Earnings management surrounding CEO turnover: evidence from Korea

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Abstract: This article examines the empirical relation between CEO turnover and earnings management in Korea using a sample of 317 CEO turnovers and 634 non-turnover control firms during the period of 2001-2008. We classify CEO turnovers into four types depending on whether the departure of outgoing CEO is peaceful or forced and the incoming CEO is promoted from within or recruited from outside the firm. We measure earnings management by both discretionary accruals and real activities management. We also control for the potential endogeneity of CEO turnover using Heckman's two-stage approach. After controlling for corporate financial performance and governance structure, we find upward earnings management by the departing CEO only when the departure is forced and the new CEO is an insider. In this case, the new CEO also engages in downward earnings management using both discretionary accruals and real activities management. We also find some evidence that the new CEO recruited from outside the firm manages discretionary accruals upward following the peaceful departure of predecessor. In all other types of CEO turnover, we do not find evidence of significant earnings management by either CEO.

Keywords: CEO turnover, earnings management, financial performance, corporate governance, Korea Stock Exchange

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I. Introduction

Corporate executives have diverse incentives to manage their firms' reported financial performance. They may do so to increase their compensation that is tied to accounting earnings, to benefit from stock sales when market reacts favourably to abnormally high accruals, to avoid separation and keep incumbency rents, to send better signals to market that can help their career, or to gain operational flexibility and control. Earnings can be managed either through discretionary accruals (Jones, 1991; Dechow et al., 1995; Dechow and Dichev, 2002; Kothari et al., 2005) or by altering the timing of real transactions such as advertising or R&D activities (Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin, 2010). A large body of literature provides evidence of earnings management in various contexts including proxy contests, corporate takeovers, CEO turnover, and IPO.[2]

CEO turnover provides an especially rich context for earnings management since it involves decisions by both the departing and incoming CEOs, and their incentives and opportunities to manage earnings may vary depending on the types of turnover. The departing CEO may try to inflate earnings to mask poor performance, to obtain a higher bonus in his last years on the job, or to obtain directorships or better employment after retirement. The incoming CEO may want to decrease earnings in his first year – the so-called big bath – to blame the predecessor's poor performance. Indeed much of the existing studies find upward earnings management prior to the outgoing CEO's departure and/or downward earnings management by the incoming CEO (Dechow and Sloan, 1991; Pourciau, 1993, Brickley et al. 1999; Reitenga and Tearney, 2003; Conyon and Florou, 2004).[3] Studies based on Australian data also provide evidence in support of a big bath, but there is little evidence of earnings management by the departing CEO (Wells, 2002; Godfrey et al., 2003; Wilson and Wang, 2010).

Although the above studies often distinguish between routine and non-routine departures, their results do not separate whether the incoming CEO is through internal promotion or external recruitment. The specific context of CEO turnover is likely to have different implications for earnings management by both the departing and

[2] See Healy and Wahlen (1999), Dechow et al. (2010) or Ronen and Yaari (2010) for a comprehensive survey, and Verrecchia (2001), Hermalin and Weisbach (2007) or Beyer et al. (2010) for related theoretical issues. Wilson (2011) provides a survey on the evidence from Australia.

[3] DeAngelo (1998) reports similar findings in proxy contests. Pourciau (1993) reports income-decreasing accruals by the outgoing CEOs in non-routine departures, possibly an attempt to reverse previously inflated accruals.

incoming CEOs. For example, the retiring CEO in a routine departure would have less incentive to manage earnings upward compared to the CEO who is forced to leave due, for example, to poor performance. Likewise, the internally groomed candidate who succeeds the predecessor in a routine departure would have less incentive to blame the predecessor compared to when the departure has been triggered by poor performance. The extent to which the new CEO can manage earnings would also depend on whether or not the departing CEO remains on the board and curbs opportunistic earnings management by the new CEO. Consequently, a further refinement of turnover types beyond routine versus non-routine departures is likely to provide new insight to earnings management surrounding CEO turnover.

An additional issue in detecting earnings management by the departing CEO is potential endogeneity since both earnings management and CEO turnover are likely to be associated with poor firm performance.[4] Murphy and Zimmerman (1993) argue that, since firm performance and turnover are negatively associated while firm performance and the discretionary variables are positively correlated, turnover and the discretionary variables are likely to be negatively correlated. However, one cannot infer that the negative association between turnover and the discretionary variables is due to the outgoing CEO's discretion; such an inference would be valid only after controlling for the structural relation between firm performance and the discretionary variables. Omitting firm performance in estimating the earnings management equation results in the correlated omitted variables problem, causing the coefficient on turnover to be biased.[5] Corporate governance is another potential source of endogeniety problem. Firms with robust governance system are more likely to discipline poorly performing CEOs and less likley to be subject to earnings management (Reitenga and Tearney, 2003; Xie et al., 2003; Conyon and Florou, 2004; Faleye et al., 2011).

The purpose of this paper is to address the above issues by classifying CEO turnovers into four types depending on whether the departure is peaceful or forced, and the succession is through internal promotion or external recruitment, at the same time tackling the endogeneity problem. The four types of CEO turnover are: peaceful

[4] Earnings management may also trigger CEO departure although the evidence is mixed. Beneish (1999) and Agrawal et al. (1999) do not find that manipulation increases turnover while Desai et al. (2006), Feroz et al. (1991), and Karpoff et al. (2008) provide evidence that restating firms do terminate their CEOs. More recently, Hazarika et al. (2012) report that the likelihood and speed of forced CEO turnover are positively related to a firm's earnings management, even after controlling for the possible endogeneity of CEO turnover and earnings management.

[5] Murphy and Zimmerman (1993) use a simultaneous equations model where CEO turnover is an endogenous variable. However, since CEO turnover variable is defined as a dichotomous dummy variable, their estimation suffers from heteroscedasticity as well as the violation of the constraint that the predicted values lie between zero and one.

departure succeeded by an internally promoted candidate; peaceful departure combined with an externally recruited candidate; forced departure replaced by an internal candidate; and forced departure accompanied by external replacement. For each type, we examine the relation between CEO turnover and earnings management by both the departing and incoming CEOs. In doing so, we use Heckman's two-stage approach (Heckman, 1979; Lee, 1979) to control for the possible endogeneity stemming from the linkage between corporate governance, firm performance and CEO turnover.[6] We also consider whether the firm's internal governance works to mitigate managerial opportunism under the context of CEO turnover.

Our sample covers 317 cases of CEO turnover from 2001 to 2008 for large Korean companies listed on the Korea Stock Exchange. In each of the four turnover types, we investigate earnings management by the outgoing CEO in his last year and the incoming CEO in his first year in tenure. As measures of earnings management, we use both performance-matched discretionary accruals and real activities management. Our main findings can be summarized as follows. First, consistent with existing evidence, the departing CEO manages earnings upward when the departure is forced. However, such upward earnings management is significant only when the departing CEO is replaced by an internal candidate. Moreover, earnings management in this case is through discretionary accruals, not real activities management. Second, we do not find significant earnings management by the departing CEO in case of peaceful departure regardless of whether the successor comes from within or outside the firm. Third, the internal candidate who replaces the incumbent CEO who is forced to leave takes a big bath using both discretionary accruals and discretionary expenditures. We do not find evidence of big bath in case of peaceful departure. Fourth, the incoming CEO recruited from outside following the peaceful departure of predecessor tends to manage earnings upward using discretionary accruals. These results are robust after controlling for the potential endogeneity arising from the systematic relations among firm performance, governance system, and CEO turnover.

