Accounting Conservatism and Management Earnings Forecast Errors of Listed Companies in Thailand

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ABSTRACT

Accounting conservatism prevents unverified good news from being quickly released and ensures that managers commit to more timely recognition of bad news in financial statements. This paper aims to investigate the relationship between accounting conservatism and management earnings forecasts errors. The sample comprises of listed companies that issued annual management earnings forecasts during the 2005–2012 period. Accounting conservatism is measured using the Khan and Watts' (2009) model. Results show that management earnings forecasts exhibit less errors when accounting conservatism is high. The findings suggest that conservative accounting mitigates information asymmetry by committing management to disclose credible earnings forecast information, resulting in less error in forecasting earnings.

Keywords: Accounting Conservatism, Management Forecast Accuracy, Voluntary Disclosure

ความระมัดระวังทางบัญชีกับความคลาดเคลื่อนในการพยากรณ์กำไรโดยผู้บริหารของบริษัทจดทะเบียนในประเทศไทย

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บทคัดย่อ

ความระมัดระวังทางบัญชีป้องกันการรับรู้รายการข่าวดีที่ยังไม่ผ่านการพิสูจน์ได้อย่างน่าเชื่อถือในงบการเงิน และทำให้เชื่อมั่นได้ว่าผู้บริหารจะยึดมั่นในการรับรู้ข่าวร้ายที่เป็นรายการขาดทุนอย่างทันท่วงทีในงบการเงิน งานวิจัยนี้ทดสอบความสัมพันธ์ระหว่างความระมัดระวังทางบัญชีกับความคลาดเคลื่อนในการพยากรณ์กำไรโดยผู้บริหาร ศึกษาข้อมูลบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยที่เปิดเผยข้อมูลพยากรณ์กำไรประจำปีในระหว่างปี พ.ศ. 2548–2555 การศึกษาใช้ตัวแบบของ Khan and Watts (2009) ในการวัดระดับของความระมัดระวังทางบัญชี ผลการศึกษาพบว่าความคลาดเคลื่อนในการพยากรณ์กำไรโดยผู้บริหารมีระดับความคลาดเคลื่อนลดลงเมื่อระดับของความระมัดระวังทางบัญชีในรายงานทางการเงินสูงขึ้น ผลการศึกษาแสดงให้เห็นว่า ความระมัดระวังทางบัญชีช่วยลดความไม่เท่าเทียมกันของข้อมูล โดยทำให้ฝ่ายบริหารเปิดเผยข้อมูลพยากรณ์กำไรที่น่าเชื่อถือทำให้ความคลาดเคลื่อนในการพยากรณ์ลดลง

คำสำคัญ : ความระมัดระวังทางบัญชี ความแม่นยำในการพยากรณ์โดยผู้บริหาร การเปิดเผยข้อมูลตามความสมัครใจ

1. INTRODUCTION

Accounting conservatism is an attribute of verified earnings reports and has been a long-standing convention in accounting, with its influence spanning for the past 500 years (Basu, 1997; Watts, 2003). Accounting conservatism is defined as "the accountant's tendency to require a higher degree of verification for recognizing good news than bad news in financial statements" (Basu, 1997, p. 4).[1] More recently, conservative financial reporting is argued to assist in coping with management asymmetric disclosure incentives which helps alleviate value destruction associated with asymmetric information (Ball, Jayaraman, and Shivakumar, 2012; Guay and Verrecchia, 2007; LaFond and Watts, 2008). In addition, conservative reports have been found to influence the manager's decisions in issuing earnings forecasts (Hui, Matsunaga, and Morse, 2009). These prior evidence are consistent with the argument that mandatory financial reports are used to confirm the credibility of voluntarily disclosed information (Ball et al., 2012), specifically management earnings forecasts. Conservatism in financial statements therefore affects the quality of management forecast information (Sun and Xu, 2012). This study explores if conservative reporting reduces management earnings forecast errors.

Corporate managers issue earnings forecasts to mitigate information asymmetry between corporate and outside investors (Lev and Penman, 1990). Management earnings forecasts represent one of the key voluntary disclosure mechanisms by which managers establish or alter market earnings expectations, preempt litigation concerns, and influence their reputation for transparent and accurate reporting (Hirst, Koonce, and Venkataraman, 2008). Studies identify factors associated with forecast accuracy or errors. Brown's (1988) analysis suggests that the degree in accuracy of management earnings forecasts could be the result of deferrals, accruals, and the adoption of discretionary accounting changes that reduce forecast errors. On the other hand, more recent studies of Ajinkya, Bhojraj, and Sengupta (2005) and Karamanou and Vafeas (2005) state that firms with superior corporate governance tend to provide more accurate and less biased forecasts.

