FAMILY OWNERSHIP CONTROL AND EARNINGS MANAGEMENT: EVIDENCE FROM HONG KONG FIRMS

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Abstract

This study examines the impact of family ownership control on earnings management for firms operating in Hong Kong. We find evidence that family-controlled firms are less likely to engage in earnings management activities in the earnings management settings to avoid reporting an earnings decline and to avoid reporting a loss than non-family-controlled firms. Additionally, we observe that deferred tax expense is useful in detecting earnings management in the earnings management settings to avoid reporting an earnings decline, to avoid reporting a loss, and to avoid failing to meet or beat the consensus analysts' earnings forecast. Moreover, we find that the positive association between deferred tax expense and earnings management is weakened significantly by family ownership control. Overall, the empirical evidence indicates that lower earnings management is more prevalent in family-controlled firms compared to non-family-controlled firms. This finding is consistent with a greater alignment of interest between controlling and outside owners, rather than the expropriation by the controlling families which can be achieved by managing reported earnings.

Keywords: Family ownership control, earnings management, deferred tax expense

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1. Introduction

Institutional factors have a significant impact on the private benefits of control and managerial incentives for financial reporting (Ball et al., 2003). Family-controlled firms differ from non-family-controlled firms in the motivations and the ability to monitor earnings management along several dimensions. On the one hand, due to substantial shareholdings and the presence of family members on the board and management team, controlling families have the ability and opportunity to maximize their private benefits by expropriating value from minority shareholders. DeAngelo and DeAngelo (2000) find that the owners of family-controlled firms extract private benefits at the cost of minority shareholders. Fan and Wong (2002) find that where controlling family ownership is widespread, financial reporting is less transparent. These arguments (and findings) suggest that family-controlled firms are more prone to earnings manipulation. On the other hand, controlling families are long-term shareholders and their substantial shareholdings insulate family-controlled

firms from the market for corporate control, thus alleviating the pressure on managers to manage earnings upward to meet targets to avoid being disciplined by forced resignation or takeover. Moreover, the greater engagement of controlling family members in daily management and their long tenures with the firm make them potentially better monitors of management. These arguments suggest that family-controlled firms are less likely to engage in earnings management.

Existing literature on the effect of family control on earnings management is somewhat mixed. Several studies suggest that family-controlled firms are less likely to manage earnings (e.g., Jiraporn and Dadalt, 2009; Ali et al., 2007; Wang, 2006) and have better performance (e.g., Anderson and Reeb, 2003). However, other studies suggest that controlling families may use earnings management to obscure the reported earnings and hide expropriation from minority shareholders (e.g., Warfield et al., 1995; Shleifer and Vishny, 1997; Fan and Wong, 2002; Francis et al., 2005; Jaggi et al., 2009). Given these opposing theoretical viewpoints and findings on the impact of family

control, and that family ownership is especially prevalent in the Asian economies (Jaggi et al., 2009), additional evidence on the impact of family control on earnings management in an Asian setting such as Hong Kong is warranted, and has implications for regulators and policymakers in the region in improving financial reporting quality.

The objective of this study is to examine the impact of family ownership control on earnings management in Hong Kong both *directly* by examining whether family-controlled firms are more or less likely to engage in earnings management than non-family controlled firms, and *indirectly* by investigating whether the association between earnings management and deferred tax expense is weaker in family-controlled firms. Our study focuses on three earnings management settings based on Burgstahler and Dichev (1997): (1) earnings management to avoid earnings decline; (2) earnings management to avoid a loss; and (3) earnings management to avoid failing to meet or beat consensus analysts' earnings forecasts. Therefore, we consider earnings management for firms operating at three different earnings management settings.

We examine deferred tax expense for several reasons. First, while previous research suggests that deferred tax expense is helpful in detecting earnings management (e.g., Mills and Newberry, 2001; Phillips et al., 2003; Joos et al., 2003; Hanlon, 2005), research is warranted to consider whether the association between deferred tax expense and earnings management is stronger or weaker in family-controlled firms in comparison with non-family-controlled firms because family firms face the agency problems that are different from the agency conflict in non-family firms. Second, accounting researchers have criticized the use of discretionary accruals to measure earnings management. For example, Guay et al. (1996) show that accrual measures developed using five different models display significant measurement error. Moreover, McNichols (2002) argues that the complexity associated with modeling abnormal accruals is daunting, and the construct validity associated with a proxy based on aggregate accruals is low. Therefore, we focus on the association between deferred tax expense and earnings management to achieve earnings targets.

We carry-out our study using Hong Kong firms because family ownership is the common form of organization for publicly traded firms in Hong Kong (see, e.g., Cheng and Firth, 2006) and generally in such Asian economies as Indonesia, Malaysia, Singapore and Taiwan (Fan and Wong, 2002). In fact, Hong Kong has the third highest percentage of family ownership of listed companies in the region after Indonesia and Malaysia (SCMP, 2002). Additionally, the ten most prominent business families control 32.1% of all corporate

assets in Hong Kong (Tsui and Stott, 2004). Family firms in Hong Kong also routinely appoint family members to corporate boards and senior management positions (Jaggi et al., 2009). Finally, according to 1994 statistics, family ownership of Hong Kong firms was worth approximately US$155 billion, or 60% of the total market capitalization (Weidenbaum and Hughes, 1996).

Our empirical results show that family-controlled firms have lower earnings management in the earnings management settings of avoid reporting an earnings decline and to avoid reporting a loss when compared to non-family-controlled firms. Moreover, we observe that deferred tax expense is significantly positively associated with earnings management in the earnings management settings to avoid reporting an earnings decline, earnings management to avoid reporting a loss, and to just meet or beat the consensus analysts' earnings forecast. We also find that the positive association between deferred tax expense and earnings management is moderated by family ownership control for the settings of earnings management to avoid reporting an earnings decline and to just meet or beat the consensus analysts' earnings forecast. Overall, these findings indicate that family-controlled firms are less likely to engage in earnings management than non-family-controlled firms.

This study makes several important contributions. First, it adds to the body of literature on the effects of the family-controlled organizational structure on earnings management and the quality of earnings. Our findings are consistent with the argument that there is less pressure on family-controlled firms to manage earnings to look good in the short-term, since the controlling family has a long-term interest in the firm. Our results do not support the argument that family ownership control leads to greater earnings management because controlling shareholders attempt to expropriate from minority shareholders. Given the similarities in the institutional arrangements of Hong Kong and other countries in East and Southeast Asia (e.g., Taiwan, Singapore and Malaysia), these findings should provide useful insights for policymakers in those countries. Second, our findings indicate that deferred tax expense is useful for detecting earnings management in firms operating in an Asian institutional environment with low corporate tax rates, such as Hong Kong, which differs considerably from the U.S. This suggests that the results of Phillips et al. (2003) are generalizable to a broader array of institutional settings. Third, our findings provide valuable information to financial statement users, such as analysts and investors, for assessing the quality of corporate earnings, especially those of family-controlled firms.

