CHAPTER 5

Results

This chapter reports the results obtained from testing the research hypotheses described in Chapter 3. This chapter is divided into three main parts. Section 5.1 reports the findings concerning the relationship between accounting conservatism and management earnings forecast bias. Section 5.2 presents the findings concerning the effects of accounting conservatism on stock market reactions to management earnings forecasts. Section 5.3 reports the analysis of the impact of accounting conservatism on the relationship between information asymmetry and the stock market reactions to management earnings forecasts.

5.1 Relationship between accounting conservatism and management earnings forecast bias

5.1.1 Descriptive statistics

Panel A of Table 1 reports the categorization of 1,016 firm-years (235 distinct firms) of listed companies in Thailand according to industry during the testing period. Industries are defined in accordance with the definitions stated by the Stock Exchange of Thailand (SET). Industries are categorized into agriculture and food, consumer products, industrials, services, property and construction, energy and utilities resources, and technology industries. The number of observations in each industry are large enough to be able to determine the median and differences in effects in each industry. This way, industry effects can be controlled for in regression analysis.

Panel B of Table 1 reports the mean and median values of management earnings forecast biases in each fiscal year, and the percentage of negative sign forecasts (actual earnings - forecast earnings) or “optimistic forecast bias”. The finding shows that the number of forecasting firms increased during the study period of 2005 to 2008.

Panel A of Table 2 presents the descriptive statistics of the variables used in the regression analysis on the relationship between management earnings forecast biases and accounting conservatism. Table 2 reports the descriptive statistics on *MEF_Bias* (management earnings forecast bias; measured as actual earnings per share subtracted by earnings forecast per share, then deflated by lagged closing share price), *C_SCORE* (conservatism score; estimated following the approach of Khan and Watts (2009)), *C_SCORErank* (scaled decile rank of *C_SCORE*), *CONSV_Accrual* (average non-operating accruals scaled by total assets over the preceding five years, multiplied by -1), *ROA* (earnings before extraordinary items divided by lagged total assets), *UE* (difference between the current earnings and previous earnings, scaled by stock prices), *SIZE* (natural logarithm of market value of equity), *BM* (book value of equity divided by market value of equity), *EXFIN* (net equity financing plus net debt financing scaled by lagged total assets), *INDCON* (sum of the market shares of the firms' sales within each industry), *TIME* (number of calendar days beginning from the management forecast to the fiscal ending date of the year being forecasted), *RETURN* (the buy-and-hold 12 month market-adjusted stock returns), *FOUNDER* (indicator variable; defined as "1" for founder CEO, "0" if otherwise), *GENDER* (indicator variable; assigned as "1" if CEO is male, "0" if otherwise), *TENR* (decile ranking number of years of service a person works as the CEO), *INST* (percentage of the total number of total common shares held by institutional holders divided by the total outstanding common shares), *CFOVOL* (indicator variable; coded as "1" if firms have an above-median cash flow volatility, "0" if otherwise), *SALEVOL* (indicator variable; coded as "1" if firms have an above-median sale volatility, "0" if otherwise), *OPERCY* (indicator variable; coded as "1" if firms have an above-median operation cycle, "0" if otherwise), *OUTDIR* (indicator variable; coded as "1" if firms have an above-median percentage of outside directors, "0" if otherwise), *NONDUAL* (indicator variable; coded as "1" if the CEO is not the chairman of the board, "0" if otherwise), and *BRDSIZE* (indicator variable; coded as "1" if firms have an above-median number of director on the board, "0" if otherwise).

The forecast bias is considered to be a pessimistic forecast when actual earnings is greater than forecast earnings. On the contrary, it is considered to be an optimistic forecast when actual earnings is less than forecast earnings. As stated in Table 2, the

findings indicate that the annual management earnings forecasts of Thai listed firms are, on average, higher than the actual earnings during the period of 2005-2012. The mean and median values of management earnings forecast biases (*MEF_Bias*) of the 1,016 firm-years are -0.016 baht and -0.003 baht, respectively. The findings are consistent with the notion that corporate managers have the tendency to overestimate their firm's future performances (Choi and Ziebart 2004; Healy and Palepu 2001; Kothari 2001), resulting in their firm's earnings forecasts to be optimistically biased.

As shown in Panel A of Table 2, the mean and median values of the firm-year specific conservatism, *C_SCORE*, are 0.112 and 0.109, respectively. The mean and median values are 0.479 and 0.444 for the *C_SCORErank*, and 0.031 and 0.022 for the *CONS_Accrual* measure.

Panel A of Table 2 also shows that both 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. Reasonable variations were also found in the control variables related to firm characteristics and the general business environment. The mean (median) value of firm size (*SIZE*), book-to-market ratio (*BM*), and external finance (*EXFIN*) is 10,024.28 million baht (5,017.38 million baht), 0.852 (0.674), and 76.9% (76.2%), respectively. The average estimates industry concentration ratio (*INDCON*) is about 0.150. The mean and median time range of forecast to fiscal year end date (*TIME*) are 201 and 189 days, respectively. The mean and median values of stock returns (*RETURN*) of the samples are 64.10% and 38.20%, respectively.

