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Full Length Research Paper

The interaction of income smoothing and conditional accounting conservatism: Empirical evidence from Iran

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The purpose of this paper is to investigate the interaction of conditional conservatism with income smoothing in Tehran Stock Exchange. In order to test the hypotheses, 117 firms were selected during 2001 to 2009. We use Eckel (1981) model to classify smoothing and no smoothing firms and then we apply Ball and Shivakumar (2005) type measures of conditional conservatism on each group. The results indicate that the smoothing firms in Tehran Stock Exchange use the veil of conservative accounting to manage earnings. In fact managers in smoothing firms in comparison to no smoothing firms have incentive to smooth earning downwards, toward conservatism so it casts doubt on the ability of accounting conservatism to constrain managers' opportunistic behavior.

Key words: Income smoothing, earnings management, conditional accounting conservatism, aggressive accounting.

INTRODUCTION

Accounting standards often leave room for flexible interpretations on how to follow the standards. Management can use this flexibility to manage and smooth earnings into the direction that is most favorable for them (Molenaar, 2009).

Income smoothing refers to the 'dampening of fluctuations about some level of earnings that is currently considered to be normal for a firm (Beidleman, 1973). Albrecht and Richardson (1990) distinguish between intentional and natural smoothing, the latter comprising technical automatisms of the accrual process where there is no manipulation by management. Intentional smoothing can occur either by timing real business decisions (real smoothing) or by choosing accounting methods that allocate earnings over time in the desired manner (artificial smoothing). Based on Fudenberg and Tirole (1995), common definitions, view artificial income smoothing as the process of manipulating the time series of earnings through the accrual process to make the reported income stream less variable, while not increasing or decreasing equity in the long run. Therefore, it can be characterized as a form of earnings management (Joachim et al., 2006).

Earnings management is defined as using judgment in financial reporting and structuring transactions to alter financial reports in order to show favorable figures. Prior empirical research concludes that earnings management occurs for the reasons as financial market perception, management compensation, meeting debt covenants and avoiding regulatory intervention (political costs) (Molenaar, 2009). So we use 'income smoothing' and 'earning management' interchangeably throughout the paper.

Another attribute of financial reporting is the extent of reporting conservatism. Conservatism may take the form of a more timely recognition of economic losses as compared with the recognition of economic gains, resulting in a systematic undervaluation of the book value of the firm's equity relative to its economic value (Watts, 2003; Givoly et al., 2007).

One of the criticisms of conservatism is that understatement in the current period due to conservatism could lead to overstatement of earnings in future periods.

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Conservatism exists primarily to constrain managers' opportunistic behavior and thus protect bondholders, shareholders, and firms' other stakeholders that is helps reduce contracting costs (Watts, 2003). Surprisingly, given this role of accounting conservatism and its increase over time (Givoly et al., 2008), earnings management continues to be regarded as "both pervasive and problematic (Amy et al., 2007). Notwithstanding conservatism potential role in reducing litigation risk or alleviating agency costs, there is an ongoing debate among standard setters and academics regarding whether accounting conservatism is a desired property that enhances reporting quality (Givoly et al., 2008).

Regulators, standard setters and academics have expressed concerns that, firms use the veil of conservative accounting to manage earnings (AICPA, 1939; Devine, 1963; FASB, 1980; Levitt, 1998; Penman, 2001). For example, Levitt (1998) alleges that firms purposely understate assets on the balance sheet and subsequently reverse those understatements to inflate earnings. The Financial Accounting Standards Board (FASB) indicates that conservative accounting should not be used to justify the intentional understatement of net assets because that practice may lead to overstated earnings in future periods (FASB, 1980). Penman (2001) states that "conservative accounting- supposedly designed to yield a conservative balance sheet- actually produces higher profitability, which is not a conservative view" (Scot et al., 2009).

Although, there have been repeated claims that conservative accounting facilitates earnings management, there is limited empirical evidence on this matter (Scot et al., 2009). According to Watts (2003), opportunistic financial reporting is counterbalanced by accounting conservatism. Regarding information asymmetry, there is a need for verifiable accounting reports. This results in a need to limit opportunistic (biased) reporting by firms. Given this asymmetric information and payoffs between several parties involved, conservatism in theory should aid in efficient contracting between the firm and its stakeholders (Molenaar, 2009).

