribution and persistence of earnings. Their findings suggest that as the conservatism increases, the distribution of earnings decreases. They also predicted that the persistence of earnings decreases as the conservatism increases. However, this hypothesis was not supported by actual evidence (Mashayekhi et al. 2009: 107).

Mehrani et al. (2010) investigated the correlation between a company's size and debt contracts with conservatism in the Tehran Stock Exchange. Their findings show a positive significant relationship between debt and conservatism in two criteria, based on the accruals and market value. Furthermore, the negative relationship between the firm's size and conservatism was only approved in the criterion, based on the market value. Generally, one cannot infer that there is a significant inverse relationship between a firm's size and conservatism (Mehrani et al. 2010: 97).

Ghaemi et al. (2010) examined the impact of conservative accounting on the persistence of earnings and the price to earnings (P/E) ratio. The results indicate that the persistence of earnings and the price to earnings (P/E) ratio are both lower in the companies that consequently report more conservative earnings (Ghaemi et al. 2010: 55).

Hashemi et al. (2011) examined the relationship between the conditional conservatism (timely loss recognition) and the cost of common stocks. The results indicate that there is a significant inverse relationship between conditional conservatism (timely loss recognition) and the company's cost of common stocks. Their results also suggest that there is a positive relationship between conditional conservatism (timely loss recognition) and the cost of common stock portfolio, and this relationship is significant for the stock portfolio of companies with medium to high levels of conservatism (Hashemi et al. 2011: 47–48).

Saghafi and Karvandan (2011) studied the relationship between conservatism and financial flexibility, and its impact on the corporate financial decisions such as decisions on cash management, savings, external financing and earnings distribution. The findings suggest that the firms with more conservative financial reporting have more financial flexibility regarding decisions on cash management, savings and earnings distribution, but less financial flexibility on decisions related to external financing. Also, the companies practicing conservative financial reporting maintains less discretionary fund, distribute more cash earnings, and are more likely to borrow in case of external financing (Saghafi and Karvandan 2011: 9).

## 4. Research methodology

This study is quasi experimental in terms of nature, post-event (using past data), and kind. The basic information of study is the information that is related to the financial statements of the respective companies. In order to collect data for the study, the database of Rahavard Novin software, and the website at www.rdis.ir were employed. In this study, an 8-year data set (2003–2010) of 78 companies that are listed in the Tehran Stock Exchange was utilized, and in order to estimate the study models, combined data sets were used. The F-Limer test was used to determine the space between the panel and the pooling data. In the case of the pooling data, the model will be estimated, which eliminates the requirement for the Hausman test. But in the case of panel data,

the Hausman test needs to be conducted, and the final result is estimated depending on the fixed or random effects model. In this study, Model 1 and Model 3 are of the pooling type, while Model 2 is of the panel type, which makes the Hausman test mandatory.

The main hypotheses of this research are based on the Basu (1997) criterion of asymmetry in timely recognition. Earnings are more responsive towards bad news. In his study, Basu showed that the persistence of negative changes (bad news) of earnings is less than its positive changes. The reason for this is that the accounting earnings recognize bad news earlier than good news; as a result, there is a lower persistence of earnings for bad news periods relative to the good news periods.

Jarva (2010) attributes this decline in persistence of earnings to accruals (Jarva 2010: 17). Therefore, the first hypothesis of the research was formulated as follows:

$H_1$: *The persistency of earnings is reduced in bad news period.*

The timely loss recognition (bad news) reduces the persistence of earnings. Ball and Shivakumar (2005) used the positive and negative cash flows as good and bad news, respectively. They investigated that a more timely reaction of earnings to the bad news (negative cash flow) compared to the good news can be effective in predicting future cash flow (Ball and Shivakumar 2006: 33). In fact, a more timely recognition of negative cash flow makes the prediction of future cash flows more realistic and reliable. Therefore, it enables users to measure the true value of a company, and make more favorable decisions. Consistent with this view, the second hypothesis was formulated as follows:

$H_2$: *Timely loss recognition will increase the power of earnings in predicting future operating cash flow.*

The statistical population of the study is companies listed in the Tehran Stock Exchange. By applying the following restrictions, the data of 78 companies listed in the Tehran Stock Exchange during the period between 2003–2010 are reviewed. The selection of companies is based on the following criteria:

– Their fiscal year ends in the Persian date Esfand 29 (March 20).
– They have not experienced trading interruption for over three months.
– They are not among the financial intermediaries, insurance, investments, banking and financial holding institutions.