The remainder of this paper is organized as follows. Section 2 contains discussion on the development of the hypotheses. Section 3 describes the research design. Section 4 reports the empirical results. Finally, Section 5 provides a summary and conclusions.

2. Hypotheses development

2.1. Family ownership control and earnings management

There are two contrasting views about the impact of family ownership control on earnings management. The first suggests that family ownership control may not give rise to higher earnings management as founding families will limit the ability of managers to manipulate earnings, and there will be less pressure on management to manage earnings in the short-term because the controlling family will have a long-term interest in the firm (Jiraporn and DaDalt, 2009). This particular view is consistent with family control reducing the Type I agency problem (i.e., conflict between managers and shareholders) as described by Ali et al. (2007). However, the opposite view suggests that earnings management is more pronounced in firms where family ownership control is greater due to weaker investor protection (Leuz et al., 2003) and the majority shareholders' incentive and ability to expropriate minority shareholders' interests (Fan and Wong, 2002). Family firms tend to be less independent (Anderson and Reeb, 2003; 2004) and family control weakens the positive association between independent board and financial reporting quality (Jaggi et al., 2009). This second view is consistent with a firm conducting business in an institutional environment in which the Type II agency problem (i.e., conflict between controlling shareholder and minority shareholders) is more pronounced. Accordingly, the overall effect of family control on earnings management depends on whether the Type I or Type II agency problem is foremost.

Given the different expectations about the influence of family control on earnings management, it is not entirely clear which association dominates in Hong Kong. However, we conjecture that there is a negative association between family ownership control and earnings management in Hong Kong for at least five reasons. First, families are expected to hold an undiversified and concentrated equity position in their firms. Thus, unlike the free-rider problem associated with small, atomistic shareholders, families are likely to have strong incentives to monitor managers (Demsetz and Lehn, 1985). Second, families usually have much longer investment horizons than other shareholders, which help to mitigate short-sighted investment decisions made by managers

(Stein, 1988; 1989; James, 1999; Kwak, 2003). Third, the substantial shareholdings of controlling families insulate family-controlled firms from the market for corporate control, thus alleviating the pressure on managers to manage earnings upward to meet targets and benchmarks to avoid being disciplined by forced resignation or takeover. Fourth, families have better knowledge of their firms' business activities, which allows them to provide superior monitoring of managers (Anderson and Reeb, 2003). Finally, controlling families care about their reputational capital because they view their firms not just as a means of funding current consumption, but as an asset to benefit their descendants (Jiraporn and DaDalt, 2009). We thus test the following hypothesis:

H1: All else being equal, there is a negative association between family ownership control and earnings management for Hong Kong firms.

2.2. Deferred tax expense and earnings management

Previous research suggests that deferred tax expense is helpful in detecting earnings management (see e.g., Mills and Newberry, 2001; Phillips et al., 2003; Joos et al., 2003; Hanlon, 2005). The rationale for a positive association between deferred tax expense and earnings management is that managers have greater discretion under generally accepted accounting principles (GAAP) than under tax rules. For example, GAAP allows flexibility in estimating the provision for bad debts, whereas tax rules allow a deduction only for bad debts actually written off. Similarly, there is more discretion in selecting useful lives for depreciation under GAAP than under tax rules. There is also greater flexibility in revenue recognition under GAAP. Thus, if managers decide to manage earnings upwards to meet benchmarks or targets, they can use the flexibility afforded under GAAP in ways that do not affect taxable income. The greater the financial reporting discretion exercised by managers, the greater the temporary book-tax differences and, therefore, the greater the deferred tax expense.

Phillips et al. (2003) examine the incremental usefulness over total accruals and abnormal accruals (derived from two Jones-type models) of deferred tax expense in detecting earnings management in the U.S. They find that deferred tax expense is incrementally useful beyond total accruals and abnormal accruals for detecting earnings management to avoid an earnings decline and to avoid a loss. However, it is not clear whether deferred tax expense is useful in detecting earnings management among Hong Kong firms because of their noticeably different ownership structure and institutional environment compared with firms

operating in the U.S. (Fan and Wong, 2002; Cheng and Firth, 2006). In fact, Hong Kong firms are characterized by a personal networking system and family control. It is also customary among Hong Kong firms to have concentrated family ownership and to appoint family members to the corporate board (Jaggi et al., 2009). Moreover, compared to western countries such as the U.S., the low corporate tax rate regime in Hong Kong could potentially weaken the incentives to manage earnings and the association between deferred tax expense and earnings management among Hong Kong firms. Specifically, any corporation carrying on a business enterprise in Hong Kong may be liable to pay Hong Kong profits tax. Profits sourced in Hong Kong are taxed at the low corporate tax rate of 16.5%, whereas profits that are sourced outside of Hong Kong (also known as "offshore profits") benefit from a zero corporate tax rate, even when later remitted back to Hong Kong (Lee, 2008).

Based on the Philips et al. (2003) finding of a positive association between deferred tax expense and earnings management, we thus test the following hypothesis:

H2: All else being equal, there is a positive association between deferred tax expense and earnings management for Hong Kong firms.

2.3. The impact of family ownership control on the association between deferred tax expense and earnings management

Given the contrasting points of view about the influence of family control on earnings management; family control is associated with lower earnings management or improved earnings quality only if the benefits of family control in reducing the Type I agency conflicts exceed the cost of increased Type II agency conflicts. As is argued for H1 above, we expect that the undiversified and concentrated family ownership, longer investment horizons, insulation from the market for corporate control, superior business and operational knowledge and care for reputation by controlling families to significantly reduce the

incentive of family firms to manipulate earnings numbers to meet targeted earnings. Thus, compared to non-family-controlled firms, family-controlled firms are less likely to use deferred tax expense to manipulate earnings. Based on this reasoning, we expect that the positive association between deferred tax expense and earnings management (H2) is moderated in family-controlled firms, compared to non-family-controlled firms. We thus test the following hypothesis:

H3: All else being equal, the positive association between deferred tax expense and earnings management is moderated by family ownership control for Hong Kong firms.

3. Research Design

3.1. Sample selection and data collection procedures

We initiated the sample selection process by searching the *Global Vantage* Database for Hong Kong firms for the fiscal year of 2005-06. Global Vantage includes 790 Hong Kong firms for which there is financial data for 2005-06. Consistent with previous research on deferred taxes (e.g., Phillips et al., 2003; Hanlon, 2005), we exclude financial firms and utilities (152 firms) and firms incorporated outside Hong Kong (25 firms), as they have different financial and tax-reporting incentives (Joos et al., 2003). We also exclude firms that were delisted, inactive or liquidated (8 firms), firms that changed their fiscal year-end (1 firm), and firms that were subject to takeover (1 firm). We manually collected data on corporate governance and family control variables from the annual reports of the sample firms for 2005. Because 61 firms had missing data, our final sample for empirical analysis consists of 542 firms. We provide a summary of the sample reconciliation in Table 1. In addition, due to a lack of analyst forecast data, the sample for the just meeting or beating the consensus analyst earnings forecast setting comprises only 105 firm observations. We use a probit model with binary measures of each of the three earnings management proxies as the dependent variable.

