

Accrual-Based and Real Activities Based Earnings Management Behavior of Family Firms in Japan

Abstract

We explore the degree of accrual-based earnings management and real activities based earnings management, using data of all family and non-family firms listed on the Tokyo Stock Exchange from 2004 through 2011. A priori family firms are expected to have lower agency cost because family shareholders and management will be more congruent in pursuing mutual firm goals. A founding family will also pay attention to the reputation of their firm and family in order to sustain socioemotional wealth. We empirically assess the level of earnings management and investigate whether the amount will be lower for family than non-family firms, and also identify which method is more costly. The level of accruals and cost may vary among the type of the family firms; that is, whether or not shareholdings are large and if the CEO is from the founding family. With univariate analysis we find that the level of accrual-based earnings management measures is higher for family versus non-family firms for some selected measures, while real activities measures are lower for family firms. With cross section regressions, we find that shares owned by a founding family increase the level of accrual-based earnings management, while the CEO dummy variable decreases it. For the level of real activities earnings management, we find that family related variables decrease it. When we introduce economic measures related to costs of earnings management: i.e., the choice of an auditor, the number of following analysts, the length of operating cycles, market share, estimated distance to default, and effective tax rates, we find that Japanese family firms utilize accrual-based earnings management more often than real activities based earnings management.

JEL Classification: M41, G32, M21

Keywords: earnings quality, founding family, CEO, abnormal accruals, overproduction

1. Introduction

Among the literature on earnings quality (Sloan, 1996, Xie, 2001, Desai et al., 2004, Richardson et al., 2005), there are few studies using U.S. family firm data except for Ali et al. (2007) and Wang (2006). Although the financial performance of family firms with Japanese data has been investigated by Claessens et al. (2000), Allouche et al. (2008), Saito (2008), Asaba (2013), and Mehrotra et al. (2013), there are few studies from the viewpoint of quality of financial disclosure. Ebihara et al. (2012) find that earnings quality of Japanese family firms is lower than non-family firms with univariate analysis using the Jones and modified Jones models, and that earnings quality is higher for family firms for shareholdings of founding families up to 33% with multivariate pooled regressions. Kubota and Takehara (2012) find that family firms adopt more conservative earnings reporting than non-family firms. In this paper we investigate the level of accrual-based earnings management and real activities based earnings management using data from all family and non-family firms listed on the Tokyo Stock Exchange from 2004 through 2011. However, these previous studies on Japanese data investigated only accrual-based earnings management. In the current paper we explore both accrual-based and real activities based earnings management (Roychowdhury, 2006, and Zang, 2012) of family firms in Japan.

A priori family firms are expected to have lower agency cost because family shareholders and management will be more congruent in pursuing mutual firm goals by family shareholdings and/or executive positions. A founding family will also pay attention to the reputation of their product/services, firm name, and family name in order to sustain family socioemotional wealth even with some sacrifice for best economic performance.¹ Thus, we

¹ See Barrone et al. (2010) and Gomez-Meja et al. (2007, 2011) for the definition of socioemotional wealth

infer that the amount of earnings management will be lower for family than non-family firms for reputational purposes, and investigate the level of earnings management identifying which method is more costly for family firms. In addition, we consider that the level of accruals and cost may also vary among the type of family firm; that is, whether or not shareholdings are large and if the CEO is from the founding family. We conduct empirical analyses using correlation analysis, portfolio analysis, univariate analysis, and cross section regressions and find evidence to test these assertions.

Section 2 motivates our study and Section 3 reviews previous studies. Section 4 establishes our hypotheses. Section 5 explains the data and reports basic statistics. Section 6 reports empirical results in detail, and Section 7 concludes.

2. Motivation of the Study

Family firms are expected to be equipped with management congruent with a family norm, whether or not the CEO is from the family. Accordingly, we expect that management possesses stronger real authority inside firms according to the definition of Aghion and Tirole (1997). However, this force can work in two ways.

First, family firms will suffer less from agency cost problems that arise between managers and share owners (Jensen and Meckling, 1976). This is because a large fraction of shares are owned by founding families and the family CEO has real authority from the family. These factors will lead the firm to higher efficiency with less agency cost. Anderson et al. (2009) makes the point that family firms can provide stronger control and oversight with less agency

used in family firm research literature.

cost, enabling their managers to have more direct control over corporate social activity decisions. They call this strong tendency the “control in-place” hypothesis. Our research question is whether a stronger authority and less agency cost will lead the quality of earnings to better maintain the reputation of the firm and the family. We establish our first null hypothesis in this regard in Section 4.

Second, on the other hand, a stronger authority may make the disclosure level more opaque because management and the owner care less for other stakeholders. In other words, family firms may fall into a state of autarky, and non-family managers and employees in fear of losing their jobs may be unable to stand up against the firm. For example, both Dyer and Whetten (2006) and Anderson et al. (2009) state that families can be self-centered and more interested in just protecting their well being, and Anderson et al calls this tendency the “entrenchment hypothesis.” From the viewpoint of keeping a family firm’s socioemotional wealth, Gomez-Meja et al, (2007, 2011) argue that family firms are willing to yield financial performance to attain and preserve higher socioemotional wealth. Stockmans et al. (2010) using Flemish private firm data concludes that socioemotional wealth plays a role as a motive for upward earnings management. We also test this entrenchment hypothesis as an alternative hypothesis, against the null hypothesis, which implies lower earnings quality. This will constitute our first null hypothesis.

For testing the hypothesis between the less agency cost argument versus the entrenchment effect, we focus on earnings quality rather than financial performance which has been already investigated for Japanese family businesses. Earnings quality is one of the major properties accounting reports ought to possess (Ronen and Yarri, 2008, and Francis et al. 2006) and the

evidence for Japanese family business data is less known except in Ebihara et al. (2012). In order to investigate the level of accrual-based earnings measurement, we use abnormal accruals as presented by Dechow, Sloan and Sweeney (1995) as well as other standard earnings quality measures from the accounting literature. We also investigate the level of real activities based earnings management as devised by Roychowdhury (2006). We compare the difference between family and non-family firms by highlighting management styles reflected in earnings quality and also use measures proposed by Zang (2012), comparing the relative cost of earnings management. This will lead us to establish the second hypothesis also defined in Section 4. We will review previous studies related to ours in the next section.