For all the firm-year data (1,016 firm-years), the number of founder CEO (*FOUNDER*) and the number of CEOs that are male (*GENDER*) are 364 and 940 persons, respectively. The average years of service a person works as the CEO (*TENU*) is 9.584 years. The mean and median of institutional holdings (*INST*) are 45.1% and 44.4%, respectively. The mean (median) value of cash flow volatility, sales volatility, and operating cycle are 0.003 (0.004), 0.004 (0.012) and 76 days (59 days), respectively. The percentages of outside board of directors (*OUTDIR*) have a mean of 74.8%. The number of CEOs that are not the chairman of the board (*NONDUAL*) is 762 persons from the total

observations. In addition, the average number of directors on the board (*BRDSIZE*) is 11 persons.

Panel B and Panel C of Table 2 report pairwise correlations, Pearson's correlations and Spearman rank-order correlations between the main variables used in the analysis. *MEF_Bias* is positively correlated with *C_SCORE*, *C_SCORErank* and *CONSV_Accrual* (Pearson correlations = 0.143, 0.093 and 0.106, respectively), indicating that higher degrees of conservatism are correlated with less overestimated earnings forecasts.

In terms of control variables, *MEF_Bias* is positively correlated with *ROA* and *FOUNDER*, whereas *MEF_Bias* is negatively correlated with *BM* and *TIME*. In particular, *BM* is negatively correlated with *ROA* (Pearson correlation = -0.340) and size of firm ($SIZE_t$) (Pearson correlation = -0.398), indicating that firm growth is highly correlated with firm performance and firm size. In addition, *SIZE* shows a significantly positive correlation with the ratio of external financing (*EXFIN*) (Pearson correlation = 0.162) and the percentage of institutional holders (*INST*) (Pearson correlation = 0.428), meaning that firm size reflects a proportion of external finance and external monitoring from institutional holders.

It was also found that the correlations between C_SCORE_t and other control variables are not strong. A weak correlation of less than 0.150 in magnitude was 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 1.005 - 1.705). Based on the rule of thumb, there is a multicollinearity problem if VIF is higher than ten (Montgomery, Peck, and Vining 2006; Myers 1990). Thus, the multicollinearity problem among the regression variables is unlikely to affect empirical inferences.

Next, Panel A of Table 3 reports the mean and median values of factors in calculating the *C_SCORE*. The mean (median) values of *EPS*, *RET* and *DR* are 0.130 baht (0.094 baht), 0.743% (0.473%) and 0.421 (0.000), respectively. The mean (median) values of *SIZE*, *MTB* and *LEV* are 22.614 (22.499), 2.261 (1.468) and 1.040 (0.654), respectively. The analysis also reveals that the average *C_SCORE* is significantly

different from zero (*t*-statistic = 63.684, *p*<0.000) at 5 percent confidence interval. The results imply that the financial reports of Thai listed firms are generally conservative during the study period.

Panel B of Table 3 reports the mean (0.031) and median (0.022) values of the non-operating accrual measure (*CONSV_Accrual*) of observations in each year during the period of 2004-2011. The results show that the degree of non-operating accrual in financial reports of sample firms gradually increased during the period the study was conducted. This table shows a sharp increase in the degree of non-operating accrual during the years 2008 to 2009 and the subsequent year. Therefore, the findings from this study provide evidence that the degree of conservative in financial reports of companies in Thailand increased during the years 2004-2011.

5.1.2 Univariate analysis

Table 4 reports the mean and median values of management earnings forecast biases (*MEF_Bias*) across the scaled decile ranks of conservatism measures *C_SCORE* and *CONSV_Accrual*. For each year, the firms were divided into ten groups based on the *C_SCORE* and *CONSV_Accrual*. The scaled decile rank of *C_SCORE* was identified by ranking the observations from each year into ten groups, labeled one to ten, and then re-scaled the ranking by ten. Thus, the scaled rank of *C_SCORE* fell within the 0 to 1 interval. Therefore, the high scaled decile rank is considered a high degree of accounting conservatism.

As shown in Table 4, the mean and median values of *MEF_Bias* increased from -0.124 and -0.034 for the lowest *C_SCORE* decile rank to 0.055 and 0.038 for the highest *C_SCORE* decile rank. It shows that the mean of management forecast biases increases along with the level of *C_SCORE*. The mean difference between management earnings forecast biases for the high and low *C_SCORE* deciles is significantly positive at 0.179 (*t*-statistic = 0.014, *p*<0.000). For the medians of management earnings forecast biases, the Wilcoxon rank sum test of median difference between the high and low *C_SCORE* deciles is at 0.072 (*Z*-statistic = 0.006, *p*<0.000), which is significant at the 5 percent level. The findings also revealed an economical significance for the bottom and the top

of *C_SCORE* decile rank. For example, with a price-to-earnings ratio[14] of 13.35 (the sample median), the average value of management forecast biases was -165.54 percent (-0.124 x 13.35) of reported earnings for the lowest *C_SCORE* decile rank and 73.42 percent (0.055 x 13.35) of reported earnings for the highest *C_SCORE* decile rank.