Pae (2007) explains that due to higher litigation costs, managers have incentives to understate earnings by expediting the recognition of bad news rather than good news. Management's discretion over accruals then leads to an increase in the level of accounting conservatism. On the other hand, the bonus incentive for managers leads to postponing or hiding bad news to achieve their bonus-plan goals. This will decrease the level of earnings conservatism. In theory, the relation between earnings management and accounting conservatism is that opportunistic financial reporting is counterbalanced by accounting conservatism (Molenaar, 2009).

In another view, Joachim et al. (2006) by investigating the "international differences in conditional conservatism: The role of unconditional conservatism and income smoothing, finds that income smoothing and conditional conservatism are two fundamentally different earnings attributes. They show theoretically that both attributes yield different earnings distributions and that the motivations for producing earnings which possess these attributes differ. Also find that, the conditional conservatism increases with the importance of debt financing, while income smoothing increases with the importance of dividends.

Beaver and Ryan's (2005) classification of accounting conservatism into two dimensions, conditional and unconditional conservatism, provides key insights that help resolve this paradox. They find that conditional conservatism, which is the extent to which a firm writes down its net assets in the presence of bad news but does not write up net assets in the presence of bad news, helps constrains managers' opportunistic behavior. Unconditional conservatism captures the understatement of the net book value of assets as a result of the normal accounting process.

Also, Qiang (2007) argues that contracting cost considerations only lead to conditional conservatism because unconditional conservatism "does not utilize new information" (Basu 1997) and due to added noise in payoffs to contracting parties, "could reduce contracting efficiency".

Based on Beaver and Ryan (2005) and Qiang (2007), our research focus, will be on conditional type of conservatism and provides evidence on the interaction of income smoothing behavior and conditional conservatism. So this research should answer to the question, whether income smoothing in the Tehran Stock Exchange is counterbalanced by accounting conservatism? Investigating the relationship between income smoothing and conditional accounting conservatism is important because it can provides evidence concerning conservatism's ability to constrain managers' opportunistic behavior. So the contribution of this research to the accounting conservatism and the income smoothing literature is that it provides empirical evidence about the interaction of conditional accounting conservatism and income smoothing in Tehran Stock Exchange. Beside our test can clarify that whether accounting conservatism is a desired property that enhances reporting quality and prevent income smoothing or not.

In this paper we select Eckel model to classify firms in to smoothing or non-smoothing groups. Then we use Ball and Shivakumar models to measure conditional conservatism over smoothing or non-smoothing groups. The remainder of this paper is organized as follows: discussion of prior literature; next, we develop the hypotheses. Thereafter, we discuss the sample followed by the methodology. Next, we report the results ofvarious analyses. Finally, we provide the summary and conclusions.

LITERATURE REVIEW

García et al. (2005) studied the effects of earnings management on accounting conservatism directly. This relation was measured using the Basu (1997) model to measure conservatism and the Jones (1991) model used to measure earnings management by partitioning total accruals in to discretionary and non-discretionary accruals. They found differences in incentives for earnings management in different countries. They examined the differences in the relation between conservatism and earnings management for code-law based countries and common-law based countries. This different constitutional context significantly drives conservatism. They concluded that managers operating in code-law countries have incentives to reduce earnings. Their results show that, if you remove managers discretion, in common-law countries there is no change in the practice of conservatism while in code-law countries, the practice of conservatism is reduced. This means that managers in code-law countries have incentives to manage earning downwards, towards conservatism, which managers in common-law countries do not have.

Dhole (2010) examined the recent concerns raised in the literature on whether conservatism and earnings management are two sides of the same coin? They found that earnings management is mostly driven by time-variant component of conservatism. By removing discretionary accruals from earnings, he documented asymmetric response to good news and bad news.

Amy et al. (2007) examined the relation between earnings management to meet or barely beat analyst forecasts and the cross-sectional variation in contemporaneous and past accounting conservatism. They first estimated a modified version of the Basu (1997) model and find a negative relation between contemporaneous conditional conservatism and earnings management to avoid a negative earnings surprise. In contrast, they found a positive relation between past unconditional conservatism and earnings management to avoid negative earnings surprise. Taken together, their results suggest that unconditional conservative accounting generates slack that, in the presence of bad news, allows managers to avoid writing down net asset values and thus increases firms' likelihood of meeting or beating analyst forecasts.