Prior research provide evidence that conservatism influences managerial decisions in forecast earnings disclosures in terms of both quantitative characteristics and qualitative characteristics of forecasting (Hui et al., 2009; Sun and Xu, 2012). As the higher verifiability requirements of conservatism constrains managerial behavior from withholding bad news and accelerating the announcement of good news (LaFond and Watts, 2008; Hui et al., 2009), it may establish an accounting system with more accurate ex-ante forecast-based decisions and effective ex-post monitoring of managerial disclosure decisions that are made based on current earnings. In addition, since the purpose of an earnings

[1] This term is viewed as news-dependent and referred to as 'conditional conservatism,' as opposed to the more news-independent 'unconditional conservatism.' Unconditional conservatism refers to the advanced recognition of expenses and revenue deferrals (Mora and Walker, 2015). In this paper, the term 'accounting conservatism' or 'conservatism' are used to refer to 'conditional conservatism.'

forecast disclosure is to restrict asymmetric information (Lev and Penman, 1990) and managers have the incentive to make more accurate forecasts in order to avoid shareholder litigation risks, it is possible that conservative accounting could increase management motivation in issuing more accurate forecasts as a means of mitigating information asymmetry and litigation costs. This study posits that accounting conservatism would alleviate the degree of destruction on firm value which is a result of the inaccuracy in disclosures caused by the aggressiveness of managers in voluntarily disclosing forecasts. This conjecture is consistent with Watts (2003) and Mora and Walker (2015), who contend that conservative accounting practices can mitigate moral hazard and adverse selection problems. If investors impose agency cost penalties on inaccurate earnings forecasts, then this study hypothesizes that management earnings forecasts would carry more accuracy when conservative accounting is relatively high.

To provide evidence on the negative relationship between conditional conservatism measure and management forecast errors, this study analyzes a sample of 1,016 firm-years of companies listed on the Stock Exchange of Thailand (SET) that had issued annual management earnings forecasts during the period of 2005 to 2012. Noted that the disclosure of management earnings forecasts for listed firms in Thailand was voluntary. Thailand is an emerging market with an institutional environment that consists of complicated ownership structures and weak corporate governance as compared to developed markets (Connelly, Limpaphayom, and Nagarajan, 2012). Thus, it is essential for researchers and regulators to gain knowledge regarding the implications of mandated financial information and voluntary disclosure information.

The remainder of this paper is organized as follows. Section 2 presents the discussions of previous literature and develops the hypothesis. Section 3 presents the research design, data definitions, and model specifications. Section 4 presents the empirical results. Section 5 presents the robustness test. Section 6 concludes on the overall paper.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Accounting conservatism is considered to be an influential and long-standing convention in accounting. Watts (2003) portrays conservatism as an asymmetrical verifiability requirement for gains and losses that results in the asymmetric timeliness of earnings with respect to good news versus bad news on the income statement, and an understatement of net assets on the statement of financial position. Accounting conservatism is viewed as a desirable recognition principle because it constrains the manager's ability to hide bad news and accelerate the announcement of good news in financial statements. These differential verifiability requirements inherent in conservative accounting thus reduce agency costs that would normally result from information asymmetry (García Lara, Osma, and Penalva, 2014; LaFond and Watts, 2008; Mora and Walker, 2015).

According to more recent accounting literature, conservatism is found to influence managerial decisions in forecasting earnings and properties of earnings forecasts (Hui et al., 2009). Research by Hui et al. (2009) finds that conservatism is negatively related to the number of forecasts made by managers. Hui et al.'s (2009) findings indicate that a reduction in asymmetric information caused by the early recognition of expenses as loss allows conservative accounting to act as a substitute for management forecast disclosures. In addition, Li (2007) suggests that managers issue forecasts more frequently to correct analysts' earnings expectations for accounting information on conservatism. The findings of Hui et al. (2009) and Li (2007) highlight the roles of conservatism and management earnings forecasts in capital markets.

This study examines the relationship between conservatism and the magnitude of management earnings forecast errors. There are two proposed ways as to how conservatism serves as a mechanism that constrains the self-serving motivation of management in earnings forecasts. The first concerns management-shareholder conflicts of interests in which investors impose agency cost penalties on the market value of firms that voluntarily disclose information that are less accurate (Hui et al., 2009). All else equal, firms that have conservative financial reporting and policies are more likely to report losses on new projects or investments in a more timely manner than those that have less conservative financial reporting and policies (LaFond and Watts, 2008; Watts, 2003). This inhibition on the manager's decisions will, in turn, constrain their self-serving motivation when voluntarily disclosing earnings forecasts because of the potential negative effects it will impose on shareholder value when less accurate management earnings forecasts are released.

The second way involves conflicts of interests between management and debtholders. Debt covenants have been argued to be the main driving force behind accounting conservatism (Watts, 2003), thus assuring that management does not overestimate or underestimate earnings numbers when disclosing forecasts to the public. Using conservative report decreases information risks and sends out signals to the market concerning investment returns and future performances which are important for debtholders when setting debt covenants (Artiach and Clarkson, 2011). These two mechanisms pressure managers to behave conservatively when voluntarily disclosing information. As a result, when conservative accounting is relatively high management forecasts tend to be more within the range of actual reported earnings, meaning that the magnitude of the difference between forecast earnings and actual earnings is smaller.

From the above discussion, this study expects that higher degrees of conservatism is associated with less management forecast errors. This leads to the following hypothesis:

Hypothesis: There is a negative association between accounting conservatism and management earnings forecast error.

3. DATA AND METHODS

3.1 Data Source and Sample Development

The sample in this study is comprised of non-financial Thai listed firms that issued management earnings forecasts during the testing period of 2005–2012. Accounting and financial data are obtained from the DATASTREAM database by Thompson Financial. The management earnings forecasts for each fiscal year are obtained from the NEWSCENTER databases. In Thailand, aside from the SET (e.g., the SETSMART database and SET website), the NEWSCENTER database serves as an alternative channel for collecting public management forecast disclosures data because most firms release their forecasts through business press, newspapers and business journals. In the sample selection process, only point and range forecasts are included in the study because, in comparison to other types of forecasts, quantitative earnings forecast information are the most well-defined.