This paper contributes to the literature in three ways. First, it is the first study to our knowledge that examines earning management in the four types of CEO turnover described above. Second, we control for the endogeneity problem, which is a

[6] Albeit in different contexts, Heckman's two-stage approach has been employed in several recent studies. It was used by Ball and Shivakumar (2005) to study comparative loss recognition timeliness in the U.K., Oswald and Zarowin (2007) to control for the endogenous R&D choice in explaining differential future earnings response coefficients, Ball and Shivakumar (2008) in examining the changes in earnings quality surrounding IPO, and Cohen and Zarowin (2010) to investigate the factors that influence a firm's decisions to manage earnings.

methodological improvement upon much of the existing studies on earnings management around CEO turnover. Third, this study provides the first comprehensive evidence from Korea on earnings management surrounding executive changes. The accounting environment in Korea provides a particularly interesting case to study earnings management. Many argue that the lack of accounting transparency was one of the potential culprits behind the financial crisis that hit hard the Korean economy in the late 1990s. Post-crisis reforms required that the Korean accounting community be ruled by the private sector standards-setting regime, benchmark the US model, and the business group firms have better corporate governance. Even after a series of far-reaching market-based reforms, however, international recognition of Korean accounting standards did not change much. This led to the full adoption of IFRS to set the Korean accounting standards to be in line with high quality global standards. By focusing on earnings management during the period of turbulent accounting reforms in Korea, this study intends to provide rich implications for understanding managerial opportunism surrounding the critical moments of executive changes.

The remainder of the paper is organized as follows. Section 2 discusses four types of CEO turnover and develops our hypotheses. Section 3 details our research design and Section 4 reports our main findings based on both univariate and multivariate analysis. We conclude the paper in Section 5 with some discussions.

II. Hypotheses

Our main hypotheses are that departing and incoming CEOs have different incentives and opportunities for earnings management depending on the context in which the turnover takes place. Specifically, we consider four types of CEO turnover based on whether the departure of CEO is peaceful or forced and the replacement is through the promotion of someone from inside the firm or recruitment from outside.

The first type of turnover represents peaceful departure and internal succession. We argue that there are least incentives and opportunities for earnings management in this context. First, this scenario represents a typical routine turnover where there is little conflict of interest between the outgoing and incoming CEOs. It is because this type of turnover is most likely a ‘relay process’: a successor is chosen several years in advance of the anticipated retirement of the incumbent CEO and, during the transition period, power and authority are gradually handed over to the chosen replacement until the title of CEO is formally given to the successor (Vancil, 1987). Another possibility is the ‘horse race’ in which several contenders are identified early and engage in a

fairly open competition to determine who will become the next CEO (Pourciau, 1993). In addition, the outgoing CEO typically remains on the board and so is in a position to monitor the new CEO while the incoming CEO as an insider can closely monitor the outgoing CEO.[7] Thus this type of turnover presents few opportunities for earnings management. In sum, the first type of turnover is structured in a way that minimizes moral hazard, providing less incentive and reduced opportunity for earnings management (Pourciau, 1993, p. 320). Thus we do not expect significant earnings management by either CEO in the first type of CEO turnover.

The second type of turnover combines peaceful departure with external recruitment. Since this type of turnover is not typically triggered by poor performance and the outgoing CEO is likely to remain in the firm after departure, the incentive and the opportunity of the departing CEO to engage in opportunistic earnings management could be relatively limited. For the incoming CEO, the presence of departing CEO in the firm may limit the opportunity to take a big bath. On the other hand, the incoming CEO as an outsider may be subject to high expectations of the board and shareholders, which may pressure him to show good results from the beginning. Thus the incoming CEO may have incentives for upward earnings management. However, the new CEO as an outsider may not have much knowledge about the firm's operation in the first year, which could limit the possibility of large scale earnings management. Thus in the second type of CEO turnover, we do not expect significant earnings management by the departing CEO but some upward earnings management by the incoming CEO.

The third type of turnover combines forced departure with internal succession. This provides the strongest incentives for earnings management by both outgoing and incoming CEOs. This type of turnover is typically the result of poor firm performance accumulated over the years, which eventually leads to the forced resignation of a CEO. Under such circumstances, the outgoing CEO is likely to have incentives to improve performance to avoid or delay forced separation by resorting to upward earnings management. The incoming CEO, on the other hand, has incentives to take a big bath to blame the predecessor's poor performance, thereby setting a low benchmark for his future performance evaluation and enhancing the possibility of dramatic turnaround during his tenure. Without the outoging CEO remaining on the board, the new CEO

[7] In our sample of 222 peaceful departures, outgoing CEOs remained in the firm or related companies in 156 cases, which accounts for 70%. This is comparable to what Brickely et al. (1999) found from the US data. From their sample of 277 CEO departures during 1989-1993 for large US companies, they report that departing CEOs continued to serve on their own boards in 137 cases. Although they do not report the proportion of those remaining on their own boards out of 166 normal departures, their logit analysis shows that departing CEOs are more likely to remain on their own boards when departure is normal retirement rather than triggered by poor performance.

also has the opportunity for such earnings management. Thus we expect upward earnings management by the departing CEO and downward earnings management by the incoming CEO.

The last type of turnover, forced departure combined with external replacement, is likely to represent the most dramatic turnover. It is often the result of merger, bankruptcy, and/or delisting (Kaplan and Minton, 2006). This situation typically requires a dramatic turnaround or shift in strategy, such as fundamental restructuring of business portfolios. Shareholders expect a bold move from the new CEO, who is likely to be an expert in the specific business area the company is looking forward to. The new CEO in this case may be too preoccupied with overall restructuring and refocusing of the firm, rendering earnings management secondary priority. Moreover, the opportunity for earnings management may be limited due to the high level of exposure to public and legal attention. Although the outgoing CEO has incentives for upward earnings management, dramatic structural changes may once again limit the opportunity for earnings management. In sum, both the incoming and outgoing CEO may have incentives for earnings management but the opportunity may be limited. Thus earnings management in this case may not be significant or is at best an empirical question.

III. Research Design

3.1 The Empirical model

To tackle the endogeneity problem discussed previously, we use Heckman's two-stage approach. This approach is designed to control for the firm's selection into CEO turnover on the basis of performance and governance structure. In the first stage, we use a probit model to estimate the probability of CEO turnover as a function of firm performance, corporate governance, and other control variables. In the second stage, we regress various measures of earnings management on the types of CEO turnover after controlling for firm performance, corporate governance, and the inverse Mills ratio obtained from the first-stage regression. Specifically the model for the first-stage regression is:

$$CEOTOV_{it} = \alpha_0 + \sum_k \alpha_{1k} PERF_{it-k} + \sum_j \alpha_{2j} GOV_{ijt} + \sum_j \alpha_{3j} CONTROL_{ijt} + \varepsilon_{it} \quad (1)$$

where $CEOTOV$ is a dummy variable which equals 1 in case of CEO turnover, $PERF$ denotes current and past firm performance, GOV denotes various proxies of

corporate governance, $CONTROL$ stands for additional control variables, and subscripts index firm (*i*) and time (*t*). $CEOTOV$ includes four different types of turnovers discussed in the previous section. Depending on the specific type of CEO turnover, the independent variables are likely to have different effects. For example, forced departure is likely to be more strongly associated with firm performance than peaceful departure. Similarly, when the CEO has significant share ownership, forced departure is less likely than peaceful departure.