As an additional test, this study also examined the mean and median of *MEF_Bias* across the decile ranks of non-operating accruals measure (*CONSV_Accrual*). This study calculated the *CONSV_Accrual* by dividing the non-operating accruals with total assets, then multiplied by -1 (Francis, Hasan, and Wu 2013). The findings, as reported in the last two columns (3) and (4), show that the mean and median values of *MEF_Bias* increase from -0.158 and -0.043 for the lowest *CONSV_Accrual* decile rank to 0.041 and 0.025 for the highest *CONSV_Accrual* decile rank. The mean difference between management earnings forecast biases for the high and low *C_SCORE* deciles is significantly positive at 0.199 (*t*-statistic = 0.015, $p<0.000$). Similarly, the median difference between the high and low *C_SCORE* deciles is at 0.068 (*Z*-statistic = 0.004, $p<0.000$), which is significant at the 5 percent level.

Overall, the findings suggest that the negative value of management earnings forecast bias decreases according to the degree of accounting conservatism.

5.1.3 Regression analysis on the relationship between accounting conservatism and management earnings forecast biases

Table 5 presents the multiple regression results from estimating Equation (8). The results show that the overall model is significant in model 1 (*F*-value = 2.900, $p<0.000$), Model 2 (*F*-value = 2.060, $p<0.004$) and Model 3 (*F*-value = 2.520, $p<0.000$). The model's explanatory power is low, as reflected by the adjusted R^2 of 0.046, 0.034 and 0.035 for Model 1, Model 2 and Model 3, respectively.

As demonstrated, the coefficient on *C_SCORE* was significantly positive (coefficient = 0.260, *t*-statistic = 5.570), supporting hypothesis H1. This is also consistent with finding from the previous univariate analysis that showed that managers made

[14] Price-earnings ratio = Market value per share / Earnings per share (EPS)

relatively less optimistic forecasts after high conservatively report periods. The results suggest that management earnings forecasts exhibit less optimistic tendencies when conservatism is relatively high. More importantly, the effects of conservatism on management earnings forecast biases are both statistically significant and economically significant. For instance, with a price-to-earnings ratio of 13.35 (the sample median), every 1 percent rise in degree of conservatism would result in a reduction of optimistic biases in management forecasts by about 3.47 percent of reported earnings (i.e., 13.35 x 0.260 x 1 = 3.47). Moreover, the results also show that the positive coefficient remains highly significant (coefficient = 0.029, *t*-statistic = 3.050) when the measure of accounting conservatism is the scaled decile rank (*C_SCORErank*), while the coefficient is 0.476 with associated *t*-statistics of 4.400 when the measure of accounting conservatism is the average non-operating accruals (*CONSV_ Accrual*).

All data sets in each regression model were investigated to ensure that the linear regression assumptions were not violated. First, in each specification model, the result showed that the mean value of residuals was zero. Second, in testing for the homogeneity of variance (variance of the error term is constant), the Breusch-Pagan test and White's tests were used to ensure that there were no heteroscadasticity problems. Third, the results revealed that the *Durbin-Watson* coefficient value was between 1.5 and 2.5, confirming that the autocorrelation problem did not exist. Fourth, the sample size of this study was 1,016 firm-years, which was larger than the required 30-sample size (Dielman 2005). This identified that the distribution of residuals was normal. Thus, the assumption of a normal distribution of residuals was justified. Overall, the results indicate that none of the data sets in each model testing violated the linear regression assumptions.

The results in Table 5 provide strong evidence that the management earnings forecast biases are less overestimated or are less optimistically biased (i.e., the coefficient on *C_SCORE* has a positive sign) following periods of high conservatism. In other words, the results suggest that managers who report relatively high conservatism tend to forecast their earnings with less optimistic bias. This is consistent with the explanation that managers adjust figures in their firm's earnings forecasts according to the level of conditional conservatism in the accounting system of the firm.

The findings, as reported in Table 5, show that management earnings forecast biases are associated with control variables. For example, this study found a significantly positive coefficient on return on assets (*ROA*) across three measures of accounting conservatism, which is consistent with the prediction that managers appear to overestimate past performances in forecasting future earnings or that more optimism is observed for lower profit firms. This study also found a significantly positive coefficient on unexpected earnings (*UE*), showing that managers of firms with negative unexpected earnings have the tendency to announce earnings forecasts that are relatively high. The findings are consistent with prior studies, which concluded that firms with poor performances or financial difficulties are more likely to release forecasts that are exceedingly high as a means of meeting market expectations (Koch 2002; Rogers and Stocken 2005). The results also suggest that when unexpected earnings in forecasts are high, management earnings forecasts tend to have biases that are more optimistic (Ajinkya, Bhojraj, and Sengupta 2005; Karamanou and Vafeas 2005).