3. Previous Evidence on Family Firm Earnings Management

Among the literature on earnings quality (Sloan, 1996, Xie, 2001, Desai et al., 2004, Richardson et al., 2005), there are less studies using U.S. family firm data. Ali et al. (2007) find that U.S. family firms show better quality in financial disclosure, are followed by more analysts, and trade their stocks with smaller bid-ask spreads. Wang (2006) finds that earnings quality is higher for U.S. family firms versus non-family firms. Similarly, Jiraporn and DeDalt (2009) find that stronger control by the founding family leads family firms to less earnings management for U.S. firms and emphasize the role of family reputation, which we use to construct our hypotheses in Section 4.

For evidence in other countries, Stockmans et al. (2010) finds family firms have greater incentive to engage in upward earnings management to preserve their socioemotional wealth using Finnish data from their own questionnaires. Cascino et al. (2010) uses Italian listed

firm data and finds that family firms have a higher quality of financial information disclosure than non-family firms. Using Taiwan family firm data, Yang (2010) finds the larger the level of insider ownership, the larger the level of earnings management.

These previous studies investigated only accrual-based earnings management. In the current paper we explore both accrual-based and real activities based earnings management (Roychowdhury, 2006 and Zang, 2012), and compare relative costs for family firms of three types, which we define in Section 5. For the former earnings management measure, we decompose total accruals into normal and abnormal components using the modified Jones model proposed by Dechow et al. (1995) and for the latter measure we use the method by Roychowdhury (2006).

In one of the most widely cited research articles about Asian family business, Claessens et al. (2000) investigated ownership structure among East Asian countries for evidence on management behavior and financial performance of Japanese family firms. They cover 1,240 Japanese listed firms (op. cit., p.104) and point out that 13.1% of firms are controlled by families with a 10% shareholding cutoff level for founding families, and 9.7% of firms are controlled by families with a 20% cutoff level. Saito (2008) finds that family firms slightly outperformed non-family firms from 1990 through 1998, but their superiority was limited to the founders' reign. Allouche et al. (2008) find that family firms outperform the matched sample of non-family firms with a smaller sample. More recently, Asaba (2013) investigated investment behavior of the electric machinery industry in Japan. His sample of 184 family firms from 1995-2006 demonstrates more aggressive investment behavior during a boom and more persistent investment behavior during a recession. Mehrotra et al. (2013) investigated

Japanese family business succession problems and demonstrated that adopted heirs could avoid the succession problem. They studied Japanese firms between 1949 and 1970 and followed the data up to 2000.

In the accounting literature investigating Japanese firm earnings quality, Kubota and Takehara (2012) find that family firms adopt more conservative earnings reporting than non-family firms, and report losses earlier using the Basu (1995) conditional conservatism regression model. Ebihara et al. (2012) find that earnings quality is lower for family firms than non-family firms with univariate analysis, but the quality is higher for founding family shareholdings of up to 33% using multivariate analysis.

4. Hypotheses

We introduced the reasoning in Section 3 and we establish two hypotheses in this section. The first is related to the preservation motive of socioemotional wealth by family firms. With stronger authority and less agency cost, family firms are unwilling to boost their accounting earnings and rather decrease reported earnings. Given real authority (Aghion and Tirole, 1997) management and owners do not have to worry about the compensation of managers geared towards firm performance, and will not engage in income boosting. Given less agency cost, the founding family and management with more firm shares may be more concerned than non-family firms with long run value appreciation and may care less about earnings performance in the short run. We predict that managers of family firms do not choose income increasing type earnings management practices because it will reduce the founding family firm reputation and detract from socio-emotional wealth

We expect that the amount of earnings management in family firms is lower than that in non-

family firms. We call this reasoning “founding family’s reputation hypothesis,” and establish our first hypothesis.

Hypothesis 1: Family firms will not choose an income increasing earnings management practice which reduces family reputation and socio-emotional wealth.

The alternative hypothesis is that managers and the founding family want to extract more cash by spending more on a family CEO and/or paying out higher dividends with inflated earnings. Management may incur higher expenditures for perks (Jensen and Meckling, 1976). In fact, Stockmans et al, (2010) find this behavior in Flemish private family firms. Our sample is public firms in Japan and our evidence will complement their finding whichever the direction may be.

The second hypothesis is which kind of earnings management method family firms in Japan pursue: i.e., accrual-based earnings management or real activities based earnings management. We classify family firms into three types: i.e., Type 1: firms with more than 10% of shares owned by a founding family and the CEO is from the family; Type 2: firms with more than 10% of shares owned by a founding family, but the CEO is not from the family; and Type 3: less than 10% of shares owned by a founding family and the CEO is from the family. Based on these classifications and with a sample of non-family firms we investigate the following hypothesis based on cost differences of these four types of firms (Zang, 2012). We call this hypothesis the “earnings management cost hypothesis.”

Hypothesis 2: Family firms will adopt the earnings management method which has a lower cost for the founding family.

With these two hypotheses we explore the degree of earnings management and cost differences of Japanese family firms.

5. Data Construction Method and Basic Observation

Our primary observation period is 2004 through 2011 and the sample includes all listed firms on the Tokyo Stock Exchange. The number of the sample is listed in Table 1 and we construct an unbalanced panel data without survivorship and new firm bias.

TABLE 1 ABOUT HERE

In Table 1 we classify firms into non-family firms or three types of family firms defined above, and report basic statistics.² In the first subpanel the number of observations for each year is reported, then, the listing of the stock exchanges and the sector wise observations. This sector classification scheme follows one used by Kubota and Takehara (2007), who investigated the cost of capital for Japan. The detail of this scheme is shown in the Appendix. The first column lists the number of non-family firms, the second, Type 1 firms (more than 10% and CEO from founding family), the third, Type 2 firms (more than 10% and CEO not from founding family), the fourth, Type 3 firms (less than 10%, and CEO from founding family), and the fifth, the total number of firms. For example, in 2011, there are 1010, 426, 104, 152, and 1692 firms, respectively.