Our second-stage model is designed to capture the level of earnings management associated with a specific type of CEO turnover.

$$EM_{it} = \beta_0 + \beta_1 CEOTOV_{it} + \sum_j \beta_{2j} GOV_{ijt} + \sum_j \beta_{3j} CEOTOV_{it} * GOV_{ijt} + \sum_j \beta_{4j} CONTROL_{ijt} + \beta_5 MILLS_{it} + \beta_6 CEOTOV_{it} * MILLS_{it} + u_{it} \quad (2)$$

where EM is a continuous variable capturing the level of earnings management and $MILLS$ is the inverse Mills ratio obtained from the first-stage regression. Our focus is on the coefficient to $CEOTOV$. Since $CEOTOV = 1$ in case of CEO turnover, significantly positive (negative) β_1 indicates upward (downward) earnings management surrounding CEO turnover. We also include the interaction terms between GOV and $CEOTOV$. The estimated coefficients to the interaction terms represent the incremental effect on earnings management for turnover firms relative to non-turnover control firms: when upward earnings management is expected, significantly positive (negative) coefficients to the interaction terms indicate that governance structure tends to amplify (mitigate) the upward earnings management for the turn-over sample; in case of downward earnings management, the opposite is true. The interaction term between $CEOTOV$ and $MILLS$ allows the coefficient to $MILLS$ to vary between turnover and non-turnover groups.[8]

3.2 Variable Measurement

3.2.1 Four Types of CEO Turnover

We define CEO as someone who holds the highest rank in the list of full-time executives reported in the company's quarterly and annual reports. As the focus of our study is on earnings management, we tried to make sure that the officer in ultimate

[8] Oswald and Zarowin (2007) include both terms and interpret that the endogeneity caused by selection bias is successfully controlled when the coefficients to these terms are statistically significant.

charge of the preparation of financial reports is designated as CEO. In cases of firms affiliated with large business groups, the founder-owner may exercise final control over all business affairs. Nevertheless, when the owner does not participate in business activities on a full-time basis regardless of the title attached, the separation of the owner from the title is not considered as a management change. By the same token, the resignation of a chairman of the board is not included as a CEO turnover unless the chairman also held the title of CEO.

The year of CEO turnover, denoted by $t = 0$, is defined as the first year the departing CEO does not have control over the firm's annual financial statements. It is also the first year the incoming CEO has control over the annual financial statements.[9] The departing CEO's last year in tenure, denoted by $t = -1$, is identified as the last year when the CEO had been in the position throughout the year. If the date of turnover falls around the first quarter, the CEO is considered to have maintained the position throughout the entire last year. This approach is to identify the last year when the CEO had control over the annual financial statements that are issued during the first quarter of each year. On the other hand, the CEO departing around the end of the year would not likely have had input into discretionary accounting decisions affecting the financial statements in the following year. To confirm the exact date of turnover, we examined the company history, news articles, and disclosure of executive changes reported in individual company websites and the Financial Supervisory Service's homepage.[10] To check whether the names of CEOs have changed from previous year, we also compared the names of top executives that appear in quarterly reports of the year when the turnover took place. We confirm that over 90% of the executive changes in our sample are made public in general stockholders' meeting in March.

We follow Huson et al. (2001) and Jenter and Kanaan (2008) to identify if CEO departure is forced. If an article in the business press indicates that the CEO was fired, was forced to leave, or left following a policy disagreement, then the departure is identified as forced. When the CEO is under 60 and the article reporting the announcement of departure does not report the reason for the departure as involving death, poor health or acceptance of another position elsewhere, the departure is also classified as forced. Finally, departure due to a merger, bankruptcy, or delisting is also classified as forced. In all other cases, the departure is considered peaceful. The type of succession – internal or external – is determined by referring to executive information

[9] Control over annual financial statements is evidenced by the incoming CEO being in the position of CEO at the end of the first quarter following the year-end.

[10] http://english.fss.or.kr/fss/en/main.jsp. The website provides access to the electronic database of audited annual reports of Korean firms, referred to as DART system.

in the TS-2000 database and news article search.[11] If the new CEO took the office by being promoted from inside the same or an affiliated company, then the case is classified as an internal succession; otherwise it is classified as an external succession. Based on these, we have four types of CEO turnover. Throughout the rest of the paper, type 1 turnovers refer to (peaceful departure, internal succession), type 2 turnovers refer to (peaceful departure, external recruitment), type 3 turnovers refer to (forced departure, internal succession), and type 4 turnovers refer to (forced departure, external recruitment).

3.2.2 Earnings Management Metrics

We examine earnings management during the last year of departing CEO's tenure ($t = -1$) and the first two years of new CEO's tenure ($t = 0, +1$). Following prior studies, we measure earnings management by both discretionary accruals and real activities management.

For discretionary accruals, we follow the cross-sectional models suggested by Dechow et al. (1995) and Kothari et al. (2005). For each year we estimate the model for every industry classified by the two-digit Korean Standard Industry Code. Our first model is the modified version of Jones model as described by Dechow et al. (1995):

$$TAC_{it} = \alpha_0 + \alpha_1(1/A_{it-1}) + \alpha_2(\Delta S_{it} - \Delta AR_{it}) + \alpha_3 PPE_{it} + \varepsilon_{it} \quad (3)$$

where ΔS_{it} and ΔAR_{it} are the change in sales and accounts receivable respectively, scaled by lagged total assets, A_{it-1}, and PPE_{it} is net property, plant and equipment scaled by A_{it-1}. Also $TAC_{it} = EBXI_{it} - CF_{it}$ where $EBXI$ is earnings before extraordinary items and discontinued operations, and CF is operating cash flow taken from the cash flow statement. Following Kothari et al. (2005), we also include a constant in the estimation. We use the residual from the regression model in (3) as the discretionary accruals, denoted by $DAMJ$.

Our alternative measure of discretionary accrual is similar to the modified Jones model, except that it is augmented by including ROA_{it-1}. Kothari et al. (2005) compare the effectiveness of two alternative ways of controlling for performance on measured discretionary accruals. In our paper, we choose the regression approach that includes the lagged ROA as an additional regressor instead of the matched-firm approach. This is mainly due to limited sample size. The augmented version of

[11] TS-2000 stands for Business Information Total Solution 2000, which is a Korean version of CRSP database, developed by Korea Listed Companies Association. It provides financial information on KRX- and KOSDAQ-listed companies and industrial data.

accruals model as described by Kothari et al. (2005) is given below:

$$TAC_{it} = \beta_0 + \beta_1(1/A_{it-1}) + \beta_2(\Delta S_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \beta_4 ROA_{it-1} + \varepsilon_{it}. \quad (4)$$

Our second measure of discretionary accruals is the residual from the regression model (4), denoted by $DAKW$.

For real earnings management, we follow Roychowdhury (2006) and Cohen and Zarowin (2010), and consider three metrics of the abnormal levels of cash flow from operations, production costs, and discretionary expenses. We express normal cash flow from operations as a linear function of sales and change in sales in the current period as follows:[12]

$$CF_{it} = \gamma_1(1/A_{it-1}) + \gamma_2 S_{it} + \gamma_3 \Delta S_{it} + \varepsilon_{it}. \quad (5)$$

Production costs are defined as $PROD_{it} = COGS_{it} + \Delta INV_{it}$, where $COGS$ is the cost of goods sold and ΔINV_{it} denotes changes in inventory. Following Dechow et al. (1998), normal $COGS$ is estimated as a linear function of contemporaneous sales, whereas normal inventory growth is estimated as a function of changes in sales in current and previous periods. Thus we estimate the normal level of production costs from the following industry-year regression:

$$PC_{it} = \delta_1(1/A_{it-1}) + \delta_2 S_{it} + \delta_3 \Delta S_{it} + \delta_4 \Delta S_{it-1} + \varepsilon_{it}. \quad (6)$$

The normal level of discretionary expenses can be expressed as a linear function of contemporaneous sales, similar to $COGS$. However, modeling discretionary expense as a function of current sales creates a mechanical problem if firms manage sales upwards to increase reported earnings in a certain year, resulting in significantly lower residuals from running such a regression even when they do not reduce discretionary expenses (Roychowdhuri, 2006, p.345). To address this issue, we model discretionary expenses as a function of lagged sales and estimate the following model to derive the normal levels of discretionary expenses:

$$DE_{it} = \lambda_1(1/A_{it-1}) + \lambda_2 S_{it-1} + \varepsilon_{it} \quad (7)$$

where DE represents the discretionary expenditure in period t, defined as the sum of advertising expenses, R&D expenses, and selling and administrative expenses.