To examine the impact of timely loss recognition on the persistence of earnings, Model 1 was estimated.

$$\Delta E_{it} = \beta_0 + \beta_1 D\Delta E_{it-1} + \beta_2 \Delta E_{it-1} + \beta_3 D\Delta E_{it-1} \times \Delta E_{it-1} + \varepsilon_{it}, \ (1)$$

where: $\Delta E_{it}$ – change in the accounting earnings scaled by total assets of the beginning of the period; $D\Delta E_{it-1}$ – a virtual variable that is equal to 1 if $\Delta E_{it-1}$ is negative, and to 0, otherwise; $\Delta E_{it-1}$ – Change in the accounting earnings of year (t–1) compared to the previous year that is scaled by total assets at the beginning of the period.

Based on Model 1, the persistence of earnings is reduced during the bad news period. In this model, the reduction in the persistence of earnings is judged based on the $\beta_3$ coefficient. If $\beta_3 < 0$, the persistence of earnings is reduced during the bad news period (Jarva 2010: 16).

Model 2 evaluates the reason of reduced persistence of earnings.

$$E_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 ACC_{it} + \beta_3 DVAR_{it} \times CFO_{it} + \\ + \beta_4 DVAR_{it} \times ACC_{it} + \varepsilon_{it+1} \quad , \tag{2}$$

where: $ACC$ – Accruals are obtained from the difference between operating earnings and operating cash flow. Since the majority of companies in the study possess negative accruals, $ACC$ was used as the absolute value, and was scaled by total assets at the beginning of period; $CFO$ – Operating cash flow scaled by assets at the beginning of period; $DVAR$ – represents the economic loss. A negative $CFO$ or $\Delta CF_t$ or an abnormal negative return can be considered as economic loss. In this study, a negative $CFO$ was considered as loss.

Based on Model 2, the reason of reduction in the persistence of earnings, described in previous model, is examined. The reduction in the persistence of earnings is judged based on the $\beta_4$ coefficient. If $\beta_4 < 0$, the reduced persistence of earnings is due to accruals (Jarva 2010: 16).

In order to evaluate the effect of timely loss recognition on the power of earnings in predicting future cash flow, Model 3 was estimated.

$$CF_{it+1} = \alpha_0 + \alpha_1 CF_{it-1} + \alpha_2 ACC_{it-1} + \alpha_3 CF_{it} \times \alpha_4 ACC_{it} \\ + \alpha_5 DVAR_{it} + \alpha_6 CF_{it} \times DVAR_{it} + \alpha_7 \times ACC_{it} \times \\ DVAR_{it} + \varepsilon_{it+1} \quad . \tag{3}$$

Model 3 predicts the future operating cash flow, once based on the operating cash flow and accruals of the current year and the last year, and once based on the asymmetric timely recognition of bad news (negative operating cash flow). In this model, the impact of timely loss recognition in predicting future operating cash flow is judged based on the coefficients $\alpha_6$ and $\alpha_7$. If $\alpha_6 > 0$ and $\alpha_7 > 0$, it can be concluded that the timely loss recognition (negative operating cash flow) will increase power of earnings in predicting future operating cash flow (Ball and Shivakumar 2006: 34).

## 5. Results

Descriptive statistics for the research variables are presented in Table 1.

The first hypothesis of the research suggests that:

The persistence of earnings is reduced during the bad news periods.

To distinguish the panel data from the pooling data, the F-Limer test was used, and the results are presented in Table 2.