² Note that among the non-family firm group it includes family firms with shareholding percentages less than 10% and the CEO not from the family. When we established our own database this group was classified as non-family firms.

We find the number of family firms of all type increases over the years with a pace higher than that for non-family firms. For stock exchange listings, we find the largest is from emerging other stock markets in Japan with 261 firms and 82 firms for Type 1 and Type 2 firms. For Type 3, we find the largest is on the Tokyo Stock Exchange, with Toyota Motor Co. and Panasonic in this category. For sector-wise observations, for Type 1 and Type 2 firms, the largest is the service industry, while for Type 3, the largest is the investment goods industry. Overall, we find that 42% of the firms are classified as listed family firms in Japan.

For these sample firms we use financial statement and stock price data from the Nikkei NEEDS Database and compute earnings numbers and managed numbers.

In order to compute the amount of total accruals, *ACC*, and components of accruals, equation (1) is used as a standard method. All variables in equation (1) are standardized by a divisor with total assets at the beginning of each year.

$$\begin{aligned}
 ACC &= \Delta COA + \Delta COL + \Delta NCOL + DEPR \\
 \Delta COA &(\text{Current Operating Assets}) \\
 &= \text{changes in current assets} - \text{changes in cash and cash equivalents} \\
 \Delta COL &(\text{Current Operating Liabilities}) \\
 &= -(\text{changes in current liabilities} - \text{changes in financing items}) \quad (1) \\
 \Delta NCOL &(\text{Non - Current Operating Liabilities}) \\
 &= -(\text{changes in allowance for future retirement benefits} \\
 &\quad + \text{changes in other long term allowance accounts} + \text{changes in amortization}) \\
 DEPR &(\text{depreciation}) = -(\text{total depreciation of tangible fixed assets})
 \end{aligned}$$

Changes in financing items in ΔCOL are composed of changes in 1) short-term borrowing, 2) outstanding commercial paper, 3) long-term debt due within one year, and 4) straight bonds and convertible bonds due within one year. Changes in amortization are composed of changes

in amortization of intangible fixed assets, such as goodwill and patent rights. Current assets, current liabilities, cash equivalents, allowance for future retirement benefits, and tangible fixed assets are handled the same as the U.S. GAAP. Note also that ΔCOL , $\Delta NCOL$, and $DEPR$ are defined as negative numbers throughout this paper so that the amount of total accruals, ACC , gets smaller (larger) as these numbers get larger (smaller).

We decompose total accruals into normal and abnormal components using the modified Jones model proposed by Dechow, Sloan and Sweeney (1995). We estimate the following cross-section regression equation separately by each industry for each sample year.³

$$ACC_{j,t} / TA_{j,t-1} = \alpha_0 + \alpha_1 1/TA_{j,t-1} + \beta_1 \Delta ADJREV_{j,t} + \beta_2 PPE_{j,t} + v_{j,t}. \quad (2)$$

In equation (2), $\Delta ADJREV$ is the difference in changes in sales and accounts receivables, PPE is property, plant, and equipment measured at net book value, and $v_{j,t}$ is an residual term. The fitted values from OLS estimation were used to construct normal accruals (NAC) components, and their residual terms were used as abnormal accruals ($ABNAC$). The abnormal accruals components represent firm-specific accrual components in excess of industry averages.

In addition to abnormal accruals, we also use two other measures of accounting based earnings quality measures. They are measures of variability, and smoothness of earnings. Variability of earnings (EBEISD) in this study is defined as a past five year standard deviation of earnings before extraordinary items (EBEI). The ‘smoothness’ measure is a ratio of the standard deviation of EBEI to the standard deviation of CFO.

³ Based on the original 33 industry classifications by the Tokyo Stock Exchange, we classified all non-financial firms into 24 industries.

For measures to assess the level of real activities based earnings management we follow the method employed by Roychowdhury (2006) and the data construction method is almost identical. First, by conducting cross-sectional regressions for every industry and year, we compute abnormal cash-flows from operations, ABNCFO, which is defined as a residual term from the following regression model (3).

$$CFO_{j,t} / TA_{j,t-1} = \alpha_0 + \alpha_1 \cdot 1/TA_{j,t-1} + \beta_1 \cdot SLS_{j,t} / TA_{j,t-1} + \beta_2 \Delta SLS_{j,t} / TA_{j,t-1} + \varepsilon_{j,t}. \quad (3)$$

We also compute two additional measures of real activities based earnings management, abnormal production (ABNPROD), and abnormal expenditures (ABNEXP), by employing the following regression models (4) and (5) as proposed by Roychowdhury (2006).⁴

$$PROD_{j,t} = \alpha_0 + \alpha_1 \cdot 1/TA_{j,t-1} + \beta_1 SLS_t / TA_{j,t-1} + \beta_2 \Delta SLS_{j,t} / TA_{j,t-1} + \beta_3 \Delta SLS_{t-1} / TA_{j,t-1} + \varepsilon_{j,t}. \quad (4)$$

$$DISEXP_{j,t} / TA_{j,t-1} = \alpha_0 + \alpha_1 \cdot 1/TA_{j,t-1} + \beta_1 SLS_{t-1} / TA_{j,t-1} + \varepsilon_{j,t}. \quad (5)$$

Table 2 reports the means of the various measures of earnings management as well as financial characteristics and *p*-values of the differences for each category of family and non-family firms.