Ball and Shivakumar (2006) studied the relation between conditional accounting conservatism and earnings management also by investigating the role of accruals on the asymmetric timeliness of the recognition of gains and losses. They concluded that there is a major role for accounting accruals in recognizing gains and losses more timely, so before actual cash flow is realized and that, consistent with Basu (1997), accrued loss recognition is more prevalent than accrued gain recognition.

Pope and Walker (2003), Pae et al. (2005) and Roychowdhury and Watts (2006) found that due to accruals, there is a negative correlation between accounting conservatism reflected in earnings and in the market-to-book ratio. As stated earlier, Pae (2007) explained that, on one hand, managers have incentives to understate earnings by expediting the recognition of bad news and on the other hand, the bonus incentive is to postpone or hide bad news that will decrease the level of conditional conservatism. Pae (2007) tested empirically the impact of earnings management on conservatism. Pae (2007) decomposed total accruals into non-discretionary (expected) and discretionary (unexpected) components and examines the relative contribution of expected and unexpected accruals to conditional accounting conservatism. Pae (2007) concluded that 63% of the differential timeliness of earnings is explained by the accrual component of earnings. Moreover, 93% of the differential timeliness of accruals is explained by unexpected, discretionary, accruals. Pae's results suggest that conditional accounting conservatism is primarily linked to the discretionary (managed) part of accruals rather than non-discretionary (unmanaged) accruals.

Chen et al. (2007) concluded that, regarding the share price of the firm, potential investors expect that earnings management have been used. Because investors expect earnings management, they protect themselves against this manipulation by incorporating the earnings management expectations in the share prices. Therefore, managers have to manage earnings in order to meet the expectations. According to Chen et al. (2007) conservatism reduces incentives for earnings management.

VakiliFard et al. (2011) investigated the relationship between earnings management and conservatism in accounting system of Iran. They used Givoly and Hayn (2000) model for measuring of conservatism and Jones model (1991) for calculating earnings management. Their findings showed that accruals items such as total accrual, discretionary accrual and non discretionary accrual have negative and significant relations with conservatism and discretionary accruals has high explanatory power in stating the changes of conservatism.

RESEARCH HYPOTHESES

Beaver and Ryan (2005) define conditional conservatism as the practice of writing down net assets in the presence of bad news (for example recording an asset impairment charge when the firm's asset value is permanently impaired) but never writing up net assets when the firm receives favorable news (for example, the firm is awarded a highly-profitable long-term contract). There is evidence that firms vary in their levels of conservatism. For example, Beaver and Ryan (2000) and Ahmed et al. (2002) both document cross-sectional differences in conservatism.

Furthermore, in their call for research regarding discretionary behavior and conditional conservatism, Beaver and Ryan (2005) implicitly recognize the possibility that conditional conservatism could vary with earnings management activity (Amy et al., 2007). So based on theatrical reasoning we expect that no smoothing firms which do not participate in income smoothing policies, use conditional conservative accounting and as a result expedite the recognition of loss and delay the recognition of profit; on the other hand it is expected that because of income smoothing activities, no smoothing firms participate in aggressive accounting policies. It means that they expedite the recognition of profit and delay the recognition of loss. Based on the preceding discussion, we test the following hypothesizes:

Main hypothesis: Smoothing firms are conditionally less conservative than no smoothing firms.
Sub hypothesis 1: Smoothing firms recognize loss later than no smoothing firms.
Sub hypothesis 2: Smoothing firms recognize profit sooner than no smoothing firms.

RESEARCH METHODOLOGY

Data and sample

The statistical population in this study includes the listed firms in Tehran Stock Exchange in the period of 2001 to 2009. Existence of some heterogeneousness among the listed firms in Tehran Stock Exchange led to consider some special conditions for selection of studied companies as follows:

(a) Firms should have been accepted in TSE since 1999.
(b) Fiscal periods of these firms should be leading to the end of the year.
(c) Firms should not have changed their year-ends.
(d) Firms should not be in a financial or investing industry.
(e) There is a need for availability of data.

Upon the preceding conditions, we select 117 firms. We collect data from database of Tehran Stock Exchange and Rahavarde Novin software. Then we analyze these data by SPSS software version 18.