Firstly in order to test the hypotheses, fitting methodology of model is determined for determining kind of fitting of model. F-limer test is used to choose between panel data method and pooling data method.

As it is shown in Table 2, for models 1 and 3, pooling data can be used and for model 2 we can use panel data.

In addition, Hasman test is used to choose between fixed effects methodology and random effects methodology.

**Table 1.** Descriptive statistics of the research variables.

| Variable | Mean | Median | Sta. dev | High limit | Low limit | observations |
|---|---|---|---|---|---|---|
| $E_t$ | 0.1958 | 0.1570 | 0.1491 | 1.1495 | –0.1474 | 390 |
| $R_t$ | 15.70938 | 5.5349 | 41.91815 | 178.07 | –65.29 | 390 |
| $CFo_t$ | 0.1906 | 0.1565 | 0.1888 | 2.1955 | –0.1914 | 390 |
| $ACC_t$ | 0.0958 | 0.0689 | 0.11485 | 1.5460 | 0.0003 | 390 |
| $\Delta E_{it}$ | –0.0355 | –0.0085 | 0.16655 | 0.6372 | –1.1432 | 390 |
| $\Delta E_{it-1}$ | –0.0258 | –0.0142 | 0.16169 | 0.7151 | –1.0925 | 390 |
| $E_{it+1}$ | 0.1832 | 0.1537 | 0.13996 | 0.7650 | –1.1474 | 390 |
| $CFo_{t+1}$ | 0.1440 | 0.1198 | 0.17076 | 2.2805 | –0.2480 | 390 |
| $CFo_{t-1}$ | 0.2608 | 0.1986 | 0.2875 | 2.8527 | –0.2162 | 390 |
| $ACC_{t-1}$ | 0.1451 | 0.1043 | 0.17697 | 2.3611 | 0 | 390 |

*Note:* The research variables are scaled by total assets at the beginning of the period. $\boldsymbol{E_t}$: Operating earnings in year (t), $\boldsymbol{R_t}$: Annual return on equity in year (t), $\boldsymbol{CF_t}$: Operating cash flow in year (t), $\boldsymbol{ACC_t}$: accruals in year (t) that is obtained due to difference between the operating earnings and operating cash flows; and its absolute value is presented. $\boldsymbol{\Delta E_{it}}$: Change in the operating earnings of year (t) compared to the previous year, $\boldsymbol{\Delta E_{it-1}}$: Change in the operating earnings of year (t–1) compared to the previous year, $\boldsymbol{E_{it+1}}$: Operating earnings in year (t +1), $\boldsymbol{CF_{t+1}}$: Operating cash flow in year (t +1), $\boldsymbol{CF_{t-1}}$: Operating cash flow in year (t–1), $\boldsymbol{ACC_{t-1}}$: Accruals in year (t–1) is obtained due to the difference between the operating earnings in year (t–1) and operating cash flow in the same year; and its absolute value is presented.

Based on the result of Husman test in Table 3 fixed effect method is used to estimate the model.

The estimation results of Model 1 are shown in Table 4.

In Model 1, the $\beta_3$ coefficient forms the basis for assessing the reduction of the persistence of earnings. As can be seen, contrary to the predictions, the $\beta_3$ coefficient is positive and significant at a 5% level (P-value <0.05). So, the evidence shows that the persistence of earnings does not decrease during the bad news periods, and accordingly, the first hypothesis is rejected.

Next, by evaluating Model 2, it is examined whether the reduced persistence of earnings is due to the accruals or not, and the results of the model's estimation are shown in Table 5.

In Model 2, the $\beta_4$ coefficient is the basis for assessing the reason of reduction in the persistence of earnings.