Table 1. Sample Reconciliation

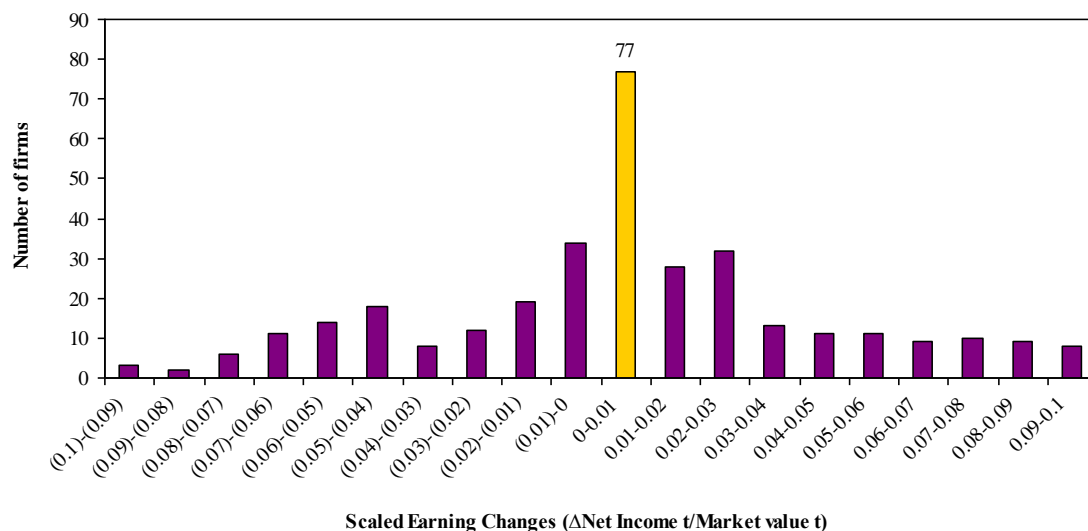|	2005 Financial Year
All firms in the Global Vantage Database	790
Less:	
Financial firms and utilities	(152)
Foreign firms (incorporated outside of Hong Kong)	(25)
Delisted, inactive, or liquidated firms	(8)
Firm that changed accounting date	(1)
Firms that were taken over	(1)
Firms with missing data	(61)
Final sample of firms for empirical analysis	542

3.2. Dependent Variable

The dependent variable for our empirical tests is earnings management. Following Burgstahler and Dichev (1997) and Philip et al. (2003), we employ three earnings targets to detect earnings management for Hong Kong firms.

Our first earnings target is the setting of earnings management to avoid reporting an earnings decline. Burgstahler and Dichev (1997) present evidence of earnings management by documenting a higher incidence of zero or small increases in earnings than expected in cross-sectional distributions of annual scaled earnings change because managers have strong incentives to avoid reporting an earnings decline. We replicate
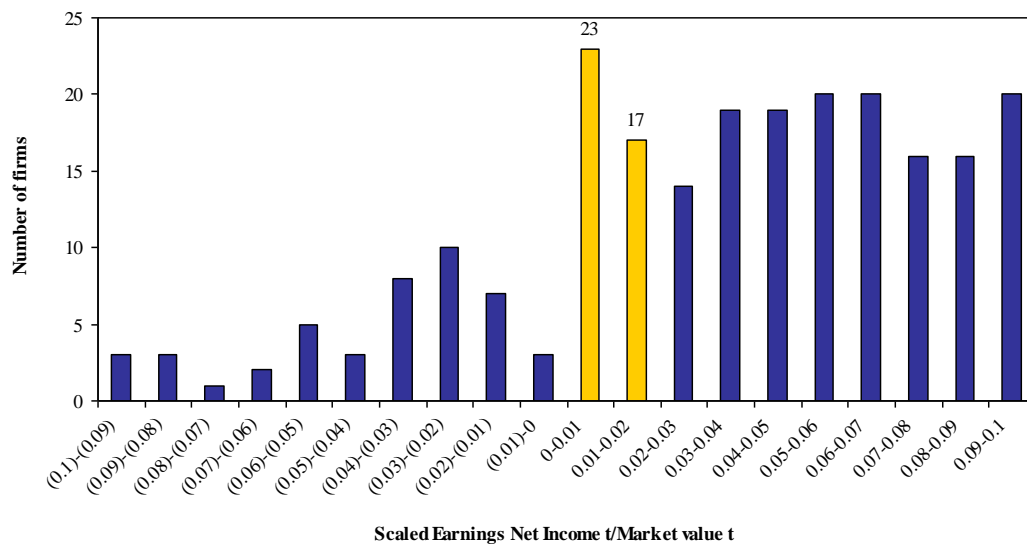
Burgstahler and Dichev's (1997) results in terms of scaled earnings in Figure 1. The unusually high number of observations in the zero and slightly positive earnings change interval (n = 77 firms) is in line with Burgstahler and Dichev's (1997) findings of a higher incidence of zero or small increases in earnings than expected in cross-sectional distributions of annual scaled earnings change. Thus, EM1 in our study is a dummy variable that equals 1 if the change in firm i's net income in year t divided by the market value of equity at the end of year t is ≥ 0 and < 0.01, and 0 otherwise.

Figure 1. Frequency of Firms across Intervals of Scaled Earnings Changes

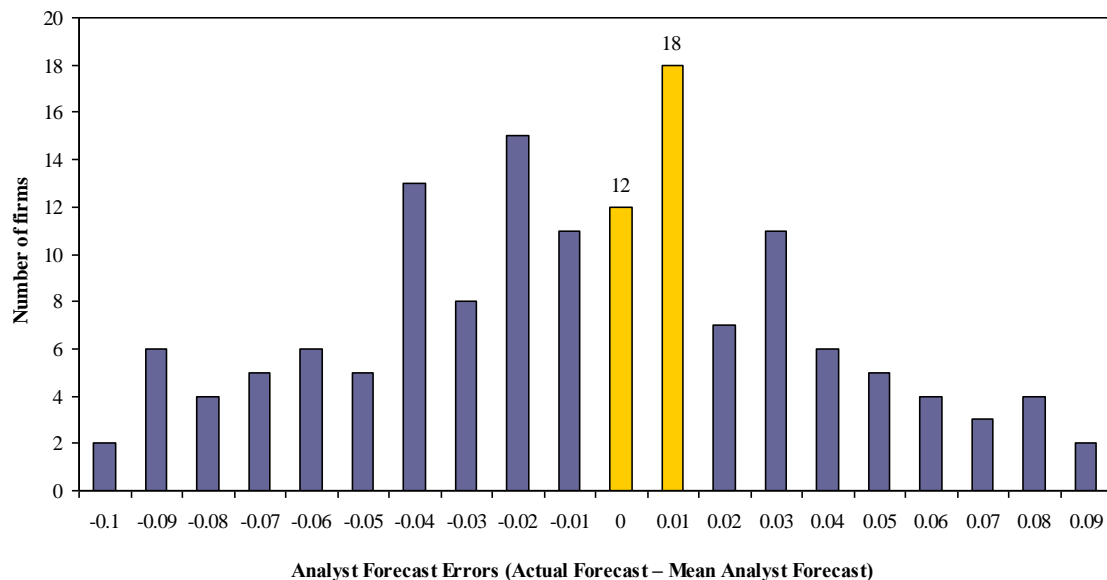**Scaled Earning Changes (ΔNet Income t/Market value t)**