Methods

This research employed the coefficient of variation method developed by Eckel (1981) to determine the presence of income smoothing. In this method, the coefficient of variations is used to measure the variability of sales and income. If net income is related to sales by a linear function, then according to this model variable unitary costs remain constant over time, fixed costs do not decrease and gross revenue cannot be smoothed out. Therefore, the variation coefficient of sales should be smaller than the variation coefficient of net income. If this does not happen, Eckel (1981) showed that the company is artificially smoothing its net income. Based on this, it is assumed that an index lower than 1 in absolute value indicates the presence of income smoothing because the coefficient of variation of net income is smaller than the CV of sales (Martinez et al., 2011).

$$CV\,\Delta\%NetIncome \leq CV\,\Delta\%Sales \Rightarrow Smoothing$$

where:
Δ% NetIncome = annual change in net income
Δ% sales = annual change in sales revenue
$CV(x) = \sigma(x)/\mu(x)$
where
CV(*x*) = coefficient of variation of a random variable
$\mu(x)$ = the mean of a random variable
$\sigma(x)$ = the standard deviation of a random variables

This method has been used by many previous studies in determining the presence of income smoothing, such as Albrecht and Richardson (1990), Ashari et al. (1994), Booth et al. (1995), Michelson et al. (1995), and Michelson et al. (1995) (Martinez et al., 2011).

We modified the model used in this study by using a smoothing index (SI) between 0.90 and 1.10 as the gray area. This procedure is necessary to reduce the classification error, in accordance with the methodology of Chalayer (2004) (Martinez et al., 2011).

$$0.9 \leq \left[\left|\frac{CV\Delta\%NetIncome}{CV\ \Delta\%Sales}\right|\right] \leq 1.10$$

Smoothing ≤ Gray area ≤ Non smoothing

In the second step, we use the speed in which earnings reflect bad news as compared with good news as a measure of conservatism. This measure has been employed by a number of studies (Basu, 1997; Ball and Shivakumar, 2005). To capture the differential timeliness of the earnings response to bad versus good news, we use a measure that captures the relative persistence of losses and gains. This measure is estimated as coefficient $\boldsymbol{\varphi_3}$ from the following piecewise linear regression (Ball and Shivakumar, 2005)

$$\Delta \boldsymbol{NetIncome_t} = \boldsymbol{\varphi_0} + \boldsymbol{\varphi_1 DNetIncome_{t-1}} + \boldsymbol{\varphi_2}\Delta \boldsymbol{NetIncome_{t-1}} + \boldsymbol{\varphi_3 DNetIncome_{t-1}} * \Delta \boldsymbol{NetIncome_{t-1}} + \boldsymbol{\vartheta_t}$$

where Δ*NetIncomet* (Δ*NetIncomet-1*) is change in net income from fiscal year *t*-1 to *t* (*t*-2 to *t*-1), scaled by beginning-of-period total assets. *DNetIncome* is a dummy variable that takes the value of 1 if the prior-year change in net income is negative and 0 otherwise.

Deferring the recognition of gains until their related cash flows are realized causes gains to be a "persistent" positive component of accounting income that tends not to reverse. An implication of this is that the coefficient $\boldsymbol{\varphi_2}$ is expected to be equal zero. In contrast, the timely recognition of economic losses implies that they are recognized as transitory income decreases, which results in subsequent earnings reversals. This implies that $\boldsymbol{\varphi_2} + \boldsymbol{\varphi_3} < 0$. The hypothesis that economic losses are recognized in a more timely fashion than gains implies that $\boldsymbol{\varphi_3} < 0$.

Ball and Shivakumar (2005) develop an additional model to describe the differential timeliness of gain and loss recognition that relies on the correlation between accruals and contemporaneous cash flows as follows:

$$\boldsymbol{TACC_t} = \boldsymbol{\gamma_0} + \boldsymbol{\gamma_1 DC_t} + \boldsymbol{\gamma_2 CFO_t} + \boldsymbol{\gamma_3 DC_t} * \boldsymbol{CFO_t} + \boldsymbol{\theta_t}$$

Where $TACC_t$ is total accruals in year t standardized by beginning-of-the-year total assets, CFO is cash from operations in year t, standardized by beginning-of-the-year total assets and DC is a dummy variable set equal to one if CFO is negative and zero otherwise. $TACC_t$, then are estimated as follows:

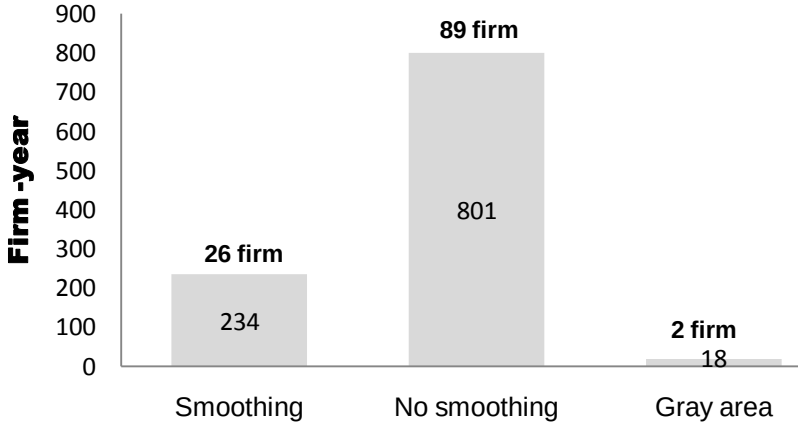

Figure 1. Smoothing status classification.

TACC $_t$ = [Δcurrent assets - Δcash] - [Δcurrent liabilities - Δcurrent portion of long term debt] - depreciation

The role of accruals in mitigating the noise in operating cash flows would be reflected as $\gamma_2 < 0$. Ball and Shivakumar (2005) predict a positive γ_3 under the hypothesis that accrued losses are more likely when the firm presents negative cash flows. That is, under conditional conservatism, in the case of economic losses, the decrease in earnings and the decrease in cash flows happen in the same period and consequently, the negative correlation between accruals and cash flows decrease in bad news periods. This is captured by a positive γ_3. So conservatism, or the more timely recognition of losses, will lead to$\gamma_3 > 0$ (Garcia et al., 2008).

EMPIRICAL RESULTS

Using the Eckel model - coefficient of variation method - described earlier, we first classify all available firm-year observations. Figure 1 represents results of the classification process undertaken to differentiate between smoothing and non-smoothing firms by using the coefficient of variation method. To reduce the classification errors, this study classifies the firms with the ratio of coefficient of variation of sales per coefficient of variation of income between 0.9 and 1.1 as in the gray area.

Figure 1 shows the presence of income smoothing activities in Tehran Stock Exchange. The findings also show that the number of smoothing firms was smaller compared to non-smoothing firms where 89 firms are classified as non-smoothing and 26 firms as smoothing. The result also classified 2 firms to be in the grey area.

In the next step, we run the Ball and Shivakumar (2005) models. Results from tests of timely loss recognition using time-series tests (Table 1) and accruals based tests (Table 2) are consistent with managers of smoothing firms, select conditional conservative accounting policies more than no smoothing firms. This translates into less conditionally conservative earnings for no smoothing firms.

Table 1 shows the results of running first Ball and Shivakumar (2005) model for the sample of smoothing and no smoothing firms. Initial results indicate a similar behavior between both groups. As predicted by Ball and Shivakumar (2005), which is described in previous section, timelier recognition of economic gains leads to a significantly negative φ2 coefficient. This is the case when we look at both smoothing and no smoothing firms. Also, if we look at the coefficient capturing the recognition of economic losses (φ3) we can see that, again for both groups, the coefficient is, significantly positive showing the unsymmetrical nature of earnings and the more contemporaneous recognition of economic gains than economic losses in earnings, which is consistent with more aggressive accounting policies. But on the next step, when we calculate the significance of the difference using the Chow test, the difference in the φ2 and φ3 coefficients between smoothing and no smoothing firms, is significant at conventional levels, which indicate the use of more aggressive accounting policies in no smoothing firms versus smoothing firms.

When we analyze economic gains and losses recognition in earnings by looking at the relation between accruals and cash flows (Table 2), we can see that, as predicted by Dechow (1994); Dechow et al. (1998) and Ball and Shivakumar (2005) there is a negative association between accruals and cash flows for all firms (negative and meaningful γ_2). The γ_3 coefficient, capturing the asymmetry in the recognition of economic gains and losses in earnings is, consistent with conservative accounting, significantly positive for smoothing firms. However, this is not the case for non smoothing firms, where the coefficient is not meaningful. This insignificant γ_3 coefficient is consistent with a faster recognition of economic gains than economics losses, and with aggressive (instead of conservative) accounting.

Also the difference in the conservative measures

Table 1. Time series test of timeliness in loss recognition in smoothing and no smoothing firms.