The collection method in this study follows that of Gong, Li, and Xie (2009) and Jarutakanont and Supattarakul (2012, 2013). The key criteria used in collecting management earnings forecast issued data are: (1) the earnings forecast must contain keywords including “expected earnings”, “estimated earnings”, “predicted earnings”; (2) the earnings forecast must be based on the company’s official news; (3) the earnings forecast data are limited to initial management forecasts; and (4) the earnings forecast must be found in at least two different data sources. The first and the second criteria are based on those by Jarutakanont and Supattarakul (2012, 2013), while the third is from Gong et al. (2009) and Rogers and Stocken (2005).

The first criterion ensures that the news discloses management earnings forecast information, not the actual performances of companies. The purpose of the second criterion is to ensure that company forecasts that are found in selected news are estimated by the firm’s management rather than by news reporters or financial analysts. The third is strictly directed towards the initial earnings forecasts rather than updated annual forecasts or earnings pre-announcements because an initial forecast captures managers’ expectations and true believe about corporate’ future prospect. Finally, the fourth criterion confirms that the numbers retrieved from the management earnings forecasts are valid and can be used in the analysis.

Based on the criteria above, the selection process of the sample is as follows. An initial number of 1,267 firm-years are retrieved from the databases. These data include annual earnings forecasts disclosed during the fiscal years of 2005–2012 and meet the specified selection criteria. Next, 178 firm-years are eliminated because the earnings forecasts are disclosed prior to the year’s t earnings announcement date (before April 1 of current year) or after the year’s $t+1$ earnings announcement date (after March 31 of the subsequent year). Consequently, 73 firm-years with insufficient financial data (during 2000–2012) to be able to calculate the conservatism measure and all control variables

in the regression model are later excluded from the collection. A final sample of 1,016 firm-years (233 distinct firms) are included in this study.

3.2 Measure of Accounting Conservatism

To test research hypothesis, this study uses firm-specific conservatism (*C_SCORE*), similar to that of Khan and Watts (2009), as the primary measure of conservatism. Khan and Watts developed a firm-year measure of conservatism, the *C_SCORE*, with the purpose of examining events that involve changes in accounting conservatism. They show that conservatism rises in response to the increase in asymmetric information, idiosyncratic uncertainty and the likelihood of litigation, which are measured by firm characteristics of size, market-to-book ratio, and leverage. Thus, Khan and Watts (2009) modified Basu's (1997) by incorporating the firm-specific characteristics, i.e., firm size, market-to-book ratio and leverage into their own study. It is the model developed by Khan and Watts that was used in the current study.

The decision to use firm-specific conservatism is grounded on three reasons. First, the firm-specific measure model (Khan and Watts, 2009) was developed from Basu's (1997) asymmetry timeliness of earnings. Here, the operationalized definition of conservatism is the higher verification threshold used to recognize good news regarding expected future cash flows as gains rather than the recognition of bad news as losses (Basu, 1997; Watts, 2003). Secondly, Khan and Watts' (2009) approach is consistent with the report made by Ball, Kothari, and Nikolaev. (2013) who had stated that estimates of asymmetric timeliness tend to vary across firms due to diversify in size, market-to-book ration, and leverage. These characteristics are argued to influence the expected earnings and returns, thereby, making them basic factors to be used when empirically studying systematic variations of bias. Ball et al. (2013) had indicated that systematic variations in bias are removed when certain factors related to corporate earnings are controlled for. In this case, the characteristics mentioned above are normally set as proxies when studying economic consequences of conservatism (Khan and Watts, 2009). Thirdly, the nature of events in this study requires a firm-year level conservatism measure. By applying Khan and Watts' (2009) *C_SCORE* measure, the *C_SCORE* in the multiple regression model can be used and statistical significance can be attained.

To calculate the conservatism level, this study estimates Equation (1), the cross-sectional model, for each year of the sample period using all observations that possess the necessary financial data.

$$\begin{aligned}\frac{X_i}{P_{t-1}} &= \beta_0 + \beta_1 DR_i + RET_i(\mu_1 + \mu_2 SIZE_i + \mu_3 MB_i + \mu_4 LEV_i) \\ &\quad + DR_i RET_i(\lambda_1 + \lambda_2 SIZE_i + \lambda_3 MB_i + \lambda_4 LEV_i) \\ &\quad + (\delta_1 SIZE_i + \delta_2 MB_i + \delta_3 LEV_i + \delta_4 DR_i SIZE_i + \delta_5 DR_i MB_i + \delta_6 DR_i LEV_i) + \varepsilon_i \end{aligned} \quad \text{.....(1)}$$

where X_i is the earnings per share reported by firm *i*, P_{t-1} is price per share at the beginning of year of firm *i*; RET_i is a proxy for the news concerning each firm's performance, which is calculated from the cumulative buy-and-hold stock returns of firm *i* over 12 months, beginning from the ten months prior to the end of the fiscal year; DR_i is the indicator variable that takes the value of "1" if returns (RET_i) are negative, and "0" if otherwise; $SIZE_i$ is the natural logarithm of market value of common equity; MB_i is the market-book ratio, defined as the market value of equity dividend by book value of equity; and LEV_i is the leverage ratio, calculated as the total liabilities divided by the market value of equity.