Our second earnings target is the setting of earnings management to avoid reporting a loss. Burgstahler and Dichev (1997) assert that managers have significant incentives to avoid reporting a loss. They provide evidence of earnings management by detailing a higher frequency of zero and slightly positive earnings levels. We replicate Burgstahler and Dichev's (1997) scaled earnings levels results

in Figure 2. Consistent with their findings, there is an unusually high number of observations in the zero and slightly positive earnings interval (n = 23 and 17 firms, respectively). Hence, EM2 in our study is a dummy variable that equals 1 if firm i's net income in year t divided by the market value of equity at the end of year t is ≥ 0 and < 0.02, and 0 otherwise.

Figure 2. Frequency of Firms across Intervals of Scaled Earnings

Scaled Earnings Net Income t/Market value t

Our third earnings target is earnings management to avoid failing to meet or beat the consensus analysts' earnings forecast (see e.g., Degeorge et al., 1999). Previous research by Bartov et al. (2002) and Kasznik and McNichols (2002) shows that the market normally rewards firms that meet or beat the consensus analysts' forecast. Figure 3 reports the mean analysts' earnings forecast errors in 1 cent per share intervals. Our

findings are reasonably consistent with those of Burgstahler and Eames (2002) in that there is a higher incidence of firms in the 1 cent per share interval (n = 18 firms). However, we have a somewhat lower frequency of firms in the 0 cents per share forecast error interval (n = 12 firms). EM3 in our study is a dummy variable that equals 1 if firm *i*'s analyst earnings forecast error in year *t* is $\geq$ 0 and < 0.01, and 0 otherwise.

Figure 3. Frequency of Firms across Intervals of Analyst Forecast Errors

Analyst Forecast Errors (Actual Forecast – Mean Analyst Forecast)

3.3. Independent variables

The independent variables are family ownership control (FAMC), deferred tax expense (DTE) and the interaction term FAMC*DTE. For FAMC, we follow Anderson and Reeb (2003) and use the fraction of equity ownership of the family as the

measure of ownership concentration.[35] Based on Morck et al. (1988) and Hermalin and Weisbach

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[35] Family ownership is calculated as the fraction of ordinary shares held by family directors as the sum of beneficial interests at the personal, family, and corporate levels. It represents the ultimate voting control of the family over the firm.

(1991), we use a cut-off point of 20% ownership to identify firms in our sample under family control. We manually collect data for this variable from the annual financial reports. We expect a negative coefficient for FAMC. We measure DTE as deferred tax expense divided by lagged total assets (Phillips et al., 2003). We obtain data for this variable from *Global Vantage* for each firm in our sample. We expect a positive coefficient for DTE as higher levels of deferred tax expense should reflect higher levels of earnings management (Phillips et al., 2003). Finally, in terms of FAMC*DTE, we expect it to have a negative coefficient as greater family control is expected to moderate the positive association between deferred tax expense and earnings management.

3.4. Control variables

The control variables include total accruals (TAC), modified Jones abnormal accruals (AAC), and change in cash flow from continuing operations (ΔCFO), (see e.g., Phillips et al., 2003). We also incorporate several commonly used firm-specific control variables from the earnings management literature (see e.g., Warfield et al., 1995; Bartov et al., 2001) in our regression model: firm size (FSIZE), the debt-to-equity ratio (DE), the market-to-book ratio (MBK), foreign subsidiaries (FOREIGN), and big-4 auditor (BIG4). All of the data for the control variables are collected from *Global Vantage*.

We use the total accruals model (Healy, 1985) and the modified Jones abnormal accruals model (Dechow et al., 1995) as proxies for accruals that indicate greater earnings management. Based on Healy (1985), total accruals is calculated as follows:

$$TAC_{it} = EBEI_{it} - (CFO_{it} - EIDO_{it}) \quad (1)$$

where:

TAC_{it}= total accruals of firm i in year t;

$EBEI_{it}$= income before extraordinary items of firm i in year t;

CFO_{it}= cash flow from operations of firm i in year t; and

$EIDO_{it}$= extraordinary items and discontinued operations from the statement of cash flow in year t.

We estimate the modified Jones abnormal accruals model based on Dechow et al. (1995) as follows:

$$TAC_{it} = \alpha_0 + \beta_1(\Delta Sales_{it} - \Delta AR_{it}) + \beta_2 PPE_{it} + \varepsilon_{it} \quad (2)$$

where:

$\Delta Sales_{it}$= change in sales of firm i from year $t-1$ to t;

ΔAR_{it}= change in accounts receivable from operating activities of firm i from year $t-1$ to t;

PPE_{it}= gross property, plant, and equipment of firm i in year t; and

ε_{it}= error term.

All of the variables are divided by total assets at the end of year $t-1$. Moreover, subtracting ΔAR_{it} from $\Delta Sales_{it}$ modifies the Jones (1991) accruals model such that credit sales are assumed to be discretionary. Consistent with Dechow et al. (1995), we estimate the modified Jones model using only the sub-sample of firms that we assume have no earnings management, and consequently exclude ΔAR_{it} from the estimation of Eq. (2). We estimate this model separately for each two-digit SIC group. We combine the two-digit SIC codes when there are less than eight observations in a group. We use the parameter estimates of Eq. (2) to calculate abnormal accruals (AAC).

We also include ΔCFO in our regression model. ΔCFO controls for the effect that a change in cash flow from continuing operations has on a firm's status as an earnings managing firm. Normally, increases in operating cash flow suggest increases in current performance, and reduce the need to manage earnings upwards to achieve a zero or slightly positive earnings change or to avoid failing to meet or beat the consensus analysts' forecast (Philips et al., 2003). We substitute ΔCFO with the level of cash flow from operations (CFO) to control for current performance in the setting of earnings management to avoid a loss.

FSIZE is also included as a control variable in our regression model. It is measured as the natural log of total assets. No sign prediction is made about the FSIZE coefficient. On the one hand, the larger the firm size, the less earnings management can be expected, as large firms have more intricate and effective internal control systems that reduce the likelihood of earnings manipulation by management (Kim et al., 2003). On the other hand, large firms may face greater pressure to meet or beat earnings targets (Barton and Simko, 2002). Myers and Skinner (2000) analyze the earnings growth of firms for at least 14 quarters and provide evidence that large firms do not report accurate earnings.