In addition, Table 5 presents that the coefficients on industry concentration ratio (*INDCON*) was found to be significantly positive (0.221 and 0.119 in Model (1) and Model (3)), indicating that firms with operations in industries with low competition issue earnings forecasts that are overestimated in a lesser degree. The finding on *INDCON* was not in the same direction with prediction of this study. The coefficients on external financing (*EXFIN*) were found to be significantly negative (coefficient = -0.018, *t*-statistic = -1.520, $p<0.010$) when the conservatism measure used was *C_SCORE*. This suggests that earnings forecasts are more likely to be overestimated in firms that have higher external financing. The finding supports the prediction that managers of firms that engage in external financing may have incentives to bias their forecasts upward to raise stock prices (Francis, Schipper, and Vincent 2002 and Lang and Lundholm 2000).

Table 5 also reports a significantly negative coefficient on forecasted time (*TIME*), suggesting that management forecasts are lower than normal when they are released near the end of the forecast period, which is consistent with the prediction. In addition, the result demonstrates that higher stock returns (*RETURN*) is associated with less optimistically biased forecasts (the coefficient is positive and statistically significant

at the 5 percent level). This implies that management earnings forecasts are not a complete representation of the information included in historical share prices. The findings revealed that the coefficients on founder CEO (*FOUNDER*) were significantly positive across three measures of accounting conservatism. This suggests that firms with founder CEOs are less likely to release exaggerated forecasted future earnings, which does not support the prediction. Table 5 shows that the coefficients of *GENDER*, *TENR* and *INST* are not significant.

Based on the results from regression analyses, the models' explanatory power are low, as reflected by the adjusted R^2. The regression models controlled for the variables that previous literatures found to influence management earnings forecast bias or error (as dependent variable), except for the factors related to analyst following and analyst forecasts. In Thailand, the factors related to analyst following and analyst forecast are currently not available. The regression models used in this study, thus, did not include this set of variables. Related prior empirical studies also had models with lower explanatory power. Xu (2010) examined the relationship between accrual and management earnings forecast error, finding that the adjusted R^2 were around 0.036 - 0.037.[15] In an empirical study conducted by Sun and Xu (2012), the regression models had adjusted R^2 at 0.099 - 0.110.[16]

5.1.4 Regression analysis on the relationship between accounting conservatism and magnitude of management earnings forecast bias

Table 6 reports the cross-sectional regression on the relationship between accounting conservatism and magnitude (absolute value) of management earnings forecast bias after controlling for other factors that affect management forecast biases. Forecast bias is considered as optimistic when the value of forecast earnings is greater

[15] Xu's (2010) regression model controlled for the standard deviation of analyst earnings forecasts for the period, deflated by stock price at the end of period, and the absolute earnings surprise.

[16] Sun and Xu (2012) included a merger or acquisition (indicator variable), and the absolute earnings surprise in their regression models.

than actual earnings. On the contrary, it is considered to be pessimistic or less optimistic when forecast earnings is less than actual earnings.

Table 6 presents the multiple regression results from estimating Equation (8.1) using the full sample (of 1,016 firm-years), the pessimistic or less optimistic forecast subgroup (of 420 firm-years), and the optimistic forecast subgroup (of 596 firm-years), respectively. The results show that the overall model is significant in Model 1 (F-value = 10.260, p<0.000), Model 2 (F-value = 4.920, p<0.000) and Model 3 (F-value = 8.900, p<0.000). The models' explanatory power are low, as reflected by the adjusted R^2 of 0.178, 0.163 and 0.215 for Model 1, Model 2 and Model 3, respectively.

In columns (1) and (3), the results show that the coefficients of *C_SCORE* are significantly negative in the full sample (coefficient -0.119, *t*-statistic -2.920) and in the optimistic forecast subgroup (coefficient -0.313, *t*-statistic -4.510) at the 1 percent level. The results suggest that in the full sample and optimistic forecast subgroup, the magnitude of management forecast bias is smaller when conservative accounting is relatively high.

However, Table 6 finds that the coefficient of *C_SCORE* is significantly positive (coefficient 0.089, *t*-statistic 1.800) in the pessimistic or less optimistic forecast subgroup, as shown in column (2). For the pessimistic or less optimistic forecast subgroup, firms with a greater degree of conservative reports exhibit larger magnitude of management forecast bias.

5.1.5 Regression results on the effects of operational uncertainty

While Section 5.1.3 documents a significantly positive relationship between accounting conservatism and managers' forecast biases, this relationship could be less pronounced in firms that operate in business environments that are highly uncertain, as stated in hypothesis H1a. To test hypothesis H1a, this study estimated Equation (9) using *C_SCORE* as the measure of conservatism. Equation (9) includes the interaction term, C_SCORE_t *x Uncertain* indicator (i.e., *CFOVOL*, *SALEVOL* and *OPERCY*), as well as each individual indicator. Based on the moderator regression analysis, this study focused on the interaction between *C_SCORE* and an operations uncertainty indicator. The results are reported in Table 7.