**Table 2.** The F-Limer test results.

| Result | F-limer statistic | Model |
|---|---|---|
| pooling | F = 0.598 | Model 1 |
| Panel | F = 2.673 | Model 2 |
| pooling | F = 0.513 | Model 3 |
| pooling | F = 0.508 | |

**Table 3.** The Hausman test result.

| Probability | Result | Model |
|---|---|---|
| Hausman (prob) = 0.00 | Fixed effects | Model 2 |

**Table 4.** Estimation results of Model 1: reduction evaluation in the persistence of earnings in bad news period.

$$\Delta E_{it} = \beta_0 + \beta_1 D \Delta E_{it-1} + \beta_2 \Delta E_{it-1} + \beta_3 D \Delta E_{it-1} \times \Delta E_{it} + \varepsilon_{it}$$

| Explanatory variables | Coefficient | t statistic | Sig | Result |
|---|---|---|---|---|
| $D \Delta E_{it-1}$ | 0.00615 | 0.538 | 0.59 | Not significant |
| $\Delta E_{it-1}$ | −1.0022 | −13.720 | 0 | Not significant |
| $D \Delta E_{it-1} \times \Delta E_{it-1}$ | 1.242 | 12.58 | 0 | Not significant |
| DW = 1.381; R² = 0.314; adjusted | | | | |

**Table 5.** The estimation results of Model 2: the evaluation of the reason of reduction in the persistence of earnings.

$$\varepsilon_{it+1} + ACC_{it} \times \beta_4 DR + CF_{it} \times \beta_3 DR_{it} + ACC_{it} \beta_2 + \beta_1 CF_{it} + \beta_0 = E_{it+1}$$

| Explanatory variables | Coefficient | t statistic | Sig | Result |
|---|---|---|---|---|
| $\beta_0$ | 0.1486 | 18.8428 | 0 | Not significant |
| $CF_{it}$ | 0.2142 | 5.73 | 0 | Not significant |
| $ACC_{it}$ | −0.0503 | −0.9095 | 0.36 | Not significant |
| $CF_{it} \times DR_{it}$ | −0.054 | −0.995 | 0.32 | Not significant |
| $ACC_{it} \times DR_{it}$ | 0.0656 | 0.67 | 0.503 | Not significant |
| Adjusted R² = 0.655; DW = 1.83 | | | | |

As can be seen, contrary to the predictions, the $\beta_4$ coefficient is positive and insignificant at the 5% level, so the evidence does not confirm that the reduction in the persistence of earnings in the bad news periods is due to the accruals.

The second hypothesis of the study states that:

The timely loss recognition (negative operating cash flow) will increase the power of earnings in predicting future operating cash flow.

The estimation results of Model 3 are shown in Tables 6 and 7.

The estimation results of Model 3- part (a) are presented in Table 6. Based on Model 3-part (a), the future operating cash flow is estimated based on the cash flow and accruals of the previous year, and the cash flow and accruals of the current year. As can be seen, $\alpha_1$, $\alpha_2$, $\alpha_3$, and $\alpha_4$ are positive, as predicted, but only $\alpha_1$ and $\alpha_3$ are significant at the 5% level (P-value <0.05). Thus, the evidence shows that the prediction of future cash flow is possible only based on the cash flow of the previous and the current year.

In this model, the $\alpha_6$ and $\alpha_7$ coefficients are the assessment basis of the impact of timely loss recognition in predicting future cash flow. As can be seen in Table 7,

**Table 6.** The estimation results of Model 3–part (a): prediction of future cash flow based on the cash flows and accruals of the previous year and the current year.

$$F_{it+j} = \alpha_0 + \alpha_1 CF_{it-1} + \alpha_2 ACC_{it-1} + \alpha_3 CF_{it} + \alpha_4 ACC_{it}$$

| Explanatory variables | Coefficient | t statistic | Sig | Result |
|---|---|---|---|---|
| $CF_{it-1}$ | 0.15093 | 3.891 | 0.0001 | Not significant |
| $ACC_{it-1}$ | 0.0252 | 0.4398 | 0.6603 | Not significant |
| $CF_{it}$ | 0.3365 | 6.4653 | 0 | Not significant |
| $ACC_{it}$ | 0.1091 | 1.366 | 0.1727 | Not significant |
| Adjusted R2 = 0.1019; DW = 0.1019 | | | | |