We control for the effects of leverage, growth, foreign subsidiary involvement, and external monitoring on earnings management in our regression model by including the DE, MBK, FOREIGN, and BIG4 control variables. We measure DE as total debt divided by total assets, and expect it to be positively associated to earnings management (Warfield et al., 1995). MBK is measured as the market value of common equity divided by the book value of common equity. We expect MBK to be positively associated to earnings management (Klein, 2002). We measure FOREIGN as the natural log of one plus the total number of subsidiaries incorporated outside Hong Kong, and expect it to be positively associated to earnings management (Jaggi et al., 2009). Lastly, BIG4 is a dummy variable that equals 1 if the firm has a big-4

auditor, and 0 otherwise. We expect that firms audited by one of the big-4 auditing firms will engage in less earnings management (Bartov et al., 2001).

Finally, we include two-digit industry classification (*IND*) dummy variables in our regression model to control for industry effects (see e.g., Phillips et al., 2003).

3.5. Regression models

We estimate the following probit regression model to analyze the associations between family ownership control, deferred tax expense and earnings management:

$$EM_{it} = \alpha_0 + \beta_1 FAMC_{it} + \beta_2 DTE_{it} + \beta_3 ACC_{it} + \beta_4 \Delta CFO_{it} + B_5 FSIZE_{it} + \beta_6 DE_{it} + \beta_7 MBK_{it} + \beta_8 FOREIGN_{it} + \beta_9 BIG4_{it} + \beta_j \Sigma_j IND_{it} + \varepsilon_{it} \quad (3)$$

where: EM_{it}= earnings management of firm i in year t using the three earnings management targets (see above);

$FAMC_{it}$= dummy that equals 1 if the family ownership of firm i is greater than 20% of the common equity of firm i at the end of year t, and 0 otherwise;

DTE_{it}= deferred tax expense of firm i in year t divided by total assets at the end of year $t-1$;

ACC_{it}= accruals of firm i in year t using the two accruals measures (see above);

ΔCFO_{it}= change in cash flow from continuing operations of firm i from year $t-1$ to t divided by total assets at the end of year $t-1$;

$FSIZE_{it}$= natural log of the total assets of firm i at the end of year $t-1$;

DE_{it}= total debt of firm i in year t divided by total assets at the end of year $t-1$;

MBK_{it}= market value of common equity divided by the book value of common equity of firm i at the end of year $t-1$;

$FOREIGN_{it}$= natural log of 1 plus the total number of subsidiaries incorporated outside of Hong Kong in year t; and

$BIG4_{it}$= dummy that equals 1 if firm i had a big 4 auditor in year t, and 0 otherwise;

$\Sigma_j IND_{it}$= dummy that equals 1 if firm i is in industry j in year t, based on the two-digit SIC industry classification code, and 0 otherwise; and

ε_{it}= error term.

To determine whether family ownership control moderates the association between deferred tax expense and earnings management, we estimate the following probit regression model:

$$EM_{it} = \alpha_0 + \beta_1 FAMC_{it} + \beta_2 DTE_{it} + \beta_3 FAMC_{it} * DTE_{it} + + \beta_4 ACC_{it} + \beta_5 \Delta CFO_{it} + B_6 FSIZE_{it} + \beta_7 DE_{it} + \beta_8 MBK_{it} + \beta_9 FOREIGN_{it} + \beta_{10} BIG4_{it} + \beta_j \Sigma_j IND_{it} + \varepsilon_{it} \quad (4)$$

where:

$FAMC_{it}*DTE_{it}$= the interaction term whereby $FAMC_{it}$ is multiplied by DTE_{it}

4. Empirical results

4.1. Descriptive statistics and univariate analysis

We report the descriptive statistics and univariate analysis in Table 2. Panel A of Table 2 presents the results for firms with zero or slightly positive earnings changes (EM1 = 1) and the control firms (EM1 = 0). For the earnings management sample, the mean (median) FAMC is .416 (0), with values ranging from 0 to 1 and the mean (median) DTE is .016 (.014), with values ranging from -.175 to .385. In terms of the control sample, the mean (median) FAMC is .359 (0) and the mean (median) DTE is .001 (0).

The two samples in Panel A of Table 2 are statistically compared on a univariate basis using two-sided t-tests. We find no significant difference in either the mean or median FAMC between the EM1 = 1 and EM1 = 0 subsamples. However, the results show that the mean and median DTE are significantly larger in the earnings management sample than in the control sample (p < .01). Moreover for TAC, the mean is significantly larger in the earnings management sample than in the control sample (p < .01). The mean AAC is also significantly larger in the earnings management sample than in the control sample (p < .05). Finally, the means of the other control variables FSIZE, MBK, FOREIGN, and BIG4 are significantly larger in the earnings management sample than in the control sample (p < .10 or better).

Panel B of Table 2 presents summary statistics for the earnings level (EM2 = 1) setting compared with the control group (EM2 = 0). For both FAMC and DTE, there is no significant difference in either the mean or median between the EM2 = 1 and EM2 = 0 sub-samples. The means and medians for TAC and AAC are also not significantly different. For the other control variables, FSIZE, MBK, FOREIGN, and BIG4 have significantly larger means in the earnings management sample in than the control sample (p < .05 or better).

The descriptive statistics for the consensus analysts' earnings forecast setting are reported in Panel C of Table 2. The mean and median of FAMC do not differ significantly between the two groups, while the mean DTE of .012 is significantly greater than the control sample mean DTE of -.005 (p < .05). For TAC and AAC, the means and medians also do not differ significantly between the two groups. Finally, for the other control variables FSIZE, MBK, FOREIGN, and BIG4 have means that are significantly greater in the earnings management sample than in the control sample (p < .05 or better).

Table 2. Descriptive Statistics and Univariate Analysis

Panel A: EM Target 1 (Earnings Change) Samples

EM1 = 1	Mean	Std. Dev.	Minimum	Median	Maximum
FAMC	.416	.496	0	0	1
DTE	.016***	.365	-.175	.014***	.385
TAC	.097***	.770	-.372	.050	.921
AAC	.053**	.463	-.330	.027	.972
ΔCFO	.001	.139	-.887	.010	.376
FSIZE	7.231***	1.692	2.001	7.181	10.993
DE	.157	.400	0	.014	3.263
MBK	77.822***	87.309	0	29.001***	86.160
FOREIGN	1.737***	1.035	0	1.609*	4.263
BIG4	.857***	.352	0	1	1
EM1 = 0					
FAMC	.359	.480	0	0	1
DTE	.001	.013	-.027	0	.029
TAC	-.054	1.223	-.613	-.011	.944
AAC	-.032	.575	-.674	-.015	.516
ΔCFO	.285	.216	-.914	.001	.665
FSIZE	6.437	1.741	2.087	6.530	10.985
DE	.190	1.430	0	.012	1.629
MBK	40.177	34.158	0	7.500	67.960
FOREIGN	1.429	.935	0	1.386	3.497
BIG4	.671	.470	0	1	1