TABLE 2 ABOUT HERE

To measure accrual-based earnings quality (Francis et al. 2008), we choose three variables, abnormal accruals (ABNAC), earnings variability (EBEISD), and smoothness. Reported in

⁴ Using equations (2) and (3) of Roychowdhury (2006), we computed two additional measures of real-activities based earnings management: abnormal cost of goods sold, and abnormal inventory growth. However, the Pearson correlation between abnormal production (ABNPROD) and abnormal cost of goods sold in our pooled sample is very high at 0.916. Thus, we decided not to use abnormal cost of goods sold and abnormal inventory growth in the analysis and focus on abnormal production (ABNPROD).

the first row are the percentage of shares owned by the founding family and the differences are all significant. For abnormal accruals, the smallest is Type 2 firms at -0.481 and the difference with non-family firms is significant at the 10% level (p -value=0.056). It means the type of firms where CEOs are not members of the founding family decrease their earnings the most among all type of firms, which is worth mentioning, and so are the cases for variability (EBEISD) at 2.236 defined as the past 5 year volatility of earnings. In Type 2 firms, the managers are hired professionals and perhaps are more concerned with their own reputation as capable managers and/or their own empire building (Berk and DeMarzo, 2011, Ch. 16). Smoothness is measured by the ratio of variability to the standard deviation of cash flows from operations, and Type 3 firms have the highest number at 0.523, which shows the lowest earnings quality. However, we find Type 2 firms show a lower number at 0.458 than other types of firms, which means higher earnings quality. This result is consistent with the finding for abnormal accruals. Hence, we infer that Type 2 firms without family CEOs may be more concerned with long term sustainability of earnings, and they may exercise income decreasing earnings management to pursue long term objectives.

Overall, for the various measures of accrual-based earnings management for different types of family firms, we find the level of earnings management is somewhat higher in family firms, although not all significant. Accordingly, the evidence for accrual-based earnings management is not against Hypothesis 1 with univariate analysis and H1 is weakly supported.

For the measures of real activities based earnings management, the means of abnormal cash flows from operations (ABNCFO) of Type 1 family firms is higher than that for non-family firms and the difference is statistically significant. In the case of abnormal production

(ABNPROD), they are the lowest (negative) for both Type 1 and Type 2 firms at -0.018 and -0.008, respectively, and significant. These imply Type 1 and Type 2 family firms utilize less real activities based earnings management. On the other hand, abnormal expenditures (ABNEXP) for these two types of firms are larger at 0.017 and 0.003 which means family firms expend more. It may be due to the stronger real authority of family firms (Aghion and Tirole, 1997) with entrenchment effects in force.

Overall, except for abnormal expenditures, we find Type 1 and Type 2 family firms use less real activities based earnings management than non-family firms and Type 3 firms. From the univariate analysis result for activities based earnings management, we support Hypothesis 1, similar to the cases for accrual-based earnings management. Because the size of Type 3 firms is large at 11.172 (see the rows of lnTA below) and these are listed firms, it is reasonable that Type 3 firms show a similar tendency to non-family firms as far as earnings management of both accrual-based and real activities based is concerned.

In the lowest subpanels we report basic financial characteristics of our sample. Size (lnTA: Natural logarithm of total assets) is used as a dummy variable in cross section regressions and the other four variables are also used as control variables. That is; ROA: Past 5 year average return on equity, LEV: A firm's financial leverage defined as non-current liabilities to total assets, SLSG: Past 5 year growth rate of sales, and LP: Labor productivity defined as value added per employee. The return on assets (ROA) is highest for Type 1 family firms at 1.715% and then Type 3 firms at 1.626% . Leverage is lowest for Type 2 firms at 12.589%. Sales growth (SLSG) is higher for non-family firms at 1.045%, but the difference

is not significant. Labor productivity (LG) is higher for non-family firms at 23.807 million yen than all types of family firms, and is an interesting result.

6. Empirical Results

6.1 Analysis of Family Shares and CEO Positions

In this sub-section we investigate how ownership affects earnings management behavior, and whether it matters if the CEO is from the founding family.

TABLE 3 ABOUT HERE

Table 3 reports correlation numbers with Pearson Correlation and Spearman Rank Correlation between the degree of earnings management and shares owned by a founding family (shown in the left subpanel). The difference in earnings management depending on whether the CEO is from the founding family (DCEO=1) or not (DCEO=0) is shown in the right subpanel, both with corresponding p -values. In the lower subpanel are the same figures for firm characteristics variables.

For correlation numbers, we find that percentage of shares held by a founding family (FFO) are negatively correlated with the abnormal accruals (ABNAC) at 0.016 for Pearson and it is significant at 10% level. The Pearson and Spearman correlations between FFO and earnings variability (EBEISD) are 0.029 and 0.067, respectively and both of them are significant at the 1% level. This means the more shares owned by families, the higher the earnings variability. For smoothness, the Pearson correlations are negative, and not significant. However, the Spearman correlation is positive and significant at the 5% level.

For real activities based earnings management, we find that abnormal production (ABNPROD) are negatively correlated at -0.102 for Pearson and -0.075 for Spearman, As for abnormal expenditures (ABNEXP), they are positively correlated with family shares at 0.095 for Pearson and 0.065 for Spearman, and this augments our previous findings. That is, a founding family may incur specific and extra expenditure for family managers, which sometimes may lead to entrenchment effects.⁵

In the case of the CEO dummy variable shown in the right subpanel, we do not find significant differences in accrual-based earnings management. However, for real activities based earnings management, we find the abnormal production cost (ABNPROD) is lower at -0.010 when CEOs are from the family. It can be said that family CEOs tend to decrease the production cost to increase profit. Abnormal expenditures (ABNEXP) are higher in the case where the CEO is from the family (0.010 vs. -0.008) and this augments the previous finding. So far, the evidence weakly supports Hypothesis 1.

For firms' financial characteristics variables, shares owned by founding families (FFO) are positively correlated with ROA at 0.012 for Pearson, and negatively correlated with size (lnTA) and leverage (LEV) at -0.303 and -0.111, respectively. The CEO dummy contributes to higher ROA (1.689% vs. 1.429%), but lower leverage (14.874% vs. 17.875%), lower log size (10.451 vs. 11.012), lower sales growth (SLSG) (1.015% vs. 1.050%) and labor productivity (LP) (17.162 million yen vs. 23.542 million yen).