The abnormal cash flow, abnormal production costs, and abnormal discretionary expenses are computed as the difference between actual values and the normal levels

[12] This model was developed by Dechow et al. (1998) and was implemented in Roychowdhury (2006). Subsequent studies including Cohen and Zarowin (2010) also rely on this model.

estimated from equations (5) to (7). We use these three variables as proxies for real earnings management: $abCF$ denotes the abnormal cash flow from (5), $abPC$ denotes the abnormal production costs from (6), and $abDE$ denotes the abnormal discretionary expenditure from (7). For a given sales level, firms that manage earnings upwards are likely to have unusually low cash flow from operations, and/or unusually low discretionary expenses, and/or unusually high production costs.

3.2.3 Corporate Governance Proxies

To proxy the effectiveness of a firm's corporate governance, we use a number of variables related to its ownership structure, board independence, affiliation with business group, and the characteristics of its external auditors. We define these variables below and offer some rationale for their inclusion in the study.

First, we choose several governance proxies based on the firm's ownership structure. CEOs with controlling stake in the firm may have more incentives and opportunities to manage earnings. On the other hand, block shareholders would want to prevent earnings management because the market discounts the value of firms suspected of earnings management. In addition, foreign owners tend to play an important role in monitoring management in Korea after the Asian Financial Crisis in the late 1990s (e.g., Chang and Shin, 2006). Thus our governance proxies based on ownership structure are: $OWN = 1$ if the CEO is the largest shareholder, = 0, otherwise; $BLOCK = 1$ if the firm has one or more block-holders with more than 5% of the voting stock, = 0 otherwise; FOR = the percentage of ownership held by foreign shareholders.

Second, we use board independence as another proxy for corporate governance, which is standard in the literature: $OUTSIDE$ = the proportion of independent directors on the board.

Third, we consider affiliation with a major business group as an alternative measure of corporate governance. As noted by Khanna and Palepu (1999), a business group is an organizational form that functions as an effective monitor of its affiliates and provides an internal labor market that facilitates labor mobility when external labor markets are underdeveloped. In major Korean business groups such as Samsung, LG, and SK, group headquarters play the role of monitoring and disciplining top management of group-affiliated firms (Campbell and Keys, 2002; Chang and Shin, 2006). The top business groups in Korea are called *chaebols* and are identified each year by the Korea Fair Trade Commissions based on the size of total assets. We

introduce a dummy variable to capture the affiliation in the top 30 business groups: $CHAEBOL = 1$ if the firm is affiliated with the top 30 business groups in a specific year, = 0, otherwise.

Our last proxy for governance relates to a firm's external auditors. Since external auditors attest to financial reports, they are probably the most important gatekeepers in blocking opportunistic earnings management, and higher quality audits are more likely to result in more conservative earnings. One measure of audit quality can be the size of audit firm either because larger auditors have more resources and can benefit from economies of scale (Danos and Eichenseher, 1982), or because they are also more concerned with their reputation (DeAngelo, 1981). Thus our last proxy for governance is defined as follows: $BIG4 = 1$ if the firm's auditor belongs to one of the top four audit firms in Korea affiliated with the so-called Big Four comprising Samil, Samjung, Hanyoung, Anjin, = 0, otherwise.

3.2.4 Firm Performance and Additional Control Variables.

We use three alternative measures of corporate financial performance: industry-adjusted ROA, industry-adjusted stock return, and sales growth.[13] Industry-adjusted ROA is calculated by subtracting the median ROA of the industry from the firm's ROA. Similarly, industry-adjusted stock return is calculated as the twelve-month return ending in three months after each fiscal year-end minus the contemporaneous equally-weighted industry index return. Sales growth is measured as the percentage change in sales revenue. We include sales growth since, in the Korean business climate, gross sales has been traditionally considered to represent the relative status and success of the firm. Thus the three performance measures are: $adjROA$ = firm ROA – median industry ROA during the same period; $adjSR$ = stock return over twelve months – median stock return of the industry; SG = (sales in year t – sales in year t-1)/sales in year t-1.

As additional control variables, we use leverage (LEV) as measured by the ratio of total liabilities to total assets, firm size ($SIZE$) as measured by a natural log of total assets, or sales ($SALES$) where applicable. These variables are used in many prior studies such as Chang and Shin (2006) and Hazarika et al. (2012).

[13] We use industry-adjusted performance measures since it is common in Korea that management performance is evaluated relative to other competitors in the same industry (Chang and Shin, 2006). These measures have been used in many previous studies including Hazarika et al. (2012).

IV.Empirical Results

4.1 Data and Descriptive Statistics

Our initial sample consists of 536 firm-year observations of CEO turnover during the period of 2001-2008 for firms listed on the Korea Stock Exchange.[14] Our primary sources of CEO turnover data are DART (Data Analysis, Retrieval and Transfer System), a database maintained by the Financial Supervisory Service (FSS), TS-2000 database, and articles in business press. We also use KIS-VALUE and Fn-Guide databases for financial and market information, ownership structure, firm history, and other data necessary for our analyses. We check the consistency of CEO turnover data by referring to company websites and disclosures on DART submitted by individual firms. From the initial sample, we exclude a number of observations. First, we exclude 24 observations from banking, finance and insurance industries to facilitate inter-industry comparison. Second, we exclude 14 observations that do not have sufficient information to compute earnings management metrics described previously. Third, we exclude 65 observations where CEO turnover was implemented over two consecutive years since it is not possible to clearly identify the departing CEO's last year in tenure and the incoming CEO's first year in office. Fourth, we exclude 89 observations where there are fewer than 10 observations in any two-digit SIC code in any given year. This is intended to exclude observations for which the regression-model-based earnings management proxies are likely to be imprecise. Finally we exclude observations for which earnings management metrics exceed 3 standard deviations from the mean. These filters altogether yield a sample of 317 turnover observations.

A profile of the turnover sample is presented in Table 1. The sample represents a fairly wide range of industry and types of CEO turnover. As shown in panel A, higher frequencies are observed in chemical, wholesale and retail, and electronic component industries. These industries are typically associated with larger number of firms and greater volatility in firm performance compared to other industries. In panel B, the sample is broken down to four sub-samples based on the types of CEO turnover. It shows that the largest number of turnovers (60.9%) can be described as a peaceful departure combined with an internal succession while a peaceful departure matched

[14] During 2001 – 2008, the number of listed firms varies from 683 to 756 and the number of CEO turnovers varies from 53 to 83. On average, about 9% of listed firms go through CEO turnover annually, which is comparable to the findings from the US where the annual rate CEO turnover is between 5% and 15% depending on the period and the sample (Ronen and Yaari, 2010).

with an external succession occupies the smallest proportion (14.5%). It also shows that internal successions constitute about 75% of the sample.[15] Finally we note most of the turnovers in top 30 *chaebols* are characterized by a peaceful departure and an internal succession reflecting relatively well-functioning internal labor markets: Korean chaebols are known to have well-developed internal systems to cultivate talented internal successors.

<Insert Table 1 about here.>

For each turnover observation, we randomly match two non-turnover observations based on industry and firm size, leading to the overall sample of 951 firm-years. Previous studies such as Murphy and Zimmerman (1993) and Pourciau (1993) employed the self-control approach whereby the years preceding the transition serve as a benchmark period. Since the incumbent CEO might attempt to manipulate earnings well before his departure, the self-control approach is not free from confounding effects. We believe the matched-sample methodology provides a better means of controlling for potential confounding factors. Other previous studies that used this methodology include Ball and Shivakumar (2005, 2008), Desai et al. (2006), and DuCharme et al. (2004). The detailed information about the control sample is available from the authors.