**Table 7.** Estimation results of Model 3: Predicting future cash flow based on the timely loss recognition.

$$CF_{it+j} = \alpha_0 + \alpha_1 CF_{it-1} + \alpha_2 ACC_{it-1} + \alpha_3 CF_{it} + \alpha_4 ACC_{it} + \alpha_5 DVAR_{it} + \alpha_6 CF_{it} \times DVAR_{it} + \alpha_7 ACC_{it} \times DVAR_{it} + \varepsilon_{it}$$

| Explanatory variables | Coefficient | t statistic | Sig | Result |
|---|---|---|---|---|
| $CF_{it-1}$ | 0.1472 | 3.7434 | 0.0002 | Not significant |
| $ACC_{it-1}$ | 0.0224 | 0.3886 | 0.697 | Not significant |
| $CF_{it}$ | 0.3566 | 6.0328 | 0.000 | Not significant |
| $ACC_{it}$ | 0.0773 | 0.833 | 0.405 | Not significant |
| $DVAR_{it}$ | 0.0348 | 0.48 | 0.632 | Not significant |
| $CF_{it} \times DVAR_{it}$ | −0.6972 | −0.775 | 0.44 | Not significant |
| $ACC_{it} \times DVAR_{it}$ | −0.267 | −0.54 | 0.59 | Not significant |
| Adjusted R2 = 0.098; DW = 1.705 | | | | |

contrary to predictions, the $\alpha_6$ and $\alpha_7$ coefficients are positive and significant at the 5% significance level (P-value <0.05). So, the evidence shows that timely loss recognition (negative cash flow) will not increase the power of earnings in predicting future operating cash flow, and accordingly, the second hypothesis is rejected as well.

According to the above results neither of the hypotheses is accepted. The next section presents discussion of the results.

## Discussion and conclusions

This study examined the reduction in the persistence of earnings in the period of bad news, as well as the timely loss recognition (negative cash flows) in the prediction of future cash flows. Seventy eight companies that are listed in Tehran Stock Exchange were utilized to estimate the study models. In addition, the F-Limer test was used to determine the space between panel and the pooling data. Based on results the persistency of earnings does not decrease during the bad news period, and accounting earnings do not distinguish good news from bad news in the context of recognition time. The revenues of each period are matched with the expenses of the same period, and the persistence of earnings does not decrease during the current period. This finding contradicts Basu (1997) but is consistent with earning big bath hypothesis in which management intentionally report bad news in order to smooth the profit (Kirschenheiter and Melumad 2002).

The findings of this study contradicts a study by Ball and Shivakumar (2006) which stated that the timely loss recognition (negative cash flows) increases the power of earnings in predicting future cash flows. For companies that are listed in Tehran Stock Exchange, accelerating the recognition of negative operating cash flows as bad news, compared to the positive operating cash flows as good news, has no impact whatsoever on the power of earnings in predicting future operating cash flows. The result is consistent with Jarva (2010) and McBeth (1993). They found that compared to accruals, cash flows has weaker contribution in predicting future cash flows. As this study implies, the reduction in the persistence of earnings in the bad news periods might be due to the accruals. In addition, the prediction of future cash flow can be based on the cash flow of the previous and the current year. Therefore, timely loss recognition (negative cash flow) will not increase the power of earnings in predicting future operating cash flows.

Conservatism aligns future charges with current earnings. Although this is inconsistent with the matching principle, it does not reduce earning's persistence. However, timely loss recognition (negative cash flow) does not increase the power of earnings in predicting future cash flows. The results suggested that the persistency of earnings does not decrease during the bad news period, which means that the accounting earnings do not distinguish good news from bad news in the context of recognition

time. In addition, management intentionally reports the bad news in order to smooth the profit. In Conclusion, negative cash flows can hardly be used as predictors of future cash flows. It is suggested for future studies to add accrual components of earnings to the cash flows model to provide an incremental predictive power of the prediction model.

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