Panel B: EM Target 2 (Earnings Level) Samples

EM2 = 1	Mean	Std. Dev.	Minimum	Median	Maximum
FAMC	.350	.483	0	0	1
DTE	-.001	.003	-.012	0	.010
TAC	-.041	.123	-.412	-.029*	.373
AAC	-.008	2.591	-1.751	-.097***	2.072
CFO	.004	.124	-.508	.004	.376
FSIZE	7.017**	1.774	3.900	6.886**	10.607
DE	.128	.217	0	.047	1.211
MBK	52.149***	96.325	1.010	11.280	86.160
FOREIGN	1.738**	1.126	0	1.609	4.263
BIG4	.825**	.385	0	1	1
EM2 = 0					
FAMC	.369	.483	0	0	1
DTE	-.005	.143	-.027	0	.043
TAC	.103	3.632	-1.372	-.006	.944
AAC	-.006	.252	-.641	-.013	.767
CFO	.263	.945	-.892	.002	.538
FSIZE	6.512	1.750	2.087	6.638	10.985
DE	.189	1.384	0	.012	1.629
MBK	46.790	40.906	0	8.305	65.080
FOREIGN	1.452	.938	0	1.386	3.466
BIG4	.687	.464	0	1	1

Panel C: EM Target 3 (Analysts' Forecast) Samples

EM3 = 1	Mean	Std. Dev.	Minimum	Median	Maximum
FAMC	.404	.496	0	0	1
DTE	.012**	.004	-.010	.011	.016
TAC	-.012	.092	-.254	-.018	.178
AAC	-.039	.112	-.365	-.009	.164
ΔCFO	.013	.078	-.193	.018**	.227
FSIZE	7.982***	1.257	5.992	7.815*	10.563
DE	.113	.146	0	.042	.537
MBK	91.815***	30.825	0	18.610	186.160
FOREIGN	1.736**	1.100	0	1.792	4.263
BIG4	.830**	.380	0	1	1
EM3 = 0					
FAMC	.364	.482	0	0	1
DTE	-.005	.144	-.041	0	.063
TAC	.102	3.658	-1.613	-.009	1.082
AAC	-.003	.794	-.674	-.018	.906
ΔCFO	.266	.994	-.914	.001	.665
FSIZE	6.413	1.736	2.006	6.504	10.993
DE	.192	1.394	0	.012	2.038
MBK	47.190	44.753	0	7.830	96.93-
FOREIGN	1.448	.937	0	1.386	3.497
BIG4	.685	.465	0	1	1

Variable definitions: EM1 = 1 if the change in firm i's net income in year t divided by the market value of equity at the end of year t is ≥ 0 and < 0.01, and 0 otherwise; EM2 = 1 if firm i's net income in year t divided by the market value of equity at the end of year t is ≥ 0 and < 0.02, and 0 otherwise; EM3 = 1 if firm i's analyst earnings forecast error in year t is ≥ 0 and < 0.01, and 0 otherwise; FAMC = equals 1 if the family ownership control of firm i is greater than 20% of the common equity of firm i at the end of year t, and 0 otherwise; DTE = the deferred tax expense of firm i in year t, divided by the total assets at the end of year $t - 1$; TAC = the total accruals for firm i in year t based on Healy (1985); AAC = the modified Jones abnormal accruals model for firm i in year t based on Dechow et al. (1995); ΔCFO = the change in cash flow from continuing operations of firm i from year $t - 1$ to t divided by total assets at the end of year $t - 1$; CFO = the cash flow from continuing operations of firm i in year t divided by total assets at the end of year $t - 1$; FSIZE = the natural log of the total assets of firm i at the end of year $t - 1$; DE = the total debt of firm i in year t divided by total assets at the end of year $t - 1$; MBK = the market value of common equity divided by the book value of common equity of firm i at the end of year $t - 1$; FOREIGN = the natural log of 1 plus the total number of subsidiaries incorporated outside of Hong Kong in year t; and BIG4 = equals 1 if firm i had a big-4 auditor in year t, and 0 otherwise.

*, **, *** indicate significant differences between the mean (or median) of the earnings management target sub-samples at the 10%, 5%, and 1% levels (two-tailed p-values), respectively.

Our (unreported) Pearson pairwise correlation results indicate that for FAMC, there are significantly negative correlations between EM and FAMC in both the earnings change (EM1) and the earnings level (EM2) settings ($p < .05$, respectively), but not for the consensus analysts' earning forecast (EM3) setting. Moreover, DTE is positively and significantly correlated with EM1 and EM3 ($p < .05$ or better). We also find significantly positive correlations for the accrual measures TAC and AAC for the earnings change (EM1) setting ($p < .10$ or better), and for AAC for the analyst earning forecast (EM3) setting ($p < .10$ or better).

The other control variables relating to FSIZE, MBK, FOREIGN, and BIG4 have significantly positive correlations in the earnings change (EM1) setting ($p < .10$ or better), and FSIZE, MBK, and BIG4 have significantly positive correlations in the earnings level (EM2) setting ($p < .10$ or better). Additionally, MBK and FOREIGN have significantly positive correlations in the consensus analysts' earning forecast (EM3) setting ($p < .05$ or better). We note that the significantly positive correlation between BIG4 and the earnings change (EM1) and the earnings level (EM2) settings are unexpected.

Lastly, we find no significant correlations between DTE and TAC or between DTE and AAC, suggesting that multicollinearity between these variables is not problematic in our study.

4.2. Regression results

Table 3 reports the probit regression results (coefficient estimates with the *t*-statistics in parentheses and standard errors are corrected using the White (1980) procedure) that test H1 (whether there is a negative association between family ownership control and earnings management in Hong Kong), and H2 (whether there is a positive association between deferred tax expense and earnings management in Hong Kong).

For our first earnings management target regarding the earnings change setting, the FAMC coefficient is negative and significant ($p < .10$). We therefore find some support for H1 for this setting. Additionally, the DTE coefficient is positive and significant in both the total accruals and abnormal accruals regression models ($p < .05$), so H2 is supported by the empirical results. Moreover, in the total accruals regression model, the coefficients for TAC, MBK, and BIG4 are positive and significant ($p < .05$ level), as are the coefficients for FSIZE and FOREIGN ($p < .10$). Note that the positive coefficient for BIG4 is not in the expected direction. Finally, for the abnormal accruals regression model, we observe that the AAC coefficient is positive and significant ($p < .01$), as are the FSIZE, MBK, and BIG4 coefficients ($p < .05$).

For our second earnings management target concerning the earnings level setting, we find that the FAMC coefficient is significant ($p < .10$). Thus, we find some evidence in support of H1 for this setting. In the total accruals regression model, we find that the DTE coefficient is positive but is not significant. We also find that the coefficient of CFO is (unexpectedly) negative and significant ($p < .10$), whereas the coefficient of MBK is positive and significant ($p < .01$), as expected. Finally, for the abnormal accruals regression model, we observe that the DTE coefficient is positive and significant ($p < .10$), providing some support for H2. We also find that the coefficient of MBK is positive and significant ($p < .05$).

For the third earnings management target which considers the consensus analysts' earnings forecast setting, while the FAMC coefficient is negative (as expected) it is not significant, so we find no support for H1 for this setting. We also observe that the DTE coefficient is positive and significant in the total accruals and abnormal accruals regression models ($p < .05$ or better), indicating support for H2. Finally, in both the total accruals regression model and the abnormal accruals regression model, the coefficient for ΔCFO is positive and significant ($p < .10$ and $p < .05$, respectively) as expected.