In Table 2, we present descriptive statistics for our sample. Panel A summarizes the information on firm performance, corporate governance proxies, and other control variables. Compared to those in the control group, firms in the turnover sample tend to have lower mean and median in all three measures of firm performance. As the significant difference in $OWN, CHAEBOL$ and $BLOCK$ indicates, firms in the turnover sample are also more likely to be affiliated with *chaebols*, more likely to have large block ownerhsip, and less likely to have CEOs as the largest shareholder. For other variables, we do not find significant difference between the turnover and non-turnover samples. In Panel B, we compare the five earnings management proxies between the two samples. We do not observe any discernible differences in these variables. A possible reason is that the mixture of different types of turnover in the turnover sample may obscure any clear distinction in earnings management behavior between the two groups of firms.

[15] The proportion of internal succession in Korea is slightly less than that in the US and Australia. Based on CEO departures in the US during 1974-1995, Agrawal et al. (2006) report that an insider succeeded the departing CEO in a little over 80% of the cases. From the sample of Australian CEO departures during 1984-1994, Wells (2002) finds that an insider succession accounts for 81.5%.

<Insert Table 2 about here.>

4.2 Univariate Analysis

In this section, we first provide univariate evidence on whether CEO turnover follows poor firm performance. We examine this by comparing the three performance measures for the two groups of firms for the period of $t = -3$ to $t = +1$. Table 3 provides the information and the results from the difference tests. As shown in the table, performance-related CEO turnover has strong support in all three measures of firm performance: performance measures are significantly lower for the turnover sample up to transition year ($t = 0$) but the difference becomes smaller or insignificant after the turnover.

<Insert Table 3 about here.>

Next we examine if there are any differences in earnings management depending on the types of CEO turnover. The results are reported in Table 4. For each event year and the type of turnover, we conduct parametric t-tests for means and non-parametric Wilcoxon rank sum tests for medians. We also conduct one-way ANOVA and Kruskal-Wallis tests for the comparison of earnings management metrics among the four types of turnover.

<Insert Table 4 about here.>

Panel A presents mean and median values of earnings management metrics at $t = -1$. We find significantly positive abnormal accruals in type 3 turnovers, which result in significant differences in means and medians among the four types of turnover. For other types of CEO turnover, we do not find significant earnings management at $t = -1$, both in discretionary accruals and in real activities manipulation. This implies upward earnings management in the last year of outgoing CEO's tenure only when separation is forced and succession is internal. However we do not find significant real earnings management for type 3 turnovers, which suggests that it is difficult for the incumbent CEO to manipulate real activities to manage earnings in his last year due to intense monitoring by internally promoted successor and the board of directors.

Panel B provides evidence on eanings management at $t = 0$. Interestingly, we

find earnings management in opposite directions for type 2 and 3 turnovers. Type 2 turnovers are associated with significantly positive earnings management using discretionary accruals. The absence of big bath in type 2 turnovers could be because of the peaceful nature of CEO turnover and the new CEO's desire to meet the expectations of the board and shareholders. However, we do not find evidence on abnormal real activities presumably because, as someone coming from outside, the new CEO does not have sufficient knowledge about the real activities of the new firm. On the other hand, the new CEO in type 3 turnovers appears to take a big bath using accruals as well as discretionary expenditure on real activities such as R&D and marketing. This could be because the relationship between the predecessor and the successor in this case is one of rivalry: the departing CEO is dismissed due to poor performance and replaced by internal contender. Thus only type 3 turnovers offer evidence consistent with what is predicted by typical earnings management hypotheses. As shown in panel C,we do not find any significant earnings management at $t = +1$.

In type 1 and 4 turnovers, we do not find any significant evidence on earnings management before and after the turnover. As for type 1 turnovers, we have argued in Section 2 that neither CEO has strong incentives for earnings management. In type 4 turnovers, the incentives exist although opprotunity may be limited. We examined closely the 49 firm-year observations in type 4 turnovers in our sample and found that the majority were associated with business combinations or reorganization of troubled companies.[16] As such, it is not surprising that we do not find significant discretionary accruals and/or abnormal real activities in type 4 turnover.

To summarize Table 4, our findings show that significant earnings management is concentrated at $t = -1$ and $t = 0$, and for type 2 and 3 turnovers. The departing CEO appears to engage in upward earnings management only when the departure is forced and the successor is promoted from within the firm. In this case, the new CEO tends to manage earnings downward, taking a big bath in the first year in office. In contrast, the new CEO recruited from outside after the peaceful departure of the predecessor appears to engage in upward earnings management. However, the univariate evidence does not tell us much about whether earnings management is driven by CEO turnover or by other confounding factors. We turn to this in the next section.

[16] Specifically, 37 cases represent turnovers under business combinations, 2 cases represent turnovers under workout of financially troubled companies, 2 cases are associated with the changes of statutory executives designated by the court, 2 cases represent the designation and dismissal of statutory CEOs by the court, and remaining 6 cases are related to business reorganizations.

4.3 Multivariate Analysis

We now estimate earnings management using Heckman's two-stage approach. In the first stage, we use a probit model to estimate the probability of CEO turnover as a function of firm performance, various governance proxies, and control variables. We estimate equation (1) for each type of CEO turnover where we use both current and one-period lagged performance measures and LEV as an additional control.[17] The results are shown in Table 5.

<Insert Table 5 about here>

As expected, performance measures are negatively related CEO turnover and the relation is particularly pronounced for forced turnovers. The coefficient to OWN is significantly negative in all types of CEO turnover for all measures of firm performance. The coefficient to $CHAEBOL$ is significantly positive only in type 1 turnovers, reflecting the fact that large business groups tend to rely on internal labor markets for orderly executive changes. The presence of block shareholders also increases the likelihood of CEO turnover in all types of CEO turnover, confirming the role of block ownership as an effective monitoring mechanism. There is also some indication that foreign ownership increases the probability of CEO turnover. Finally, firms with higher leverage are more likley to undergo forced departure combined with external replacement. This is not surprising since the majority of turnovers in this case are associated with business combinations or reorganization of troubled companies.

Our second-stage regression is based on equation (2), which includes the inverse Mills' ratio obtained from each of the four first-stage probit models. As control variables, we include $SIZE$, LEV, ROA, and $BIG4$. To control for the accrual reversal effect, we also include $LAG\ TAC$, total accrual of the previous period, which uses discretionary accrual as a dependent variable. We estimate equation (2) for each of the four types of CEO turnover at $t = -1$ and $t = 0$. We do not report the results for $t = +1$ since earnings management by the incoming CEO is mostly concentrated at $t = 0$, as found from the univariate analysis.[18] For the measure of discretionary accruals, we only use $DAKW$ since it is considered to be an improvement from

[17] Another control, $SIZE$, turns out to be strongly correlated with $CHAEBOL$. So we have omitted it to avoid multicollinearity in the probit model. Also we do not include $BIG4$ since the quality of auditor is more likely to be related to earnings management rather than CEO turnover, although it may affect CEO turnover through its effect on earnings management. $BIG4$ is included in the second-stage regression.

[18] The results for $t = +1$, available from the authors, indeed show that coefficients to $CEOTOV$ are insignificant in all types of CEO turnover.

$DAMJ$.[19] The results are reported in Tables 6 to 9, each table corresponding to each type of turnover.

Table 6 reports the results for type 1 turnovers, peaceful departure combined with internal succession. As previously discussed, there is little conflict of interest between the outgoing and incoming CEOs in this case. Thus we do not expect CEO turnover to be a main driver of earnings management, if any. Indeed we do not find any significant coefficient to $CEOTOV$ regardless of the earnings management metric and the event year. This is consistent with the results observed in the univariate analysis. The coefficients to two governance proxies, $CHAEBOL$ and $BLOCK$, are significantly negative for both groups of firms, which implies that firms affiliated with large business groups or under the influence of block shareholders tend to manage earnings more conservatively. The negative effect is amplified for the turnover sample as indicated by the negative coefficients to the interaction terms. $SIZE$ is negatively associated with earnings management while LEV is positively related, consistent with the findings in the existing literature.[20] The coefficients to the Mills ratio and its interaction term are significant, confirming the effectiveness of controlling for endogeneity of turnover variable.