For each firm-year observation, the estimated coefficients λ_1, λ_2, λ_3, and λ_4 derived from Equation (1) are used to calculate firm-year specific conservatism, *C_SCORE*, which is calculated as Equation (2):

$$C\_SCORE_i = \lambda_1 + \lambda_2 SIZE_i + \lambda_3 MB_i + \lambda_4 LEV_i \quad \text{.....(2)}$$

The degree of conservatism of firm i was obtained from the *C_SCORE* in Equation (2). Firms with a higher *C_SCORE* are considered to have a greater degree of accounting conservatism (Khan and Watts, 2009).

3.3 Measurement of Management Earnings Forecast Error

This study aims to measure the error of management forecasts which is interpreted as the greater accuracy, the less magnitude of error. Management earnings forecast error (*MEF*) is measured as the absolute value of the difference between the management earnings forecast per share of year *t*+1 and the actual earnings per share of year *t*+1, divided by the closing share price at the end of year *t* (Gong et al., 2009; Karamanou and Vafas, 2005). Thus, this study measures forecast error with the following equation.

$$MEF_{t+1} = \frac{|(\text{earnings forecast per share of year } t+1) - (\text{actual earnings per share of year } t+1)|}{\text{closing share price at the end of year } t}$$

3.4 Regression Model

This study tests the research hypothesis by regressing management earnings forecast error (*MEF*) on accounting conservatism (*C_SCORE*), as shown in Equation (3). The regression model includes accounting conservatism and control variables – all of which have been identified in previous studies to be associated with management forecast errors.

$$MEF_{i,t+1} = \alpha_0 + \alpha_1 C\_SCORE_{i,t} + \alpha_2 ROA_{i,t} + \alpha_3 UE_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 BM_{i,t} + \alpha_6 EXFIN_{i,t} + \alpha_7 INDCON_{i,t} + \alpha_8 TIME_{i,t} + \alpha_9 RETURN_{i,t} + \alpha_{10} CFOVOL + \alpha_{11} PINST_{i,t} + \alpha_{12} OUTDIR_{i,t} + \alpha_{13} DUAL_{i,t} + \alpha_{14} BRDSIZE_{i,t} + \alpha_j \Sigma_j YEAR_{i,t} + \varepsilon_t \quad \text{.....(3)}$$

In Equation (3), the dependent variable, *MEF*, is measured as the absolute value of management earnings forecast per share subtracted by the actual earnings per share, divided by the closing share price at the end of the year. The variable of interest is the conservatism measure, the *C_SCORE*. In testing the hypothesis, it is expected that there will be a negative relationship between conservatism and forecast errors. In other words, the coefficient α_1 is expected to have a negative sign and to be statistically significant. All control variables are discussed in Section 3.5.

3.5 Control Variables

Prior studies suggest that several forecast environment and forecaster characteristics influence a firm's forecast disclosure information on both forecast errors and biases (Hirst et al., 2008). The study includes two broad categories of explanations for the presence of error in management earnings forecasts: firm characteristics and corporate governance as control variables. Firm characteristic factors are the firm's operating performance, firm earnings, firm size, firm growth, external finance, industry concentration, forecast horizon, stock returns, operations volatility, and institutional holders. The measure of corporate governance used in this study is the structure of the firm's board of directors, including outside director, CEO/chairman duality, and board size. In addition, the study adds year dummy variable to control for year effects.

Previous studies find that there is a tendency for managers of firms with poor performance or financial difficulties to announce optimistic forecasts as a means of meeting market expectations (Koch, 2002; Rogers and Stocken, 2005). Thus, this study includes return-on-assets (*ROA*), defined as earnings before extraordinary items divided by lagged total assets, and current year unexpected earnings (*UE*) in order to control for the impacts of firm performance on managerial forecast errors. Unexpected earnings, as the proxy of firm earnings, is commonly measured as the difference between actual earnings and expected earnings (Baginski, Conrad and Hassell, 1993). Unexpected earnings is measured as $UE_{it} = RE_{it} - E(RE_{it})$; where RE_{it} is earnings of firm *i* year *t*; $E(RE_{it})$ is expected earnings of firm *i* year *t*, which is earnings of year *t*–1. Then, UE_{it} is divided by stock prices at the end of year *t*.

Corporate environmental variables that have the potential to influence managerial decisions in earnings forecast errors and biases are added into the study. In this case, size of firm (*SIZE*) and firm growth (*BM*) are included in the model because larger firms and high-growth firms generally face greater public scrutiny for forward-looking information disclosures (Healy and Palepu, 2001; Hirst et al., 2008). Hence, managers in these firms have more reason to keep earnings forecasts from carrying excess errors (Baginski, Hassell, and Kimbrough, 2002). Firm size (*SIZE*) is defined as the natural logarithm for

the market value of equity for the year prior to the forecast disclosure date. Firm growth (*BM*) is measured as the book value of equity divided by the market value of equity. In Equation (3), this study expects a positive coefficient on *BM* which is consistent with the argument that high-growth firms are more inclined to make more pessimistic forecasts. In addition, Ball et al.'s (2013) suggestion stating that empirical research which employ the *C_SCORE* can control firm size, debt ratio, and market-to-book ratio was followed. This is because failure to do so may lead to spurious correlations (García Lara et al., 2014).