Table 4 classifies firms into five portfolios based on the percentage of shares owned by the founding family (FFO) and compares the same variables as in Table 3.

⁵ See the case for Daio Seishi Co. in which the CEO from the founding family used company money for his personal gambling and was prosecuted in 2012.

TABLE 4 ABOUT HERE

The second to the upper most right column reports the difference between the highest share owned group (P1) with more than 50% minus the lowest group (P5) with less than 10% owned and the upper most right column shows the corresponding p -values.

For this difference variable (P1-P5), they are at -0.414, 0.360, and 0.049 for the abnormal accruals (ABNAC), the earnings variability (EBEISD), and smoothness, respectively. Thus, earnings are decreased more largely and earnings variability becomes higher as more shares are owned by founding families. This finding supports previous findings in Tables 2 and 3.

In case of real activities based earnings management, abnormal production costs (ABNPROD) is smallest at -0.017 in P1 in which FFO is greater than 50%, while abnormal expenditures (ABNEXP) are positively correlated.

In sum, this ranked portfolio test confirms the previous result shown in Tables 2 and 3 both for accrual-based earnings management and real activities based earnings management. Also, note that the shares owned by the founding family are negatively related with all financial characteristics variables, but the result for leverage is not significant.

6.2 Cross Section Regressions

In this sub-section we report the results from cross section regressions of the following specification in equation (6). EQ is an earnings management variable of our interest. FFO and $DCEO$ are the percentage of shares owned by the founding family and CEO dummy. CVs are control variables, composed of ROA, leverage, sales growth, and labor productivity. $DSize$ are firm size dummies (large-cap, mid-cap, and small-cap) defined based on the

ranking in each year by book value of total assets, $DSector$ is as defined in the Appendix, and $DYear$ is the year dummies.

$$EQ_{jt} = \alpha + \beta_1 \cdot FFO_{jt} + \beta_2 DCEO_{jt} + \sum_{i=1}^4 \gamma_i CV_{ijt} + \sum_{i=2}^3 \delta_i DSize_{ijt} + \sum_{i=2}^6 \lambda_i DSector_{ijt} + \sum_{t=2004}^{2010} \eta_t DYear_{ijt} + \varepsilon_{jt} \quad (6)$$

Table 5 reports the result from OLS regressions, where p -values are computed with White's heteroskedasticity corrections.

TABLE 5 ABOUT HERE

For the level of accrual-based earnings management, when we look at the family share value FFO , we find the slope for the abnormal accruals (ABNAC) is negative at -0.004. The slope for $DCEO$ is also negative at -0.058. Insignificant slopes for FFO and $DCEO$ suggest that family firms have tendencies to avoid income boosting, which supports Hypothesis 1.

As for earnings variability (EBEISD), slope of FFO is positive at 0.002 and significant at the 10% level, which means that more shares are owned by the family, the higher the earnings variability.

In the case of real activities based earnings management, the magnitude of coefficients for both FFO and $DCEO$ become much smaller. We find the coefficients of family shares (FFO) to explain the abnormal production cost (ABNPROD) is negative and significant at -0.001. In addition, coefficients on abnormal expenditures (ABNEXP) are positive at 0.001 and significant. Again, family firms expend more, and the coefficient for abnormal expenditures of $DCEO$ variable is 0.006 and significant at the 1% level. The effects of $DCEO$

on other earnings management variables are similar to the case for *FFO* variable.

Overall, we find a tendency that CEOs from the founding family play a positive role to improve the earnings quality both on accrual-based earnings management and real activities based earnings management. It means the family CEO is concerned with the reputation of the firm as reliable in terms of disclosure effort leading at the same time to increased socioemotional wealth. The latter may mean that more shares that are held by founding families, the less attention paid to stockholders outside the family.

6.3 Further Analysis of Costs of Earnings Management

We have confirmed in Tables 2 through 5 that family firms have a general tendency to decrease their reported earnings by utilizing both accruals based and real activities based earning management strategies. These findings support our Hypothesis 1 and suggest that family firms are more concerned with the reputation of investors. Also, we have to recall the fact that the magnitude of income decreasing by using accruals based strategies is much larger than that by real activities based strategies. The reason why family firms utilize accruals based strategies to a large extent to manage their earnings is worth exploring. One of the possible reasons to explain such family firm earnings management behavior is the ease to manage earnings, in other words, for family firms, potential cost to manage earnings by accruals based strategies is lower than that of real activities based strategies. This prediction leads to our Hypothesis 2.

In this subsection, we compare the relative cost of earnings management: accrual-based versus activities based. Following Zang (2012) we use the following variables as surrogates for cost of earnings management for both cases. We use the same variables as Zang since

U.S. and Japanese GAAP and their disclosure regulations based on Sarbanes and Oxley type laws are more similar to each other than to European countries with IFRS standards. That is, we use a dummy variable for choosing a large auditing firm (big 4 in the Japanese case) or not, the number of following analysts (Athanasakou et al., 2011), and the length of operating cycle as cost for accrual-based earnings management. We use market shares (Harris, 1998), the distance to default (Merton, 1974, and Gray et al., 2006) using the Black-Sholes-Merton model for European options and measuring the distance to reach the default boundary (standard deviations divided by means of the geometric Brownian motions) at the end of one year, and effective marginal tax rates (Graham, 1996 and Scholes et al., 2002) as cost for real activities based earnings management. Volatility parameters of the option valuation model was computed from annual financial data and the method to compute the effective tax rates for Japanese accounting systems follows Kubota and Takehara (2007).

Table 6 reports the cost of earnings management classified by three types of family and non-family firms.

TABLE 6 ABOUT HERE

The results for accrual-based earnings management reveal that the choice of auditors is significantly less for all types of family firms at 10% level, the number of analysts is significantly less for Type 1 and Type 2 firms at 1% level, and the trading cycle is significantly less for Type 2 firms at 10% level, but longer for Type 1 and Type 3 firms though not significant. Accordingly, we conclude earnings management will be easier for family firms from these three cost comparisons, except for a shorter trading cycle for Type 2 firms. Note for the number of analyst variables, Type 3 firms attract more analysts on average

(2.645) versus non-family firms (2.537) although the difference is not significant. Moreover, Type 3 and Type 1 firms show a longer operating cycle than non-family firms, but again it is not significant.