Table 7 reports that the coefficients on *C_SCORE* continue to be significantly positive which is consistent with the main regression results in Table 5. In particular, in Model 1 and Model 3, the coefficients on the interaction term, *C_SCORE x CFOVOL* and *C_SCORE x OPERCY*, are -0.194 and -0.176 with associated *t*-statistics of -2.050 and -1.900, respectively. These findings reflect a negative and statistical significance at the 5 percent level. The results suggest that the increase in operational uncertainty for firms with conservative reports considerably induces higher optimistic forecasts. The results in Table 7 are generally consistent with hypothesis H1a, suggesting that the impact of conservatism on reducing forecast optimism is less pronounced for firms operating in business environments with high uncertainty than firms operating in low uncertainty environments. This is particularly true for firms that face higher volatility in cash flow and undergo longer operating cycles.

5.1.6 Regression results on the effects of corporate governance

Hypothesis H1b predicted that the relationship between higher degree of conservatism and less optimistically biased forecast was more pronounced for firms with stronger corporate governance than for firms with weak corporate governance. Table 8 reports the results from the specification model of Equation (10). This study included the proxies of corporate governance (i.e., outside director, CEO/Chairman separation, and board size) and their interaction term with the measure of conservatism, *C_SCORE*, to test research hypothesis H1b.

The results of Model 1 in Table 8 report that the coefficient on interaction term, *C_SCORE x OUTDIR,* is positive and statistically significant at the 1 percent level (coefficient = 0.411, *t*-statistic = 3.680). This suggests that the increased proportion of outside directors by firms with higher degree of conservative reports considerably reduces management's overestimated future earnings, supporting hypothesis H1b. In Model 3, the coefficient estimate for the interaction term *C_SCORE x BRDSIZE* is -0.261 with an associated *t*-statistic of -2.550, which is statistically significant at the 5 percent level. However, this finding does not support the prediction made in this study. Model 2 shows that the coefficient on *C_SCORE x NONDUAL* is not statistically significant. Overall,

these results suggest that the impact of conservatism in reducing the high estimated future earnings is more pronounced for firms with highly effective outside directors.

5.1.7 Endogeneity issue

Based on past studies, several variables were controlled for in the regression tests of this study. Despite these precautions, regression tests were still found to be affected by problems generally faced by correlated omitted variables and endogeneity. To deal with these concerns, a two-stage instrumental variables approach (IV-2SLS) was used to bring robustness to the findings in this study. Specifically, even though a distinct set of estimation period (yearly) was used to measure conservatism, the accounting method chosen by the manager had inevitable influence on the accounting conservatism level. This effect posed a potential problem if the omitted variables happened to be correlated with both conservative accounting policies and forecast disclosure decisions. Such a problem could occur if, for instance, factors that affect the choice of accounting method (e.g., managerial confidence, managerial risk-aversion or risk-taking) also affected the forecast decisions of managers. To address this concern, this study utilized instrumental variables, i.e., leverage ratio and dividend payment, during the first stage of regression in modelling accounting conservatism.

In this study the leverage ratio, defined as the ratio of the book value of short-term and long-term debts over the book value of total assets, was used as the instrumental variable. There is a tendency for firms that have higher leverage to utilize conservatism as the accounting policy choice (Khan and Watts 2009, Hui, Matsunaga, and Morse 2009). However, the relationship between leverage and bias in management earnings forecasts is improbable. The dividend payment, calculated as the annual dividend expenses divided by the book value of total assets, was also added into the model as an instrumental variable. It is possible that there is a positive relationship between the dividend and the overestimation of the firm's future investment returns made by managers. It can be reasoned that managers have the incentives to manipulate the firm's earnings at the expense of others, particularly the firm's minority shareholders and debt holders. As a result, higher dividend payment could increase the probability for a firm to employ conservative reports.

In the analysis, this study suspected that conservatism is endogenous. The model specification for a two-stage instrumental variables procedure is described as follows:

Stage one:

$$C\_SCORE_{i,t} = \delta_0 + \delta_1 \text{Leverage}_{i,t} + \delta_2 \text{Dividend}_{i,t} + \delta_{3\text{-}14} \text{Control variables}_{i,t} + \varepsilon_{i,t} \quad (13.1)$$

Stage two:

$$MEF\_Bias_{i,t} = \gamma_0 + \gamma_1 C\_SCORE_{i,t} + \gamma_{2\text{-}13} \text{Control variables}_{i,t} + \varepsilon_{i,t} \quad (13.2)$$

As a means of assessing the possibilities of endogeneity problems, a test was conducted to see if estimates from the OLS and IV-2SLS were consistent. The result of the endogeneity test reported a chi-square statistic of 0.010 with a *p*-value of 1.000. Based on these values, it can be concluded that a two-stage least square does not generate estimates that are very different from OLS, suggesting that management earning forecast bias is not a predictor of conservative accounting.

5.2 The effects of accounting conservatism on stock market reactions to management earnings forecast disclosures

This section provides empirical evidence on the effects of accounting conservatism on the stock market's reactions to management earnings forecast disclosures. Table 9 reports the distribution of sample firms, the average and median values of cumulative abnormal (or excess) returns and the percentage of positive signs of earnings forecast bias (where actual earnings is greater than forecast earnings) during the years 2005-2012. Of all the forecasting firms, 923 firm-years have the average and median values of cumulative abnormal returns and percentage of positive signs of earnings forecast bias of 1.670%, 1.190% and 55.69%, respectively. Firms that disclosed in the year 2009, which is 12.35 percent of the total samples, have the highest average value of cumulative abnormal returns and percentage of positive signs of earnings forecast bias of 3.398% and 62.28%, respectively. However, the average value of cumulative abnormal returns and percentage of positive sign of earnings forecast bias in the year 2012 slightly decreased to 0.350% and 48.25%, respectively.