Prior research suggests that external financing has the potential of driving managers to forecast earnings that are optimistically biased (Frankel, McNichols, and Wilson, 1995; Lang and Lundholm, 2000). This study thus controls for external financing (*EXFIN*), defined as net debt financing plus net equity financing divided by the beginning-year total assets in the year prior to the issued management forecasts. In addition, the regression model includes the industry concentration ratio (*INDCON*) to control for pressure of market competition. This is supported by prior literature which suggests that industry competition influences management judgment to conceal firm profitability, further leading to more pessimistic forecasts (Newman and Sansing, 1993). The industry concentration ratio is measured as the sum of squares of the firm's market share in each industry. The forecast horizon (*TIME*), defined as the number of calendar days beginning from the forecast date to the end-date of the fiscal year being forecasted, is added as a control variable. The inclusion of the forecast horizon variable is based on a prior study which concludes that management forecasts are less optimistic when released near the end of the forecast period (Johnson, Kasznik, and Nelson, 2001). This study adds stock return (*RETURN*) in the regression because forecast errors are negatively associated with past stock returns, suggesting that earnings forecasts provided by managers do not fully reflect information contained in historical stock prices (Gong et al., 2009). Stock return is measured as the buy-and-hold 12-month market-adjusted stock returns for year *t*.

In addition, prior studies suggest that under uncertain business environments, managers tend to generate more forecast errors due to their imperfect assessments of the firm's future prospects (Gong et al., 2009). Following Gong et al. (2009), the corporate operational uncertainty in this study is measured by using cash flow volatility (*CFOVOL*). This variable is measured as the standard deviation of operating cash flows divided by lagged total assets during the past five years, scaled by the magnitude of average operating cash flow (divided by lagged total assets) over the same period. Furthermore, prior empirical studies suggested that firms with greater number of institutional holders tend to display more accuracy, face less forecast errors (Karamanou and Vafeas, 2005), and have less optimistically biased forecasts (Ajinkya et al., 2005). This study includes institutional holdings in the test. Institutional holding (*PINST*) is measured as the percentage of total common shares held by institutional investors divided by the total outstanding common shares.

This study adds the structure of the firm's board of directors in the model as suggested by a previous study (Ajinkya et al., 2005). The board of directors is a governance mechanism that plays a significant role in increasing the effectiveness of the firm's internal control system when dealing with both motivational and monitoring problems. These problems can make an impact on the firm's performance and, subsequently, the firm's financial reports and disclosure decisions. Based on Ajinkya et al. (2005), the number of external directors, the distinct positions of CEO and board chairman, and the size of the board of directors are expected to be negatively associated with overestimated earnings forecasts.

To test the effects of corporate governance, the measure of the board of directors structure is defined as follows. First, outside directors or non-executive director (*OUTDIR*) is measured as the percentage of external directors on the board of directors. Next, CEO/chairman duality (*DUAL*) is an indicator variable coded "1" if the CEO is the chairman of the board, and "0" if otherwise. Third, board size (*BRDSIZE*) refers to the number of directors on the board at year-end. Consistent with prior research, this study expects that higher *OUTDIR* and *BRDSIZE* are associated with lower forecast errors, while *DUAL* is associated with higher forecast errors.

4. EMPIRICAL RESULTS

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics of the variables used in the cross-sectional regression analysis of management earnings forecast error on accounting conservatism. The mean and median values of management earnings forecast error (*MEF*) of 1,016 firm-years are 0.051 and 0.020, respectively. The findings indicate that the annual earnings forecasts of Thai listed firms, on average, deviate from actual reported earnings during the period of 2005–2012. The findings are consistent with the notion that corporate managers have the tendency to overestimate or underestimate their firm's future performances (Healy and Palepu, 2001; Kothari, 2001). This study finds that the mean and the median values of conservatism, *C_SCORE*, are 0.112 and 0.109, respectively. This indicates that financial reports made by Thai listed firms reflect conservative accounting method choices.

Table 1 also presents that the average estimated return on assets (*ROA*) and unexpected earnings (*UE*) for the sample firms are positive at about 11.7% and 0.013 baht, respectively. These results suggest that, on average, the sample firms are profitable. The mean (median) value of market value of equity (*SIZE*), book-to-market ratio (*BM*), and external finance (*EXFIN*) are 10,024.28 million baht in which the natural logarithm is 22.688 (5,017.38 million baht in which the natural logarithm is 22.569), 0.852 (0.674) and 76.9% (76.2%), respectively. The average estimated industry concentration

ratio (*INDCON*) is approximately 0.150. The mean and median time range of forecasts to fiscal year end date (*TIME*) are 201 (5.190 times a year) and 189 days (5.241 times a year), respectively. The mean and median values of stock returns (*RETURN*) of the samples are 64.10% and 38.20%, respectively.

Table 1 reports that the mean and median values of cash flow volatility (*CFOVOL*) of the samples are 0.003 and 0.004, respectively. In addition, the mean of the percentages of institutional holdings (*PINST*) for all firm-year data is 45.1%, while the mean of the percentages of outside board directors (*OUTDIR*) is 74.8%. There are 254 firms with CEO/chairman duality (*DUAL*) and 762 firms with non-duality, which is approximately 25 and 75 percent of the total sample firms, respectively. In addition, the average number of directors on the board (*BRDSIZE*) is approximately 11 persons.