For real activities based earnings management, market shares (MShare) are significantly lower for all types of family firms, and for Type 2 it is the lowest with 1.485 percent while the market share for Type 3 firms is 5.018 percent, comparable to 6.821 percent of non-family firms, though the difference is not significant. It means the cost of earnings management is higher for family firms. For the distance to default (DD) threshold point, all family firms have a significantly smaller likelihood to default.⁶ The largest is Type 1 firms with 3.768. Type 2 and Type 3 firms show distances of 3.499 and 3.510, respectively, which is significantly larger than 3.318 for non-family firms. We find family firms are safer and for that reason, if they want, the cost for upward earnings management will be less. Type 2 and Type 3 firms have higher effective tax rates and it shows that the cost of earnings management is higher. Type 3 firms have lower effective marginal tax rates (Graham, 1996) with 29.8% versus 30.4% for non-family firms. Accordingly, except for distance to default (DD), the cost of real activities based earnings management for family firms seems to be larger than for non-family firms.

Hence, for Hypothesis 2 we conclude that family firms choose accrual-based earnings management over real activities based earnings management. We will re-confirm this point as a robustness check in the following two tables.

⁶ In Table 2 we have shown that family firms are less leveraged. However, this is only one factor, and we also have to look at variability of operating profit. One of the co-authors of this paper has already confirmed that the variability of profit for family firms is lower than non-family firms. The result is available upon request from the authors.

Table 7 reports Pearson and Spearman rank correlation numbers between the degree of earnings management and shares owned by the founding family in the left subpanel. The difference in earnings management depending on whether the CEO is from the founding family (DCEO=1) or not (DCEO=0) is in the right subpanel with corresponding p -values.

TABLE 7 ABOUT HERE

From the left subpanel we find that the percentage of shares owned by the family are negatively correlated with costs related to the choice of auditor (-0.024) and the number of analyst (-0.154) variables in the direction of reducing the cost of accrual-based earnings management. The results for trading cycles are mixed; with the Pearson rank it is positive with 0.009, but negative and significant for Spearman with -0.041. For the CEO dummy, again for the auditor choice and number of analyst variables, CEOs from the founding family tend to reduce earnings management cost (0.752 firms vs. 0.773 firms, and 1.591 analysts vs. 2.443 analysts, respectively).

In the lower subpanel, the percentage of shares owned by the family are negatively correlated with market shares at -0.223, and positively correlated with distance to default and effective marginal tax rates at 0.067 and 0.082, respectively. The results for market share and marginal tax rates imply the costs are higher as more shares are owned by families. However, the observation for distance to default reveals that family firms in which a large proportion of stock is held by founding family are more risk averse to avoid bankruptcy, which is consistent with the view that a family seeks long-term sustainability and preservation of socioemotional wealth.

Table 8 reports the results from regression analysis as in equation (8) and logistic regression model for the big 4 auditors (Audit4), in which dependant variables are in this case the costs of each earnings management method.

TABLE 8 ABOUT HERE

The results for accrual-based earnings management reveal that the choice of auditors with logistic regression model is not significant, but *DCEO* tends to hamper the choice of big auditors. When we consider the cost of earnings management as in Zang (2012), other results for both *FFO* and *DCEO* variables demonstrate that these variables make the cost of accrual-based earnings costs less because coefficients for the number of analysts are negative at -0.040 and -0.216, respectively, and those for trading cycles are positive at 0.120 and 1.487, although the coefficients for *DCEO* variable are not significant.

For real activities based earnings management, again except for distance to default, the costs will be higher because the coefficients for both *FFO* and *DCEO* variables for market shares are negative at -0.061 and -1.106 and those for effective marginal tax rates are positive at 0.001 and 0.000, respectively.

In sum, from the analyses in this section we conclude that family firms in Japan choose accrual-based earnings management (supporting Hypothesis 2) over real activities based earnings management, when more shares are owned by the founding family with a family CEO. Furthermore, family firms, in particular, in the case CEOs are not from the founding family (Type 2), and tend to conduct larger earnings management (rejecting Hypothesis 1) than non-family firms.

7. Conclusion

We investigated the degree of accrual-based earnings management and real activities based earnings management using data of all family and non-family firms listed on the Tokyo Stock Exchange from 2004 through 2011. A priori family firms are expected to have lower agency cost because family shareholders and management will be more congruent in pursuing mutual firm goals. We also inferred that the founding family will pay attention to the reputation of their firm and family in order to sustain socioemotional wealth. Thus, we expect that the magnitude of income decrease will be larger for family than non-family firms.

With univariate analysis we find that the magnitude of income decrease by accruals based strategies is larger for family than non-family firms, and real activities measures are also lower for family than non-family firms. With cross section regressions, we find both of the shares owned by the founding family (FFO) and CEO dummy (DCEO) decrease abnormal accruals. For the level of real activities based earnings management, we find family firm related variables decrease the level of earnings management. Furthermore, when we introduce various economic measures that are related to costs of earnings management, we find family firms in Japan utilize more accrual-based earnings management than real activities based earnings management by comparing cost differences. This is the first study using Japanese data to investigate the level of accrual-based earnings management and real activities based earnings management of three types of family firms and non-family firms.

Appendix Sector Classification for Japan

Based on 33 industry classifications by the Tokyo Stock Exchange, we redefine seven sectors following Kubota and Takehara (2007) for Japanese firms.