	Constant (α_0) (P-value)	DNetIncomet-1 (α_1) (P-value)	ΔNetIncomet-1 (α_2) (P-value)	DNt-1*ΔNIt-1 (α_3) (P-value)	ANOVA	D-W	Adj.R^2	Number
Non smoothing	0.109 (0.000)	-0.083 (0.001)	-0.992 (0.000)	1.133 (0.000)	0.000	1.96	0.462	801
Smoothing	0.047 (0.002)	-0.026 (0.196)	-0.678 (0.000)	0.892 (0.000)	0.000	1.93	0.138	234
Chow test (F-stat) diff. (p-value)			(0.00)	(0.00)				

Table 2. Accruals-based test of loss recognition in smoothing and no smoothing firms.

	Constant (γ_0) (P-value)	DCt (γ_1) (P-alue)	CFOt (γ_2) (P-value)	DCt*CFOt (γ_3) (P-value)	ANOVA	D-W	Adj.R^2	Number
No smoothing	-0.433 (0.000)	-0.113 (0.011)	-0.583 (0.000)	0.036 (0.912)	0.000	1.617	0.150	801
Smoothing	-0.506 (0.000)	0.138 (0.154)	-0.419 (0.037)	2.420 (0.000)	0.000	1.519	0.111	234
Chow test (F-stat) diff. (p-value)			(0.00)	(0.00)				

between smoothing and no smoothing firms is significant at 1% level when using the Chow test.

Overall, our results from Table 1 show that managers of no smoothing and smoothing firms delay the recognition of economic losses and expedite the recognition of economic gains. Our results from Tables 2 provide similar evidence for no smoothing firms but it is different for smoothing firms which show that managers of smoothing firms performance is in accordance with conditional accounting conservatism. However, in both cases, these findings are in contrast with our first sub hypothesis which state that smoothing firms recognize loss later than no smoothing firms, also these findings are in contrast with second sub hypothesis, which state that smoothing firms recognize profit sooner than no smoothing firms so both of them will be rejected, consequently our main hypothesis which imply that, smoothing firms are conditionally less conservative than no smoothing firms, will be rejected.

Conclusions

In this paper we studied the interaction of conditional conservatism with income smoothing in Tehran Stock Exchange. Based on theoretical reasoning, we specify the relevant concepts, interrelations and empirical measures.

In order to address research question relating to the interaction of conditional conservatism and income smoothing, we use Eckel (1981) model to classify smoothing and no smoothing firms, then we apply Ball and Shivakumar (2005) type measures of conditional conservatism on each group. Ball and Shivakumar (2005) time series tests based on the persistence of income changes reveals that there was no conditional accounting conservatism in both smoothing and no smoothing firms, however, further comparison of parameters by chow test show that no smoothing firms used more aggressive (instead of conservative) accounting than smoothing firms.

On the other hand Ball and Shivakumar (2005) accruals-based tests revealed that like previous section no smoothing firms use aggressive accounting policies but smoothing firms used conditional accounting conservatism. Although, the results of Ball and Shivakumar (2005) models for smoothing firms were conflicting, in both cases our hypothesis would be rejected. Our findings indicated that, the lack of accounting conservatism in no smoothing firms did not contribute to income

increasing or decreasing behavior but the existence of accounting conservatism in smoothing firms caused income smoothing behavior, so we conclude that smoothing firms in Tehran Stock Exchange use the veil of conservative accounting to smooth earnings. This means that managers in smoothing firms in comparison to no smoothing firms have incentive to smooth earning downwards, toward conservatism. This evidence about smoothing firms is in accordance with Penman (2001), which states that “conservative accounting- supposedly designed to yield a conservative balance sheet- actually produces higher profitability, which is not a conservative view.”

Our results provide evidence which is not consistent with the theoretical predictions resulting from the Beaver and Ryan (2005) model of conditional and unconditional conservatism, so it casts doubt on the ability of accounting conservatism to constrain managers’ opportunistic behavior.

Interpretation of our results is subject to at least one potential limitation. To the extent that the Ball and Shivakumar (2005) model and Eckel model (1981) is misspecified, these proxies are still subject to potentially serious measurement errors and does not properly capture accounting conditional conservatism and earning management, respectively, so the results of our tests of the contemporaneous relation between conservatism and earnings management are difficult to interpret. However, we are unaware of any systematic bias that these measurement errors introduce in our comparative analysis.

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