Table 1: Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Median	Maximum
MEF	0.051	0.086	0.000	0.020	0.687
C_SCORE	0.112	0.056	0.011	0.109	0.278
ROA	0.117	0.099	–0.513	0.106	0.809
UE	0.013	0.268	–0.632	0.004	8.504
SIZE	22.688	1.589	19.163	22.569	27.689
BM	0.852	0.670	0.002	0.674	5.610
EXFIN	0.769	0.325	0.069	0.762	0.998
INDCON	0.150	0.086	0.038	0.136	0.395
TIME	5.190	0.489	2.833	5.241	6.768
RETURN	0.641	0.211	0.084	0.382	1.240
CFOVOL	0.003	0.126	–1.933	0.004	3.011
PINST	0.451	0.291	0.000	0.444	0.998
OUTDIR	0.748	0.157	0.250	0.778	1.000
DUAL	0.250	0.014	0.000	1.000	1.000
BRDSIZE	10.951	0.082	5.000	11.000	21.000

Table 2: Correlations Matrix

Variable	MEF	C_SCORE	ROA	UE	SIZE	BM	EXFIN	INDCON	TIME	RETURN	CFOVOL	PINST	OUTDIR	DUAL
C_SCORE	**–0.143**													
ROA	**–0.093**	–0.006												
UE	**–0.093**	–0.009	–0.027											
SIZE	0.034	**–0.106**	**0.264**	0.001										
BM	0.008	**0.129**	**–0.340**	–0.010	**–0.398**									
EXFIN	**0.095**	**–0.058**	**0.249**	**–0.047**	**0.182**	–0.017								
INDCON	–0.019	0.013	0.019	**0.063**	**0.278**	–0.052	**0.157**							
TIME	**–0.097**	–0.005	0.012	**0.044**	–0.115	0.041	**0.069**	**–0.069**						
RETURN	**0.130**	–0.033	**0.032**	0.005	**0.022**	**–0.074**	0.017	0.028	0.038					
CFOVOL	**0.037**	0.004	–0.003	0.003	**0.033**	–0.030	0.003	**–0.051**	0.019	0.014				
PINST	**–0.067**	**0.057**	0.005	0.046	0.428	–0.011	0.044	**0.135**	**0.069**	0.029	0.041			
OUTDIR	**–0.065**	**0.079**	**0.056**	–0.002	0.313	**–0.069**	**0.125**	**0.164**	**0.094**	0.011	0.044	**0.378**		
DUAL	–0.019	0.002	0.042	0.016	**0.218**	**–0.135**	0.015	0.110	**0.044**	–0.012	–0.002	0.197	**0.242**	
BRDSIZE	0.027	0.022	0.014	0.025	0.421	**–0.095**	0.079	**0.170**	0.095	0.019	0.040	**0.278**	**0.330**	0.018

Notes: The sample consist of 1,016 firm-years in the Stock Exchange of Thailand over 2000–2012. Numbers in bold indicate that the correlations are significant at the 5% level or better.

Table 2 reports the pairwise correlations, Pearson correlations, between the main variables used in the regression model. As expected, *MEF* is negatively correlated with *C_SCORE* (Pearson correlations = –0.143), indicating that high degree of conservatism is correlated with smaller magnitude of forecast errors. For the control variables, *MEF* is negatively correlated with *ROA*, *UE*, *TIME*, *PINST* and *OUTDIR*, whereas *MEF* is positively correlated with *EXFIN*, *RETURN* and *CFOVOL*.

A weak correlation of less than 0.150 in magnitude is found between *C_SCORE* and the control variables. The variance inflation factors (VIF) of the regression independent variables in model specifications are below two (between 1.004–1.705).[2] Thus, the multicollinearity problem among the regression variables is unlikely to affect empirical inferences.

4.2 Regression Analysis on the Relationship Between Accounting Conservatism and Management Earnings Forecast Errors

Table 3 reports the cross-sectional regression on the relationship between accounting conservatism and management earnings forecast errors after controlling for other factors that affect management forecast errors. Table 3 presents the multiple regression results from estimating Equation (3) using the full sample (1,016 firm-years). The results show that the overall model is significant at *F*-value = 10.260, $p < 0.000$, while the model's explanatory power is not low as reflected by the adjusted R^2 of 0.182.

As demonstrated in Table 3, the coefficient on *C_SCORE* is significantly negative (coefficient = –0.120, *t*-statistic = –2.920) which supports the research hypothesis. Specifically, the result suggests that the magnitude of management forecast errors is smaller when conservative accounting is relatively high. The impact of conservatism on forecast errors also show to be economically significant. For instance, with a price-to-earnings ratio of 13.35, a 1 percent increase in conservative report would decrease the errors in forecasts by approximately 1.602 percent of reported earnings ($13.35 \times 0.120 \times 1 = 1.602$).

The finding, as reported in Table 3, shows a significantly negative coefficient on return on assets (*ROA*). Furthermore, this study also finds a significantly negative coefficient on unexpected earnings (*UE*), reflecting the tendencies of managers of firms that have negative unexpected earnings to announce forecasts that are relatively erroneous or biased. The findings are consistent with prior studies that conclude that firms with poor performance or financial difficulties are more likely to release forecasts that are overly high as a means of meeting market expectations (Koch, 2002; Rogers and Stocken, 2005).

[2] Based on the rule of thumb, there is a multicollinearity problem if VIF is higher than ten (Montgomery, Peck, and Vining, 2006).

Table 3 reports that the coefficients on external financing (*EXFIN*) are found to be significantly positive (coefficient = 0.019, *t*-statistic = 1.900), which suggests that earnings forecasts are more likely to be erroneous in firms with higher external financing. This finding supports the one by Frankel et al. (1995) and Lang and Lundholm (2000). In addition, the result shows a significantly positive coefficient on cash flow volatility, *CFOVOL*, (coefficient = 0.131, *t*-statistic = 4.510) which suggests that under uncertain business environments, managers tend to generate more forecast errors which is consistent with prior research findings (Gong et al., 2009).