<Insert Table 6 about here>

Table 7 presents the results for type 2 turnovers, peaceful departure combined with external recruitment. Again, similar to the results from the univariate analysis, only the incoming CEO appears to manage discretionary accruals upward: the coefficient to $CEOTOV$ is significantly positive only at $t = 0$ and only when earnings management is measured by $DAKW$. The coefficient estimates for $BLOCK$, $SIZE$, and LEV have the same signs as in type 1 turnovers.

<Insert Table 7 about here>

Table 8 reports the results for type 3 turnovers, forced departure combined with internal succession. The results are arguably most consistent with the typical description of earnings management by outgoing and incoming CEOs: the outgoing CEO manages earnings upward while the incoming CEO takes a big bath. The coefficient to $CEOTOV$ at $t = -1$ is significant and positive when $DAKW$ is used

[19] The results using $DAMJ$ are quite similar and are available from the authors.
[20] See, for example, Healy and Whalen (1999), Fields et al. (2001), or Ronen and Yaari (2010).

as a dependent variable, implying that the outgoing CEO chooses upward earnings management using discretionary accruals in his last year. On the other hand, the coeffcient to $CEOTOV$ at $t = 0$ is significant and negative for both $DAKW$ and $abDE$. This suggests that the incoming CEO engages in downward earnings management using discretionary accruals as well as discretionary charges such as R&D and advertising expenses in the first year in office, supporting the big-bath hypothesis. The coefficients to $CHAEBOL$ and $BLOCK$ continue to be significant and negative, and so are the coefficients to their interaction terms with $CEOTOV$. Thus upward earnings management by the outgoing CEO is partly mitigated under the presence of group headquarters and block shareholders. The coefficients to $SIZE$ and LEV have the expected signs as before.

<Insert Table 8 about here>

Table 9 provides the results for type 4 turnovers, forced departure combined with external recruitment. As discussed previously and confirmed in the univariate analysis, this type of turnover is generally associated with financial trouble or business restructuring, which heightens the level of public surveillance over the firm. Therefore it is hard to expect opportunistic earnings management by either CEOs. The results reported in the table corroborate this. The coefficient to $CEOTOV$ is not significant in all cases although $BLOCK$, $SIZE$, and LEV continue to have the same effect on earnings management as in other types of CEO turnover.

<Insert Table 9 about here>

V. Conclusion

Using a sample of executive changes in large Korean corporations during the period of 2001-2008, this paper has examined earnings management surrounding CEO turnover. Our study adds to the existing literature on the subject in several ways. First, we have proposed four types of CEO turnover depending on whether the departure of outgoing CEO is through a peaceful or forced process and the appointment of new CEO is through internal promotion or external recruitment. The rationale for such a classification is that each turnover type represents different incentives and opportunities for both the departing and incoming CEOs. Second, by employing Heckman's two stage approach, we explicitly address the problem of endogeneity of

CEO turnover that arises from the interrelations among CEO turnover, firm performance, corporate governance, and earnings management. Third, our paper is the first comprehensive study to our knowledge that provides evidence on the relation between CEO turnover and earnings management in the Korean context.

We recapitulate our main findings. First, the departing CEO manages earnings upward only when he is forced to leave and succeeded by an insider. Earnings management in this case is through discretionary accruals, not real activities management. In all other cases, we do not find significant evidence of earnings management by the departing CEO. Second, the insider who replaces the CEO who is forced to leave takes a big bath using both discretionary accruals and discretionary expenditures. We do not find evidence of big bath by the internally promoted CEO in case of peaceful departure. Third, the incoming CEO recruited from outside following the peaceful departure of predecessor tends to manage earnings upward using discretionary accruals. But we do not find evidence of earnings management by the externally recruited CEO following the forced departure of predecessor. In addition, our results from multivariate analysis show that CEO turnover is systematically associated with firm performance and governance structure. Specifically, CEO turnover is negatively related to firm performance and CEO ownership regardless of the types of CEO turnover, and positively related to the firm's affiliation with business group and the presence of block shareholders. The latter two are also shown to mitigate opportunistic earnings management.

We conclude the paper with some discussions for future work. First, as demonstrated by Fudenberg and Tirole (1995), and Hermalin and Weisbach (2007), the incentives for upward earnings management by the departing CEO seem clear in case of non-routine turnover. The cover-up, the horizon problem, and the post-horizon problem are all relevant in this case (Ronen and Yaari, 2010). But even in peaceful departure, the horizon and post-horizon problems matter although our findings do not lend support to this hypothesis. The answer could be found if we had more detailed information on the departing CEO's compensation at the time of separation and post-retirement career. Second, that the externally recruited CEO in case of peaceful turnover manages earnings upward needs better understanding. Our conjecture was that the new CEO as an outsider may want to meet the high expectation of the board and shareholders and therefore try to show good results from the beginning. But the reason why this is not the case for the internally promoted CEO begs clarification. To say the least, we need information on whether and how the compensation contract is qualitatively different for the internally promoted CEO and externally recruited CEO.

Third, our focus in this paper was on earnings management as a response to the board's decision to change executives. But the causal relation may exist in the other direction as in Hazarika et al. (2012). We leave these issues for future work.

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Table 1: Profile of CEO Turnover Sample

Panel A: Distribution by industry

Industry	Number of turnovers	Industry	Number of turnovers
Basic metal	24	Vehicles	26
Rubber and plastic	10	Electrical equipment	12
Other machinery and equipment	14	Professional services	11
Wholesale, retail	32	Electronic component	31
Non-metallic	14	Construction	30
Textile,clothing	19	Pulp and paper	19
Food	18	Chemical	43
Medicine	14		
		Total	317

Panel B: Distribution by turnover type

Type of turnovers		Number of turnovers		
Departure	Succession	Top30 business groups	Others	Total (%)
Peaceful	Internal	70	123	193 (60.9)
Peaceful	External	3	26	29 (9.1)
Forced	Internal	13	33	46 (14.5)
Forced	External	2	47	49 (15.5)
Total		88	229	317 (100)

Table 2: Descriptive Statistics

	Turnover Sample					Non-turnover Sample					Difference Tests	
Variable	Mean	Std. Dev.	Min	Median	Max	Mean	Std. Dev.	Min	Median	Max	t-statistics	z-statistics
Panel A: Firm Characteristic Variables												
adjROA	-0.023	0.130	-1.628	-0.019	1.026	0.000	0.118	-1.045	-0.001	1.208	-2.53***	-2.24**
SG	0.054	0.198	-0.679	0.046	1.583	0.069	0.175	-0.247	0.065	0.417	-2.18**	-2.03**
adjSR	0.005	0.228	-1.632	0.004	1.145	0.038	0.209	-1.016	0.026	1.328	-2.01*	-1.74*
SIZE	19.617	1.493	15.467	19.475	25.178	19.524	1.274	16.193	19.606	23.288	1.59	0.68
LEV	0.522	0.224	0.077	0.533	2.034	0.444	0.194	0.022	0.445	1.495	0.72	-0.29
OWN	0.190	0.393	0.000	0.000	1.000	0.499	0.500	0.000	0.000	1.000	-5.87***	-5.07***
CHAEBOL	0.278	0.451	0.000	0.000	1.000	0.173	0.378	0.000	0.000	1.000	1.93*	2.19**
OUTSIDE	0.322	0.163	0.000	0.286	0.727	0.314	0.141	0.000	0.271	0.750	0.69	0.43
BLOCK	0.146	0.342	0.000	0.000	1.000	0.105	0.354	0.000	0.000	1.000	1.74*	2.21**
FOR	0.059	0.073	0.000	0.031	0.727	0.054	0.086	0.000	0.036	0.815	1.32	1.27
BIG4	0.605	0.489	0.000	1.000	1.000	0.622	0.485	0.000	1.000	1.000	-1.07	0.84
Panel B: Earnings Management Proxies												
DAMJ	0.002	0.098	-0.442	0.000	0.397	0.006	0.088	-0.443	0.006	0.403	-0.86	-1.01
DAKW	-0.001	0.089	-0.411	-0.000	0.366	0.002	0.082	-0.382	0.001	0.409	-0.63	-0.27
abCF	0.002	0.080	-0.449	0.001	0.396	0.000	0.075	-0.413	-0.011	0.381	0.94	0.39
abPC	0.003	0.088	-0.328	0.004	0.427	-0.001	0.086	-0.376	-0.004	0.397	1.22	1.42
abDE	0.003	0.076	-0.321	0.003	0.321	-0.000	0.072	-0.424	0.003	0.439	1.16	0.73