Sector	Industry	Sector	Industry
<i>Consumption Goods</i>	Fishery and Agriculture	<i>Services</i>	Communication
	Foods		Wholesale Trade
	Textiles and Apparels		Retail Trade
	Pharmaceutical		Services
	Electric Appliances		
	Other Products		
<i>Investment Goods</i>	Mining	<i>Financial</i>	Banks
	Construction		Securities
	Pulp and Paper		Insurance
	Chemicals		Other Financial Business
	Oil and Coal Products	<i>Transportation</i>	Land Transportation
	Rubber Products		Marine Transportation
	Glass and Ceramics Products		Air Transportation
	Iron and Steel		
	Nonferrous Metals	<i>Utility</i>	Electric Power and Gas
	Metal Products		
	Machinery	<i>Real Estate</i>	Warehousing
	Transportation Equipment		Real Estate
	Precision Instruments		

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Table 1. Number of the Sample

Type 1, more than 10% shareholdings and CEO from family, Type 2, more than 10% shareholdings, but CEO not from founding family, Type 3, less than 10% shareholdings, CEO from the founding family. The observation period is from 2004 through 2011.

	Non Family	Type 1	Type 2	Type 3	Total
2004	934	307	61	131	1433
2005	931	317	59	139	1446
2006	966	340	67	147	1520
2007	1044	382	85	165	1676
2008	1018	393	88	165	1664
2009	997	409	99	165	1670
2010	989	420	105	160	1674
2011	1010	426	104	152	1692
TSE First Section	821	209	73	154	1257
TSE Second Section	208	104	29	25	366
Other Exchanges	301	261	82	38	682
Consumption Goods	303	131	46	51	531
Investment Goods	603	145	51	105	904
Services	250	236	73	42	601
Transportation	62	13	4	10	89
Utility	20	1	0	1	22
Real Estate	55	22	5	6	88
%Family Firms	57.852	24.519	8.009	9.620	100.000

Table 2. Differences between Family Firms and Non-Family Firms

FFO: Percentage of shares held by the founding family, |ABNAC|: the absolute value of abnormal accruals, Persistence: Persistency measure of earnings which is defined as first order autocorrelation of earnings, EBEISD: Past 5 year S.D. of earnings before extraordinary items, Smoothness: Smoothness measure defined as S.D. of earnings to S.D. of cash-flows from operations, ABNCFO: Abnormal cash-flows from operations, ABNCOGS: Abnormal cost of goods sold, ABNINV: Abnormal inventory, ABNPROD: Abnormal product, ABNEXP: Abnormal R&D expenditures, lnTA: Natural logarithm of total asset, ROA: Past 5 year average return on equity, LEV: Firm's financial leverage defined as non-current liabilities to total asset, SLSG: Past 5 year growth rate of sales, LP: Labor productivity defined as value added per employee. '*p*-value' immediate right of each type of family firms are the probability values from the Welch's two-sample *t*-test which test the difference of variables between family and non-family firms.

	Non-FB	Type 1	<i>p</i> -value	Type 2	<i>p</i> -value	Type 3	<i>p</i> -value
FFO	0.569	31.491	0.000	24.084	0.000	4.039	0.000
ABNAC	0.092	-0.107	0.132	-0.481	0.056	0.133	0.825
EBEISD	1.996	2.011	0.704	2.236	0.005	2.027	0.608
Smoothness	0.489	0.483	0.489	0.458	0.052	0.523	0.021
ABNCFO	-0.001	0.003	0.003	0.002	0.259	-0.003	0.348
ABNPROD	0.010	-0.018	0.000	-0.008	0.001	0.009	0.841
ABNEXP	-0.009	0.017	0.000	0.003	0.015	-0.007	0.553
lnTA	11.080	10.156	0.000	10.211	0.000	11.172	0.019
ROA	1.430	1.715	0.031	1.414	0.953	1.626	0.278
LEV	18.323	14.414	0.000	12.589	0.000	16.001	0.000
SLSG	1.045	1.017	0.207	1.104	0.496	1.010	0.115
LP	23.808	16.258	0.000	20.397	0.057	19.371	0.000

Table 3. Earnings Management versus Founding Family’s Ownership and CEO Positions

DCEO is a dummy variable which is equal to 1 if the CEO is from the founding family or at least one executive who has a representative right of the firm from the founding family. Definitions of other firms’ earnings management measures and control variables are the same as Table 2.

	Correlation between FFO and Firm's Characteristics				Presence or Absence of CEO from Founding Family		
	Pearson	<i>p</i> -value	Spearman	<i>p</i> -value	DCEO=1	DCEO=0	<i>p</i> -value
ABNAC	-0.016	0.078	-0.008	0.383	-0.038	0.048	0.472
EBEISD	0.029	0.001	0.067	0.000	2.016	2.015	0.977
Smoothness	-0.005	0.608	0.017	0.049	0.494	0.486	0.346
ABNCFO	0.036	0.000	0.026	0.004	0.001	-0.001	0.080
ABNPROD	-0.102	0.000	-0.075	0.000	-0.010	0.008	0.000
ABNEXP	0.095	0.000	0.065	0.000	0.010	-0.008	0.000
lnTA	-0.303	0.000	-0.322	0.000	10.451	11.012	0.000
ROA	0.012	0.169	0.048	0.000	1.689	1.429	0.024
LEV	-0.111	0.000	-0.185	0.000	14.874	17.875	0.000
SLSG	-0.005	0.548	-0.006	0.532	1.015	1.050	0.103
LP	-0.060	0.000	-0.155	0.000	17.162	23.542	0.000

Table 4. Five Portfolios Ranked by Percentage of Shares Held by Founding Families

FFO denotes percentage of shares held by the founding family. P1 is a portfolio of firms whose FFO is equal or greater than 50%. P2 is a portfolio of firms whose FFO is less than 50% but equal to or greater than 1/3. P3 is a portfolio of firms whose FFO is less than 1/3 but equal to or greater than 20%. P4 is a portfolio of firms whose FFO is less than 20% but equal to or greater than 10%. P5 is a portfolio of firms whose FFO is less than 10%. We test the difference of mean of variables between P1 and P5 by Welch's two-sample t-test. Probability values from *t*-tests are shown in the '*p*-value' column.