Table 10 reports the distribution of sample firms, the average and median values of cumulative abnormal returns and the percentage of positive signs of earnings forecast bias by industry. Considering the distribution of sample firms by industry in Table 10, the property & construction industry has the highest percentage of disclosing firms. In comparison, consumer products industry has the highest mean of cumulative abnormal returns and the percentage of positive signs of earnings forecast bias (2.545% and 59.06%), while the services industry has the lowest mean of cumulative abnormal returns and the percentage of positive signs of earnings forecast bias (-0.079% and -0.875%).

5.2.1 Accumulative excess returns

Table 11 reports the average excess returns (or abnormal returns), and the accumulative excess returns from seven days prior to and seven days after the management forecast disclosure date. As shown in the table, a significant stock return change is visible around the disclosure date (day $t = 0$). The average daily excess returns on day -1, day 0 and day +1 are 0.800%, 0.604% and 0.095%, respectively. The cumulative abnormal returns in the three-day window (*MEFCAR*) is 1.670 percent and a *t*-statistic of 5.589 ($p<0.000$) which is significantly greater than zero at the 1 percent level. The findings provide empirical evidence that there are significant market reactions surrounding the forecasts disclosure date.

To ensure that management forecast disclosure conveys new information at the time of the disclosure, this study tested market reactions during the five-day and seven-day windows. Table 12 reports the results on the cumulative abnormal returns for selected windows; three-day (-1,+1), five-day (-2,+2) and seven-day (-3,+3), which centers around the management earnings forecast issue date (day *t*). The cumulative abnormal returns is calculated by using the market-adjusted returns method and the market and risk adjusted returns to corroborate the results. The formula is described in Chapter 4.

In Panel A of Table 12, the cumulative abnormal returns that was calculated using market-adjusted returns for five-day and seven-day windows, are 2.800% and 4.100%, respectively. Similarly, it can be seen in Panel B of Table 12 that by using the market and risk adjusted returns approach, the cumulative abnormal returns during the

three-day, five-day and seven-day windows are 5.700%, 10.200% and 15.400%, respectively. The finding reveals that the *t*-statistic on cumulative abnormal returns in all three selected windows in the sample period are significantly different from zero at the 0.01 level.

Figure 5.1 presents the distribution of average daily excess (or abnormal) returns from seven days prior and seven days after the management earnings forecast disclosure date (day = 0). This figure shows a sharp increase in average daily excess returns on the day prior to the management forecast date (day *t*-1). That is, the average excess returns of sample firms changes from 0.517% in day *t*-2 to 0.800% in day *t*-1, and then slightly declines to 0.604% on the disclosure date. Figure 5.1 suggests that the reason behind the movement in returns is due to the market's anticipation of management earnings forecasts before the disclosure date. In other words, the stock prices reflect earnings forecast news which are conveyed by the firm.

Figure 5.2 (a), (b) and (c) present the cumulative abnormal returns around the earnings forecast disclosures (*MEFCAR*) across the decile rank of *C_SCORE*, *CONSV_Accrual* and *CONSV_AvgRank*. Figure 5.2 (a) reports that the cumulative abnormal returns at the lowest decile of *C_SCORE* slightly increases from around -0.10% to 0.15% at the highest decile rank of *C_SCORE*. Figure 5.2 (b) reports that the *MEFCAR* increase at the lowest decile rank to the moderate decile rank of *CONSV_Accrual*. However, *MEFCAR* slightly decreases afterwards. Figure 5.2 (c) presents that the cumulative abnormal returns at the lowest decile of *CONSV_AvgRank* also slightly increases from around -0.025% to 0.14% at the highest decile rank of *CONSV_AvgRank*. Overall, the findings suggest that the cumulative abnormal returns around the earnings forecast disclosure date increase according to the degree of accounting conservatism.

5.2.2 Descriptive statistics

Panel A of Table 13 reports the descriptive statistics of the independent and dependent variables used in regression analysis. The table reports the descriptive statistics of *MEFCAR* (a three-day accumulated market-adjusted returns around the management earnings forecast disclosure date), *C_SCORE* (conservatism score; estimated following

the approach of Khan and Watts (2009)), *CONSV_Accrual* (average non-operating accruals; scaled by total assets over the preceding five years, then multiplied by -1), *CONSV_AvgRank* (average rank of the two former conservatism measures; decile ranking; rescaled to range from 0 to 1), *SIZE* (natural logarithm of the market value of equity), *DEBT* (book value of total debt divided by book value of total assets), *MTB* (market value of equity divided by book value of equity), *EPS* (earnings before extraordinary items divided by number of outstanding common shares), *BV* (total assets less total liability, divided by number of outstanding common shares), *NEWS* (indicator variable; identified as bad news with assigned value '1' if the sign of cumulative abnormal returns is negative, good news with assigned value '0' if the sign of returns is positive), and *STD_XRET* (decile ranking of idiosyncratic return volatility; rescaled to range from 0 to 1).