Note: The difference tests are based on parametric t-test and non-parametric Wilcoxon rank sum tests. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 3: Financial Performance Surrounding CEO Turnover

Years around CEO turnover	Turnover sample			Non-turnover sample			Difference tests	
	n	Mean	Median	n	Mean	Median	t-stat	z-stat
Panel A : Industry-adjusted ROA								
-3	310	-0.0206	-0.0187	634	-0.0021	-0.0013	-3.01***	-2.35***
-2	314	-0.0224	-0.0199	634	-0.0018	-0.0010	-3.26***	-2.46***
-1	317	-0.0307	-0.0261	634	0.0002	-0.0001	-4.18***	-3.23***
0	317	-0.0182	-0.0144	634	-0.0004	-0.0002	-2.74***	-2.18**
+1	317	-0.0154	-0.0128	634	0.0006	0.0004	-2.03**	-1.71*
Panel B : Sales growth								
-3	310	0.0359	0.0329	634	0.0672	0.0589	-2.28**	-2.18**
-2	314	0.0475	0.0417	634	0.0694	0.0621	-1.97**	-2.01**
-1	317	0.0466	0.0438	634	0.0698	0.0659	-2.02**	-2.03**
0	317	0.0477	0.0434	634	0.0685	0.0629	-1.98**	-1.79*
+1	317	0.0668	0.0635	634	0.0672	0.0661	-1.55	-1.02
Panel C : Industry-adjusted stock return								
-3	310	-0.0286	-0.0191	634	0.0372	0.0365	-3.29***	-2.95***
-2	314	-0.0024	-0.0013	634	0.0298	0.0283	-2.63***	-2.92***
-1	317	0.0014	0.0009	634	0.0368	0.0300	-1.96**	-1.67*
0	317	-0.0022	-0.0017	634	0.0397	0.0326	-3.36***	-2.43***
+1	317	0.0170	0.0165	634	0.0353	0.0312	-1.14	1.29

Note: The difference tests are based on parametric t-test and non-parametric Wilcoxon rank sum tests. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 4: Results of Difference Tests in Earnings Management around CEO Turnover

Variables	Type 1 (n = 193)		Type 2 (n = 29)		Type 3 (n = 46)		Type 4 (n = 49)		Difference test	
	Mean (p-value)	Median (p-value)	Mean (p-value)	Median (p-value)	Mean (p-value)	Median (p-value)	Mean (p-value)	Median (p-value)	F-value	Chi-sq
Panel A. Earnings management in year t = -1										
DAMJ	0.003 (0.56)	0.003 (0.45)	0.002 (0.83)	0.003 (0.57)	0.022*** (0.00)	0.023** (0.00)	0.010 (0.14)	0.009 (0.11)	15.66***	11.78***
DAKW	0.004 (0.34)	0.004 (0.36)	0.002 (0.74)	0.003 (0.65)	0.017** (0.02)	0.015** (0.04)	0.009 (0.10)	0.010 (0.12)	9.33***	9.95***
abCF	0.000 (0.95)	0.000 (0.91)	0.002 (0.81)	0.002 (0.73)	0.004 (0.35)	0.003 (0.56)	0.001 (0.77)	0.000 (0.89)	0.73	1.74
abPC	0.003 (0.61)	0.002 (0.74)	0.004 (0.39)	0.002 (0.75)	0.001 (0.83)	0.000 (0.95)	0.002 (0.87)	0.001 (0.63)	0.22	1.56
abDE	0.000 (0.82)	0.001 (0.62)	-0.003 (0.66)	-0.002 (0.86)	0.000 (0.95)	0.000 (0.99)	0.003 (0.64)	0.003 (0.55)	1.53	2.34
Panel B. Earnings management in year t = 0										
DAMJ	0.000 (0.89)	0.000 (0.94)	0.007* (0.05)	0.005* (0.08)	-0.026*** (0.00)	-0.021*** (0.00)	-0.004 (0.32)	-0.002 (0.67)	25.75***	20.19***
DAKW	0.003 (0.52)	0.002 (0.69)	0.009** (0.02)	0.010** (0.02)	-0.025*** (0.00)	-0.026*** (0.00)	-0.005 (0.29)	-0.004 (0.51)	18.80***	14.51***
abCF	0.000 (0.95)	0.000 (0.91)	-0.001 (0.87)	0.000 (0.96)	0.002 (0.69)	0.000 (0.95)	-0.001 (0.73)	-0.000 (0.89)	0.42	1.80
abPC	0.002 (0.78)	0.003 (0.56)	0.000 (0.96)	0.000 (0.72)	-0.001 (0.85)	0.000 (0.98)	-0.000 (0.93)	-0.001 (0.77)	0.58	1.83
abDE	0.000 (0.98)	-0.001 (0.66)	-0.000 (0.85)	0.001 (0.83)	-0.014** (0.04)	-0.011* (0.06)	-0.004 (0.41)	-0.003 (0.60)	4.52**	4.16*

Table 4: Results of Difference Tests in Earnings Management around CEO Turnover (continued)

Variables	Type 1 (n = 193)		Type 2 (n = 29)		Type 3 (n = 46)		Type 4 (n = 49)		Difference test	
	Mean (p-value)	Median (p-value)	Mean (p-value)	Median (p-value)	Mean (p-value)	Median (p-value)	Mean (p-value)	Median (p-value)	F-value	Chi-sq
Panel C. Earnings management in year t = +1										
DAMJ	0.003 (0.52)	0.004 (0.47)	0.003 (0.61)	0.003 (0.55)	0.006 (0.35)	0.007 (0.28)	0.004 (0.42)	0.005 (0.30)	0.38	1.73
DAKW	0.003 (0.49)	0.000 (0.92)	0.004 (0.56)	0.003 (0.61)	0.005 (0.32)	0.005 (0.39)	0.002 (0.57)	0.002 (0.63)	0.96	1.65
abCF	-0.001 (0.78)	-0.001 (0.81)	-0.002 (0.65)	-0.001 (0.84)	-0.002 (0.67)	-0.001 (0.83)	-0.001 (0.75)	-0.000 (0.82)	0.58	1.34
abPC	0.000 (0.83)	0.001 (0.76)	0.000 (0.91)	0.000 (0.97)	-0.000 (0.93)	-0.000 (0.95)	-0.002 (0.64)	-0.001 (0.73)	0.22	0.62
abDE	0.000 (0.92)	0.000 (0.93)	0.002 (0.69)	0.001 (0.85)	-0.001 (0.83)	0.000 (0.98)	0.001 (0.86)	0.000 (0.95)	0.73	1.66