	P1	P2	P3	P4	P5	(P1-P5)	<i>p</i> -value
#Firms	395	986	1122	1159	9113		
FFO	57.812	41.453	26.633	14.479	1.035	56.777	0.000
ABNAC	-0.317	-0.013	-0.314	-0.131	0.098	-0.414	0.171
EBEISD	2.360	2.085	2.011	1.960	2.000	0.360	0.001
Smoothness	0.543	0.471	0.453	0.486	0.493	0.049	0.036
ABNCFO	0.001	0.005	0.006	-0.002	-0.001	0.002	0.509
ABNPROD	-0.017	-0.034	-0.018	0.000	0.009	-0.026	0.002
ABNEXP	0.022	0.025	0.012	0.004	-0.008	0.030	0.001
lnTA	9.857	9.922	10.233	10.413	11.092	-1.235	0.000
ROA	0.668	1.642	2.261	1.431	1.456	-0.788	0.008
LEV	17.652	13.460	13.784	13.680	18.011	-0.359	0.660
SLSG	1.000	1.011	1.030	1.066	1.040	-0.041	0.056
LP	16.721	14.194	19.890	16.726	23.212	-6.491	0.000

Table 5. Results from Regression Analysis

Definition of variables are the same as Tables 2 and 3 and *p*-values are computed with White heteroskedasticity corrections.

	Intercept	FFO	DCEO	ROA	LEV	SLSG	LP	Adjusted R^2
ABNAC	-0.274	-0.004	-0.058	0.121	0.007	0.004	-0.003	0.021
<i>p</i> -value	0.100	0.357	0.618	0.000	0.075	0.687	0.002	
EBEISD	2.215	0.002	-0.021	-0.007	0.001	0.003	0.002	0.073
<i>p</i> -value	0.000	0.060	0.579	0.065	0.243	0.599	0.000	
Smoothness	0.530	0.000	0.017	0.000	0.002	0.000	0.000	0.057
<i>p</i> -value	0.000	0.869	0.043	0.890	0.000	0.900	0.000	
ABNCFO	-0.001	0.000	-0.001	0.002	0.000	0.000	0.000	0.078
<i>p</i> -value	0.387	0.002	0.636	0.000	0.000	0.578	0.000	
ABNPROD	0.003	-0.001	-0.003	-0.002	0.000	0.000	0.000	0.045
<i>p</i> -value	0.481	0.000	0.193	0.000	0.000	0.839	0.000	
ABNEXP	0.000	0.001	0.006	-0.001	0.000	0.000	0.000	0.027
<i>p</i> -value	0.934	0.000	0.006	0.001	0.704	0.823	0.364	

Table 6. Difference of the Cost of Earnings Management

Audit4: Big 4 Audit firm dummy variable, NEst: Number of Analysts who follow the firm, Cycle: Operation cycle, MShare: Market share of the firm, DD: Distance to default, MTR: Marginal tax rate.

	Non-FB	Type 1	<i>p</i> -value	Type 2	<i>p</i> -value	Type 3	<i>p</i> -value
Audit4	0.776	0.761	0.100	0.740	0.042	0.733	0.002
NEst	2.537	1.160	0.000	1.332	0.000	2.645	0.426
Cycle	55.531	55.608	0.960	51.175	0.059	58.307	0.350
MShare	6.821	1.613	0.000	1.485	0.000	5.018	0.000
DD	3.318	3.768	0.000	3.499	0.036	3.510	0.002
MTR	0.304	0.334	0.000	0.320	0.009	0.298	0.191

Table 7. Costs of Earnings Management, Founding Family's Ownership, and CEO Position

Audit4: Big 4 Audit firm dummy variable, NEst: Number of Analysts who follow the firm, Cycle: Operation cycle, MShare: Market share of the firm, DD: Distance to default, MTR: Marginal tax rate.

	Correlation between FFO and Firm's Characteristics				Presence or Absence of CEO from Founding Family		
	Pearson	<i>p</i> -value	Spearman	<i>p</i> -value	DCEO=1	DCEO=0	<i>p</i> -value
Audit4	-0.024	0.007	-0.051	0.000	0.752	0.773	0.012
NEst	-0.154	0.000	-0.152	0.000	1.591	2.443	0.000
Cycle	0.009	0.332	-0.041	0.000	56.391	55.191	0.404
MShare	-0.223	0.000	-0.387	0.000	2.601	6.405	0.000
DD	0.067	0.000	0.058	0.000	3.693	3.332	0.000
MTR	0.082	0.000	0.075	0.000	0.324	0.305	0.000

Table 8. Further Results from Regression Analysis

Audit4: Big 4 Audit firm dummy variable, NEst: Number of Analysts who follow the firm, Cycle: Operation cycle, MShare: Market share of the firm, DD: Distance to default, MTR: Marginal tax rate. The six independent variables are the same with Table 5 and p -values are computed with White heteroskedasticity corrections. When Audit4 is used as a dependent variable, we run a logistic regression and Nagelkerke's pseudo R^2 is reported in the table.

	Intercept	FFO	DCEO	ROA	LEV	SLSG	LP	Adjusted R^2
Audit4	1.426	0.003	-0.075	0.026	0.000	0.001	0.001	0.061
p -value	0.000	0.081	0.202	0.000	0.852	0.932	0.155	
NEst	5.374	-0.040	-0.216	0.102	0.034	-0.036	0.011	0.110
p -value	0.000	0.000	0.178	0.000	0.000	0.010	0.000	
Cycle	49.456	0.120	1.487	-0.567	0.127	0.030	-0.023	0.133
p -value	0.000	0.001	0.157	0.000	0.001	0.792	0.017	
MShare	3.544	-0.061	-1.106	0.096	0.090	0.056	0.023	0.142
p -value	0.000	0.000	0.000	0.000	0.000	0.400	0.000	
DD	3.604	0.005	0.130	0.063	-0.032	-0.011	0.000	0.333
p -value	0.000	0.000	0.001	0.000	0.000	0.032	0.569	
MTR	0.287	0.001	0.000	0.007	-0.002	0.000	0.000	0.145
p -value	0.000	0.000	0.968	0.000	0.000	0.603	0.645	