As reported in Table 3, the firms' percentage of institutional holdings (*PINST*) is negatively associated with forecast errors (coefficient = –0.095, *t*-statistic = –1.430). This suggests that institutional holdings do in fact appear to lower managements' forecast errors, supporting the findings of Karamanou and Vafas (2005). The finding reveals that the coefficients on the percentage of outside committee (*OUTDIR*) is found to be significantly negative (coefficient = –0.114, *t*-statistic = –2.500), suggesting that the increased proportion of outside directors reduces management's overestimated and underestimated future earnings considerably, resulting in lower forecast errors.

Table 3: Cross-Sectional Regressions of Management Earnings Forecast Errors on Conservatism

Variables	Parameter Estimate	*t*-stat.
C_SCORE	–0.120	–2.920**
ROA	–0.073	–2.920**
UE	–0.069	–4.290**
SIZE	0.107	3.410**
BM	0.007	0.130
EXFIN	0.019	1.900*
INDCON	–0.054	–0.530
TIME	–0.017	–1.150
RETURN	0.067	1.060
CFOVOL	0.131	4.510**
PINST	–0.095	–1.430**
OUTDIR	–0.114	–2.500**
DUAL	–0.002	–0.230
BRDSIZE	0.028	1.132
Constant	0.132	2.380**

Table 3: Cross-Sectional Regressions of Management Earnings Forecast Errors on Conservatism (Cont.)

Variables	Parameter Estimate	*t*-stat.
Year fixed effect	Included	
F-value	10.260	
R^2	19.35%	
Adjusted R^2	18.21%	
Observations	1,016	

*, ** indicates statistical significance at the 10 and 5 percent level, respectively. The *t*-statistics are corrected for heteroscedasticity.

Table 3 reports ordinary least squares regression results of management earnings forecast errors on conservatism (*C_SCORE*) and all control variables. The sample consists of 1,016 firm-years of Thai listed companies for the 2000–2012 period.

The regression model is as follows:

$$\begin{aligned} MEF_{i,t+1} = {} & \alpha_0 + \alpha_1 C\_SCORE_{i,t} + \alpha_2 ROA_{i,t} + \alpha_3 UE_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 BM_{i,t} + \alpha_6 EXFIN_{i,t} \\ & + \alpha_7 INDCON_{i,t} + \alpha_8 TIME_{i,t} + \alpha_9 RETURN_{i,t} + \alpha_{10} CFOVOL + \alpha_{11} PINST_{i,t} \\ & + \alpha_{12} OUTDIR_{i,t} + \alpha_{13} DUAL_{i,t} + \alpha_{14} BRDSIZE_{i,t} + \alpha_j \sum_j YEAR_{i,t} + \varepsilon_t \end{aligned}$$

Definition of variables: *MEF* measured as the management earnings forecast per share subtracted by actual earnings per share, divided by lagged close share price; *C_SCORE*, values of the firm-year specific conservatism, estimated following the approach of Khan and Watts (2009); *ROA* measured as earnings before extraordinary items divided by lagged total assets; *UE* measured as the difference between the current earnings and the previous earnings, scaled by stock prices; *SIZE* measured as the natural logarithm of the market value of equity; *BM* measured as the book value of equity divided by market value of equity; *EXFIN* measured as net equity financing plus net debt financing scaled by lagged total assets; *INDCON* measured as the sum of the market shares of the firms' sales within each industry; *TIME* defined as the number of calendar days from the management forecast to the fiscal ending date of the year being forecasted; *RETURN* measured as buy-and-hold 12-month market-adjusted stock returns; *PINST* measured as the percentage of common shares held by institutional investors; *CFOVOL* measured as the standard deviation of operating cash flows divided by lagged total assets during the past five years, scaled by the magnitude of average operating cash flows; *PINST* measured as the percentage of total common shares held by institutional investors divided by the total outstanding common shares; *OUTDIR* measured as percentage of outside directors on board; *DUAL*, dummy variable coded "1" if the CEO is chairman of the boards, and "0" otherwise; and *BRDSIZE* measured as the number of directors on the board.

In addition, this study divides the sample into two subgroups: first are firms with forecast earnings greater than actual earnings, called "optimistic forecast subgroup" (total of 596 firm-years), and second are firms with forecast earnings less than actual earnings, called "pessimistic forecast subgroup" (total of 420 firm-years). Table 4 presents the multiple regression results from estimating Equation (3) using the optimistic forecast subgroup (Column 1) and the pessimistic forecast subgroup (Column 2).

In Table 4, Column (1) shows that the coefficients of *C_SCORE* are significantly negative in the optimistic forecast subgroup (coefficient = –0.313, *t*-statistic = –4.510). The result indicates that the magnitude of management forecast error is smaller when conservative accounting is relatively high for the optimistic forecast subgroup. The empirical implication is that optimistic-forecasted firms with reports that are more conservative have the tendency to forecast more accurately. For pessimistic subgroup, results show that there is no statistical association between conservative reports and management forecast errors (Column (2) of Table 4). The findings suggest that conservative financial report mitigates information asymmetry by committing corporates' managers to issue credible earnings forecasts in optimistic-forecasted firms.