Over the entire sample period, *MEFCAR* has the mean and medium values of 1.700% and 1.200%, respectively. The mean and median values of *C_SCORE* are 0.109 and 0.108, respectively. The mean (median) values are 0.033 (0.029) for *CONSV_Accrual*, and 0.481 (0.444) for decile rank *CONSV_AvgRank*. With respect to the information asymmetry measure, *STD_XRET*, the mean and median values of the standard deviation of the 60-day daily excess returns (idiosyncratic returns volatility) are 2.270 and 1.922, respectively.

The control variables also exhibit reasonable variations; the mean and median values of the natural logarithm of market value of equity (*SIZE*) are 16.202 and 16.084, respectively. The mean and median values of debt ratio (*DEBT*) are 0.478 and 0.491, respectively. The mean and median values of market-to-book ratio at the beginning of the fiscal year (*MTB*) are 2.365 and 1.454, respectively. The mean (median) values of *EPS* and *BV* are 2.566 baht (0.740 baht) and 14.170 (4.970), respectively. About 45.72% (422 firm-years) of the sample belongs to firms with disclosed management earnings forecasts that are considered as bad news (*NEWS*).

Panel B of Table 13 presents the correlation matrix for the variables used in regression. The lower left-hand portion of the table reports Pearson's product moment correlation, while the upper right-hand portion reports Spearman's rank-order correlation.

In this study, Pearson's correlations were mainly used for interpretation purposes since they are found to be consistent with Spearman's rank-order correlations. The correlation between *MEFCAR* and *C_SCORE* is significantly positive; the Pearson's correlation coefficients on *C_SCORE* is 0.662. With a correlation coefficient of 0.075, the *C_SCORE* conservatism measures are significantly and positively correlated with *CONSV_Accrual*. The correlation between *MEFCAR* and *STD_XRET* (standard deviation of idiosyncratic returns volatility) is significantly negative which is consistent with the adverse selection effects arising from information asymmetry. Conversely, the conservatism measures, *C_SCORE* and *CONS_Accrual*, exhibit a significantly positive correlation with *STD_XRET* which have correlation coefficients of 0.177 and 0.139, respectively.

The positive correlation between conservatism and information asymmetry proxy is consistent with prior literature. According to LaFond and Watts (2008), when more information asymmetry exist between managers and investors, increased use of conservatism is demanded. In addition, *MEFCAR* exhibits a significantly positive correlation with *EPS* (correlation coefficients of 0.078) while exhibiting a significantly negative correlation with *SIZE*, *DEBT* and *NEWS*.

The results from correlation analysis, as shown in Panel B in Table 13, also reveal that *C_SCORE* is negatively correlated with *SIZE*, *DEBT* and *NEWS*, in which the correlation coefficients are -0.071, -0.207 and -0.501, respectively. The *C_SCORE* is strongly and significantly negatively correlated with *NEWS* which indicates that conservatism is highly correlated with less negative cumulative abnormal returns when management forecasts are released.

5.2.3 The effects of conservatism on stock market reactions to management earnings forecasts

To investigate the informational role of conservatism and management earnings forecasts for capital market investors, this section examines the effects of conservative accounting on market reactions to management earnings forecasts. To test hypothesis H2, this study regressed cumulative market-adjusted returns over a three-day window around

the management forecast date on conservatism measures and control variables, as shown in Equation (11). Expected returns is calculated by using a market-adjusted model.

Table 14 reports the regression results for hypothesis H2. In this model and all subsequent regressions, industry dummy variables were included. The *t*-statistics, presented in the parentheses below the coefficient, were corrected for heteroscedasticity. The results show that the overall model is significant in Model 1 (*F*-value = 274.39, $p<0.000$), Model 2 (*F*-value = 109.08, $p<0.000$) and Model 3 (*F*-value = 109.37, $p<0.000$). The models' explanatory power are high, as reflected by the adjusted R^2 of 0.678, 0.574 and 0.575 for Model 1, Model 2 and Model 3, respectively.

In Models 1, 2 and 3, the coefficients on conservatism are positive and statistically significant. As shown, the coefficient on *C_SCORE* is significantly positive (coefficient = 0.178, *t*-statistic = 18.850, $p<0.000$). Results also show that the positive coefficients remain highly significant (coefficient = 0.029, *t*-statistic = 1.900, $p<0.100$) when the measure of conservatism is non-operating accruals (*CONSV_Accrual*) while the coefficient = 0.012 and *t*-statistic = 2.320 ($p<0.050$) when the measure of conservatism is the scaled decile average rank (*CONSV_AvgRank*).