In summary, the results provide support for H1 in terms of the settings of earnings management to avoid reporting an earnings decline and the setting of earnings management to avoid reporting a loss. However, we find no evidence of a negative association between family ownership control and to avoid failing to meet or beat the consensus analysts' earnings forecast. For H2, our results furnish support for this hypothesis for the settings of earnings management to avoid reporting an earnings decline, earnings management to avoid reporting a loss, and to avoid failing to meet or beat the consensus analysts' earnings forecast.

Table 4 reports the probit regression results (coefficient estimates with the *t*-statistics in parentheses and standard errors are corrected using the White (1980) procedure) for H3 (whether family ownership control has a moderating effect on the positive association between deferred tax expense and earnings management in Hong Kong). The interaction term FAMC*DTE is included in Eq. (4) to test this hypothesis.

For our first earnings management target relating to the earnings change setting, the FAMC*DTE coefficient is negative and significant ($p < .10$ or better). We thus find some support for H3 for this setting. Next, the DTE coefficient is positive and significant in both the total accruals and abnormal accruals regression models ($p < .01$). Moreover, in the total accruals regression model, the coefficients for TAC, ΔCFO, MBK, and BIG4 are positive and significant ($p < .05$ level or better), as are the coefficients for FSIZE and FOREIGN ($p < .10$). We note that the positive coefficient for BIG4 is not in the expected direction. Finally, for the abnormal accruals regression model, we observe that the coefficients for AAC, FSIZE, MBK, and FOREIGN are positive and significant ($p < .10$ or better), as is that (unexpectedly) for BIG4 ($p < .05$).

For our second earnings management target relating to the earnings level setting, we observe that while the FAMC*DTE coefficient is negative (as expected), it is not significant. Thus, we find no evidence in support of H3 for this setting. In the total accruals regression model, we find that the CFO coefficient is (unexpectedly) negative and significant ($p < .10$), whereas the coefficient of MBK is positive and significant ($p < .01$), as expected. Finally, for the abnormal accruals regression model, we find that the DTE coefficient is positive and significant ($p < .10$). We also observe that the coefficient of MBK is positive and significant ($p < .01$), as is that (unexpectedly) for BIG4 ($p < .10$).

Table 3. Probit Regression Model Results for Family Ownership Control and Deferred Tax Expense

	Predicted Sign	EM Target 1 (Earnings Changes)[a]		EM Target 2 (Earnings Level)[a]		EM Target 3 (Analysts' Forecast)[a]	
		Total Accruals	Abnormal Accruals	Total Accruals	Abnormal Accruals	Total Accruals	Abnormal Accruals
Intercept	?	2.187 (6.73)***	2.460 (6.96)***	1.979 (4.92)***	2.077 (5.67)***	.290 (.17)	.162 (.07)
FAMC	-	-.197 (-1.35)*	-.167 (-1.09)	-.244 (-1.47)*	-.269 (-1.59)*	-.363 (-.63)	-.560 (-.86)
DTE	+	4.318 (2.31)**	4.917 (2.45)**	.438 (.17)	.279 (1.33)*	187.93 (3.04)***	199.68 (1.75)**
ACC (TAC or AAC)	+	.137 (1.65)**	.181 (2.62)***	.248 (1.41)	-.013 (-.84)	3.904 (1.01)	1.083 (.33)
ΔCFO	+	.021 (.97)	.002 (.47)			7.744 (1.30)*	10.456 (1.70)**
CFO	+			-.040 (-1.55)*	-.003 (-1.02)		
FSIZE	?	.083 (1.65)*	.110 (1.97)**	.053 (.93)	.054 (.93)	.128 (.49)	.175 (.47)
DE	+	.014 (.19)	.009 (.39)	-.213 (-.51)	.129 (.33)	-2.38 (-1.08)	-2.415 (-.79)
MBK	+	.001 (2.38)**	.001 (2.23)**	.001 (2.35)***	.001 (2.13)**	.001 (.38)	.001 (.40)
FOREIGN	+	.102 (1.33)*	.051 (.71)	.008 (.09)	.013 (.14)	.053 (.19)	.283 (.88)
BIG4	-	.377 (1.95)**	.508 (2.25)**	.065 (.29)	.140 (.60)	.890 (.83)	.649 (.55)
Industry dummies		Yes	Yes	Yes	Yes	Yes	Yes
L.L. ratio		-202.94	-175.48	-136.79	-130.95	-57.04	-63.43
Total observations		542	504	542	504	105	95

Variable definitions: See Table 2

*, **, *** denote significance at the .10, .05, and .01 levels, respectively. The *p*–values are one-tailed for the directional hypotheses and two-tailed otherwise.

[a]Coefficient estimates with the *t*-statistics in parentheses. Standard errors are corrected using the White (1980) procedure.

Table 4. Probit Regression Model Results for the Interaction between Family Ownership Control and Deferred Tax Expense

	Predicted Sign	EM Target 1 (Earnings Changes)[a]		EM Target 2 (Earnings Level)[a]		EM Target 3 (Analysts' Forecast)[a]	
		Total Accruals	Abnormal Accruals	Total Accruals	Abnormal Accruals	Total Accruals	Abnormal Accruals
Intercept	?	2.247 (7.13)***	2.293 (6.76)***	1.803 (4.92)***	1.812 (4.94)***	2.627 (2.46)***	3.936 (3.30)***
FAMC	-	.160 (1.10)	.139 (.91)	.071 (.41)	.069 (.39)	.363 (1.22)	.406 (1.22)
DTE	+	5.425 (2.61)***	1.272 (5.00)***	1.464 (.81)	.481 (1.61)*	121.77 (2.53)***	118.52 (1.67)**
FAMC*DTE	?	-45.555 (-2.50)***	-28.830 (-1.30)*	-18.246 (-1.37)	-6.968 (-.68)	-161.528 (-2.36)***	-178.92 (-2.02)**
ACC (TAC or AAC)	+	.271 (3.16)***	.196 (2.85)***	.123 (1.13)	-.014 (-.10)	2.036 (1.63)**	-.259 (-.39)
ΔCFO	+	.039 (2.87)***	-.001 (-.39)			5.819 (2.95)***	6.089 (3.09)***
CFO	+			-.021 (-1.26)*	-.003 (-.85)		
FSIZE	?	.090 (1.75)*	.101 (1.85)*	-.003 (-.06)	-.001 (-.01)	.346 (2.30)**	.519 (3.26)***
DE	+	.036 (1.11)	-.090 (-.39)	-.024 (-.45)	.065 (.40)	-.739 (-1.01)	-.656 (-.88)
MBK	+	.001 (2.05)**	.001 (2.09)**	.001 (2.53)***	.001 (2.40)***	.001 (.63)	.001 (.97)
FOREIGN	+	.090 (1.24)*	.102 (1.36)*	.093 (1.04)	.089 (1.00)	.047 (.34)	.107 (.68)
BIG4	-	.415 (2.06)**	.358 (1.72)**	.264 (1.17)	.298 (1.37)*	.428 (1.15)	.668 (.75)
Industry dummies		Yes	Yes	Yes	Yes	Yes	Yes
L.L. ratio		-199.86	-181.64	-133.95	-131.25	-60.92	-51.13
Total observations		542	504	542	504	105	95

Variable definitions: See Table 2.