Table 4: Cross-Sectional Regressions of Management Earnings Forecast Error on Conservatism of Optimistic Forecast and Pessimistic Forecast Subgroups

Variables	Optimistic Forecast Subgroup (1)		Pessimistic Forecast Subgroup (2)	
	Parameter Estimate	*t*-stat.	Parameter Estimate	*t*-stat.
C_SCORE	–0.313	–4.510**	0.089	1.180
ROA	–0.108	–3.320**	0.010	0.320
UE	–0.189	–0.760	–0.003	–1.560
SIZE	–0.076	–2.110**	–0.010	–3.050**
BM	0.033	3.360**	0.029	3.340**
EXFIN	–0.115	–2.650**	–0.033	–1.650*
INDCON	–0.074	–0.700	0.386	1.660*
TIME	0.017	2.380**	0.018	2.080**
RETURN	–0.066	–5.120**	–0.067	–1.250
CFOVOL	–0.104	–2.147**	0.022	0.853
PINST	–0.013	–1.810**	0.005	1.930**
OUTDIR	0.008	0.740	–0.015	–0.840
DUAL	–0.010	–0.600	0.029	1.470

Table 4: Cross-Sectional Regressions of Management Earnings Forecast Error on Conservatism of Optimistic Forecast and Pessimistic Forecast Subgroups (Cont.)

Variables	Optimistic Forecast Subgroup (1)		Pessimistic Forecast Subgroup (2)	
	Parameter Estimate	*t*-stat.	Parameter Estimate	*t*-stat.
BRDSIZE	0.004	0.290	0.010	0.580
Constant	0.139	1.810*	0.117	1.700*
Year fixed effect	Included		Included	
R^2	24.00%		20.09%	
Adjusted R^2	21.50%		16.29%	
Observations	596		420	

*, ** indicates statistical significance at the 10 and 5 percent level, respectively. The *t*-statistics are corrected for heteroscedasticity.

5. ROBUSTNESS TEST

In addition to the *C_SCORE*, this study employs the scaled decile rank of *C_SCORE* and non-operating accruals (*CONS_Accrual*) as measures of accounting conservatism. *CONS_Accrual* is the average non-operating accruals, scaled by total assets over the preceding five years prior to the management earnings forecast disclosures (Givoly and Hayn, 2000; Ahmed and Duellman, 2011).

The results also show that the negative coefficient remains highly significant (coefficient = –0.131, *t*-statistic = –3.160) when the scaled decile rank is used to measure accounting conservatism. Similarly, when the measure used is the non-operating accruals (*CONSV_Accrual*), the coefficient is –0.492 and *t*-statistics is at –4.500. Thus, the result holds for alternative measures of conservatism.

6. CONCLUSION

The research topic on conservative accounting continues to be an interesting topic in accounting research. One reason is that there is still much debate surrounding the economic consequences of conservative financial reporting in empirical literature. This study concentrates on the relationship between accounting conservatism (mandatory financial reporting) and errors in management earnings forecasts (voluntary disclosure). Using Thai listed companies, this study finds that management earnings forecasts tend to report less errors when conservatism is relatively high, suggesting that conservative financial reports keep managers from overstating and understating further earnings. Empirical evidence from this study supports LaFond and Watts (2008) and García Lara et al. (2014), who conclude that conservatism is an efficient governance mechanism to mitigate information risks and control agency

problems. The results are sufficiently robust to use the scaled decile rank of *C_SCORE* and non-operating accrual approach by Givoly and Hayn (2000) to capture the degree of conservatism in financial statements.

The empirical analyses of this study provide several contributions to existing literature. First, the results contribute to current research on the implications of conservative reports. The empirical findings extend Hui et al.'s (2009) study by providing additional evidence concerning declines in managers' inaccurate forecasts along with conservatism. Secondly, the research findings also contributes to the issue of reintroducing the long-debated concept of prudence characteristics (also termed 'conservatism') in financial statements, as stated in the Conceptual Framework, IFRS Exposure draft May 2015 (IASB, 2015). This study thus provides additional supporting evidence for policy-makers to consider and to evaluate the pros and cons of accounting conservatism when developing conceptual framework and accounting standards.

Thirdly, the findings provide practical implications of mandatory conservative reports and voluntary management forecast disclosures for regulators and accounting standard setters in Thailand. After the 1997 Asian financial crisis, revisions involving corporate governance in Thailand has had a favorable influence on accounting conservatism practices and the timeliness of earnings (Vichitsarawong, Eng, and Meek, 2010). In the meantime, a guideline of disclosures was released in 2005 by the Securities and Exchange Commission (SEC) in Thailand with the objective of enhancing the information environment as well as the degree of transparency in firms. Since then, the Thai Accounting Standard (TAS) has fully complied with the IFRS. The goal of implementing conservative accounting policy was to mitigate the negative impact of moral hazard and adverse selection problems that are caused by the firm manager's opportunistic behavior. However, during ambiguous situations managers still hold the power of making decisions based on their own professional judgments when publicly announcing information that may affect the credibility of the firm's earnings forecasts. Thus, Thai regulators should be concerned about these issues when developing voluntary disclosure rules for listed firms in Thailand in the future.

Finally, this study focuses on the consequences of conservative financial reporting on errors in management forecasts. A further study on conservative financial reporting and models of equity valuation should complement the findings of this study in understanding the implications of conservatism in valuation analysis. Furthermore, the dataset used in this study are acquired in Thailand. Additional studies in similar emerging market contexts should be beneficial in making comparative contributions.

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