The positive coefficient on measures of conservatism suggest that better cumulative abnormal returns for firms is associated with a greater degree of conservatism. The effect of conservatism is also economically significant. For instance, the improvement in *CONSV_AvgRank* from the lowest to the highest decile is associated with an increase in the cumulative abnormal returns around management earnings forecast disclosure (*MEFCAR*) of approximately 21 percent (in Figure 5.2 (c)). This is equivalent to 16 percent of the price increase for the average sample firm in this study (with mean *MEFCAR* equals to 1.670 percent). Therefore, as shown in Table 14, the empirical findings suggest that cumulative abnormal returns are significantly higher for more conservatively reported firms, supporting hypothesis H2.

In terms of control variables, the coefficients on variables related to firm characteristics show that only the debt ratio (*DEBT*) and earnings per share (*EPS*) have the signs that support the prediction of this study. The results found a significantly

negative coefficient on debt ratio across all measures of accounting conservatism. That is, firms with greater leverage are found to experience more negative cumulative abnormal returns. The results show a significantly positive coefficient on earnings per share which is consistent with the argument that firms with larger earnings per share have better cumulative abnormal returns (Collins, Maydew, and Weiss 1997; Francis and Schipper 1999).

In addition, Table 14 reports that the coefficients on size of firm (*SIZE*) are negative and statistically significant when the conservatism measure is *CONSV_Accrual*. The result is consistent with the notion that because large firms are more information abundant, the reactions of the market when these firms disclose information would be expected to be less forceful (Bamber 1986, 1987). For instance, Bamber (1987), and Collins, Kothari, and Rayburn (1987) show that large firms have a rich information environment. In this type of information environment, several sources are available for investors to acquire information about their firms of interest. Thus, in the case of public management forecast disclosure, forecast information from larger firms would have smaller impact on the firm's security prices. In contrast, the earnings forecasts of small firms are perceived as useful information by investors because the information environment is considered weak. Consequently, earnings forecast information is viewed by investors as critical in assessing the firm's future cash flows. Thus, earnings forecasts in smaller firm were expected to have a much larger impact on the firm's stock returns.

The coefficients on book value of equity (*BV*) and news forecasts (*NEWS*) are shown in Table 14. Model 1, Model 2 and Model 3 report the negative and statistical significance at less than the 5 percent level across all measures of conservatism, making it inconsistent with the prediction of this study. Finally, the market-to-book ratio (*MTB*) is negatively associated with cumulative abnormal returns on *C_SCORE* conservatism measure – also not supporting the prediction.

In an additional test, this study used the market and risk-adjusted returns approach to estimate the daily excess returns by using the security market line (SML) equation. The results show that the coefficient on *C_SCORE* is significantly positive

(coefficient = 0.078, *t*-statistic = 5.590, $p<0.000$), supporting the main findings (the result is not tabulated).

5.3 The effect of conservatism on the relationship between information asymmetry and market reactions to management earnings forecasts

Table 15 reports the cross-sectional regression of the impact of accounting conservatism on the relationship between information asymmetry and cumulative abnormal returns around the management earnings forecast disclosure dare. In hypothesis H3, this study expected that for firms with high asymmetric information, accounting conservatism would positively affect cumulative abnormal returns. To test hypothesis H3, this study estimated Equation (12) using *C_SCORE* and *CONSV_Accrual* as measures of accounting conservatism and added the proxy for information asymmetry (*STD_XRET*). The tests focused on the interaction between accounting conservatism and information asymmetry.

In Table 15, Model 1 and Model 3 report that the coefficients of *STD_XRET* are significantly negative at -0.009 and -0.008, respectively. The results suggest that firms with greater information asymmetry experience stock returns reductions at the time management forecasts are disclosed, which is consistent with the prediction of this study and existing disclosure literatures.

In Model 2 and Model 4, this study added the interaction term, *CONSV x STD_XRET*, and *STD_XRET* variable, as shown in Equation (12). The results show that the coefficients of the interaction terms are positive and statistically significant at the 10 percent level on the *C_SCORE* and *CONSV_Accrual* (coefficients are 0.004 and 0.005, respectively). The results in Model 2 and Model 4 are generally consistent with the prediction, suggesting that accounting conservatism mitigates the negative relationship between abnormal returns and information asymmetry.

The coefficients on *STD_XRET* in Model 2 and Model 4 remain significantly negative across the regression model, with coefficients of -0.007 and -0.011, respectively. However, the results reveal that the coefficients of the conservatism measure are not significant.

Overall, this study found that the decrease in stock returns at the event of management forecast disclosure was larger when the information asymmetry problem was more serious. Based on the coefficients on the interaction term (*C_SCORE x STD_XRET* and *CONSV_Accrual x STD_XRET*), this negative association between cumulative abnormal returns and information asymmetry was mitigated for firms with a greater degree of accounting conservatism. The finding supports hypothesis H3, implying that accounting conservatism weakens adverse problems and decreases agency problems that firms incur from information asymmetry between managers and investors when management forecasts are disclosed. In addition, the results are consistent with prior literature that conservatism limits the manager's incentives and ability to overstate performance and hide bad news about future cash flows from investors (LaFond and Roychowdhury 2008; LaFond and Watts 2008), which in turn reduces stock returns reductions when management forecasts are disclosed.