*, **, *** denote significance at the .10, .05, and .01 levels, respectively. The *p*–values are one-tailed for the directional hypotheses and two-tailed otherwise.

[a]Coefficient estimates with the *t*-statistics in parentheses. Standard errors are corrected using the White (1980) procedure.

Our third earnings management target considers the consensus analysts' earnings forecast setting. The FAMC*DTE coefficient is negative and significant ($p < .05$ or better), indicating support for H3 for this setting. We also find that the DTE coefficient is positive and significant in both the total accruals and abnormal accruals regression models ($p < .05$ or better). Finally, in the total accruals regression model the coefficients for TAC, ΔCFO and FSIZE are all positive and significant ($p < .05$, $p < .01$ and $p < .05$, respectively). We also observe that for the abnormal accruals regression model, the coefficients for ΔCFO and FSIZE are positive and significant (both $p < .01$).

As an additional analysis, we conduct separate regression tests on the sub-samples of family and non-family-controlled firms.[36] We divide our three earnings management setting samples (earnings change, earnings level, and consensus analysts' earnings forecasts) into high and low family ownership control groups based on the cut-off point of 20% ownership.[37] Our (unreported) results for the earnings change setting (after controlling for total accruals and abnormal accruals) show that the DTE coefficient for both the family and non-family groups is positive, but is significant only for non-family firms. The (unreported) results for the earnings level setting (after controlling for total and abnormal accruals) indicate that the coefficient of DTE for both the family and non-family groups is positive, but is not significantly different from zero. Finally, our (unreported) results for consensus analysts' earnings forecasts (after controlling for total accruals and abnormal accruals) show that the coefficient of DTE for both the family and non-family groups is positive, but is significant only for non-family-controlled firms. Although the subsample analysis does not provide a direct test of the effect of family ownership control, these results indirectly support the proposition that family control moderates the positive association between deferred tax expense and the earnings change and consensus analysts' earnings forecasts earnings management settings.

In short, our results provide support for H3 for the settings of earnings management to avoid reporting an earnings decline and to avoid failing to meet or beat the consensus analysts' earnings forecast. While there is evidence of using deferred tax to achieve earnings targets in non-family firms, our findings are consistent with the notion that family firms are less likely to manipulate earnings numbers through deferred tax expense.

4.3. Robustness checks

We perform several robustness checks to evaluate the reliability of our probit regression results. First, we employ logit and OLS regression analysis instead of probit regression analysis and obtain similar empirical results. Second, we expand the regression models relating to the earnings change and consensus analysts' earnings forecast settings to include the level of operating cash flow (and ΔCFO for the earnings level setting) to further control for current performance, and our results remain unchanged. Third, we adjust the family ownership control cut-off point from 20% to 25%, 30%, and 50%, respectively. Our regression results are robust to the different classifications of family and non-family-controlled firms. Finally, we perform a robustness check to control for the effect of potential outliers. We winsorize the variables that are more than four standard deviations from their respective means and rerun the probit regression models. The results based on these observations show that our results become stronger in several cases, which indicates that the findings are not affected by outliers.

5. Conclusions

This study investigates the impact of family ownership control on earnings management for Hong Kong firms. Specifically, we examine the impact of family ownership control on earnings management both *directly* by investigating whether family-controlled firms are more or less likely to engage in earnings management than non-family controlled firms, and *indirectly* by analyzing whether the association between earnings management and deferred tax expense is weaker in family-controlled firms.

Our findings provide some support for the negative association between family ownership control and earnings management. We find evidence of this association in the settings of earnings management to avoid reporting an earnings decline and to avoid reporting a loss. Additionally, we find some support for the positive association between deferred tax expense and earnings management for the settings of earnings management to avoid reporting an earnings decline, earnings management to avoid reporting a loss, and to avoid failing to meet or beat the consensus analysts' earnings forecast. Finally, we observe that the positive association between deferred tax

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[36] It is claimed that tests based on a full sample with an interaction variable may be less precise under certain conditions if the coefficients of the control variables differ between the two groups. An analysis based on pooled data forces the coefficients of all of the variables other than the test variables to be equal for the two groups. It is also claimed that separate regression tests on the two groups may provide better results when the association between the X variable (DTE) and Y variable (EM) is hypothesized to be contingent on the moderator variable Z (family ownership control) (see e.g., Staw and Oldham, 1978; Wright et al., 1996).

[37] Morck et al. (1988) and Hermalin and Weisbach (1991) use a similar cut-off point for concentrated ownership.

expense and earnings management is moderated by family ownership control.

Overall, our research findings suggest that non-family-controlled firms generally manage earnings to meet or beat earnings targets, and through the use of deferred tax expense to manipulate earnings, but such behavior is attenuated in family-controlled firms. The finding of a lower likelihood in family-controlled firms to manipulate earnings in achieving earnings targets supports the proposition that financial reporting in family-controlled firms is of a higher quality, and is consistent with the viewpoint of a greater alignment between controlling and outside owners, rather than the expropriation by the controlling family which can be accomplished by managing reported earnings.

This study augments the body of literature about the effects of the family-controlled organizational structure on earnings management and the quality of earnings. Our finding that family-controlled firms are less likely to take part in earnings management is consistent with the argument that there is less pressure on such firms to manage earnings to look good in the short-term because of the controlling family's long-term interest in the firm. It seems that family control reduces the conflict between managers and shareholders. Our results do not support the alternative argument that family ownership control leads to greater earnings management because majority shareholders attempt to expropriate from minority shareholders.

Our research provides useful information for policymakers in countries in East and Southeast Asia with institutional arrangements similar to those in Hong Kong (e.g., Taiwan, Singapore and Malaysia). Our results also show that deferred tax expense is helpful for detecting earnings management in firms operating in an Asian institutional environment such as that of Hong Kong, which differs significantly from the U.S. Finally, our results also furnish useful information for analysts and investors who use financial statements to assess the quality of corporate earnings, and particularly those of family-controlled firms.

One limitation of our study is that due to a lack of data, the results for the consensus analysts' earnings forecast setting are only based on 105 firm observations. However, although small, the number of observations gathered for this setting is similar to that use by Phillips et al. (2003) in the U.S. Additionally, we gain some comfort from the consistency of our results for the consensus analysts' earnings forecast setting across many regression model specifications. A further limitation of this study is that it is possible that managers may offer guidance to analysts to persuade them to lower their forecasts before earnings announcements (Schwartz, 2001;

Matsumoto, 2002). However, there is no agreement in the literature on how to measure managerial guidance (Schwartz, 2001), so we are unable to control for this variable in our regression models. We leave this matter for future research.

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