Note: The difference tests are based on parametric ANOVA as well as non-parametric Kruskal-Wallis tests. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 5: CEO Turnover Models - First Stage Probit Estimation

	Dependent variables											
	CEOTOV 1			CEOTOV 2			CEOTOV 3			CEOTOV 4		
Intercept	-0.359 (-2.05)**	-0.446 (-2.75)***	-0.456 (-2.75)***	-0.636* (-1.79)	-0.438 (-1.70)*	-0.436 (-1.76)*		-0.637 (-1.69)*	-0.630 (-1.67)*	-0.862 (-2.30)***	-0.483 (-3.07)***	-0.437 (-2.95)***
$adjROA_{t-1}$	-0.261 (-1.53)			-0.335 (-1.46)			-0.533 (-2.93)***			-0.509 (-2.65)***		
$adjROA_t$	-0.282 (-1.81)*			-0.393 (-1.74)*			-0.627 (-3.28)***			-0.962 (-3.88)***		
SG_{t-1}		-0.458 (-1.79)*			-0.267 (-1.76)*			-0.278 (-2.74)***			-0.454 (-2.57)***	
SG_t		-0.549 (-2.09)**			-0.234 (-1.81)*			-0.303 (-3.15)***			-0.386 (-2.15)**	
$adjSR_{t-1}$			-0.183 (-1.53)			-0.186 (-1.45)			-0.265 (-1.74)*			-0.277 (-2.53)***
$adjSR_t$			-0.226 (-1.81)*			-0.192 (-1.73)*			-0.396 (-2.95)***			-0.293 (-2.77)***
OWN	-0.488 (-4.12)***	-0.488 (-4.13)***	-0.486 (-4.12)***	-0.419 (-4.01)***	-0.381 (-3.99)***	-0.386 (-3.86)***	-0.501 (-4.15)***	-0.562 (-4.27)***	-0.574 (-4.40)***	-0.455 (-4.05)***	-0.307 (-3.84)***	-0.256 (-3.79)***
CHAEBOL	0.348 (2.58)***	0.337 (2.50)***	0.333 (2.46)***	-0.761 (-1.16)	-0.742 (-1.14)	-0.945 (-1.43)	0.142 (1.79)*	0.124 (1.72)*	0.107 (1.68)*	-0.011 (-0.27)	-0.092 (-0.41)	-0.109 (-0.45)
OUTSIDE	0.116 (1.28)	0.108 (1.16)	0.113 (1.20)	0.103 (1.08)	0.102 (1.08)	0.095 (0.92)	0.136 (1.25)	0.135 (1.26)	0.129 (1.17)	0.104 (1.03)	0.092 (0.87)	0.086 (0.81)
BLOCK	2.026 (1.81)*	1.978 (1.79)*	1.952 (1.77)*	2.917 (2.59)***	2.169 (2.51)***	3.889 (2.47)***	2.522 (2.52)***	2.875 (2.70)***	2.764 (2.56)***	2.992 (2.91)***	2.948 (2.89)***	2.781 (2.73)***
FOR	0.842 (1.16)	0.875 (1.22)	0.881 (1.22)	0.303 (1.91)*	0.382 (1.95)*	0.304 (1.93)*	0.613 (1.72)*	0.745 (2.09)**	0.724 (2.07)**	0.456 (1.52)	0.281 (1.48)	0.383 (1.23)
LEV	0.253 (0.81)	0.306 (0.98)	0.298 (0.95)	0.185 (1.30)	0.183 (1.27)	0.290 (1.35)	0.243 (1.03)	0.215 (0.93)	0.212 (1.31)	0.377 (2.70)***	0.396 (3.37)***	0.304 (3.32)***
No. of turnovers	193	193	193	29	29	29	46	46	46	49	49	49
No. of observation	579	579	579	87	87	87	138	138	138	147	147	147
Estrella R-square	0.1708	0.1742	0.1701	0.2716	0.2759	0.2689	0.4472	0.4233	0.4082	0.3617	0.3412	0.3229

Note: t-statistics are reported in the parentheses. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 6: Earnings Management around Type 1 CEO Turnovers – Second-stage OLS Estimation

	Dependent variables							
Event year	t = -1				t = 0			
	DAKW	abCF	abPC	abDE	DAKW	abCF	abPC	abDE
Intercept	0.036	0.126*	-0.553***	-0.168**	-0.035	-0.027	-0.157**	-0.108*
CEOTOV	**0.025**	**0.032**	**0.035**	**0.027**	**0.031**	**0.028**	**0.039**	**0.034**
OWN	0.011	0.053	0.021	0.034	0.025	0.023	0.018	0.019
CHAEBOL	-0.089***	-0.058***	-0.122***	-0.131***	-0.046*	-0.032*	-0.069**	-0.054**
OUTSIDE	-0.011	0.013	-0.004	-0.009	-0.020	-0.014	0.003	-0.016
BLOCK	-0.164***	-0.258*	-0.239**	-0.196**	-0.145**	-0.175**	-0.144**	-0.135**
FOR	0.030	0.043	0.018	0.017	0.011	-0.023	-0.010	0.028
CEOTOV×OWN	0.086	0.017	0.066	0.021	0.035	0.014	0.015	0.009
CEOTOV×CHAEBOL	-0.112*	-0.018	-0.078	-0.156*	-0.037*	-0.027	-0.059*	-0.045*
CEOTOV×OUTSIDE	-0.109	-0.132	-0.147	-0.128	-0.015	-0.013	0.004	-0.007
CEOTOV×BLOCK	-0.187**	-0.258*	-0.139*	-0.176**	-0.127*	-0.115*	-0.107*	-0.112*
CEOTOV×FOR	0.059	0.062	0.096	0.017	0.007	-0.012	-0.013	-0.008
SIZE	-0.245**	-0.152*	-0.139**	-0.178**	-0.256***	-0.207**	-0.266***	0.366***
LEV	0.523**	0.425**	0.303***	0.479***	0.422**	0.491***	0.445***	0.465***
BIG4	-0.011	-0.031	-0.017	-0.006	-0.034	-0.036	-0.016	-0.013
ROA	0.110*	-0.100*	-0.008	0.011	0.142**	-0.242***	-0.179**	-0.209**
LAG TAC	0.102				0.073*			
MILLS	-0.409***	-0.163*	-0.320***	-0.154**	-0.141*	0.107*	-0.265***	-0.239***
CEOTOV×MILLS	-0.301***	-0.406**	-0.146*	-0.195**	-0.179*	-0.264**	0.227**	0.175*
No. of turnovers	193	193	193	193	193	193	193	193
No. of observation	579	579	579	579	579	579	579	579
Adj R- square	0.1794	0.1141	0.1327	0.1618	0.1273	0.1195	0.1295	0.1278
F-value	17.89**	14.30**	15.62***	16.19***	14.91***	14.69***	15.02***	14.96***

Note: ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 7: Earnings Management around Type 2 CEO Turnovers – Second-stage OLS Estimation

	Dependent variables							
Event year	t =-1				t =0			
	DAKW	abCF	abPC	abDE	DAKW	abCF	abPC	abDE
Intercept	0.510**	0.234*	0.239*	0.398**	0.322**	-0.043	-0.067	0.282**
CEOTOV	**0.075**	**0.098**	**0.028**	**0.042**	**0.149****	**0.017**	**-0.014**	**0.013**
OWN	0.051	0.043	0.061	0.045	0.041	-0.048	0.037	0.062
CHAEBOL	-0.071	-0.075	-0.046	-0.058	-0.039	-0.055	-0.047	-0.041
OUTSIDE	0.020	0.001	-0.013	0.016	-0.104**	-0.016	-0.029	-0.018
BLOCK	-0.133**	-0.160**	-0.195**	-0.231***	-0.206***	-0.183**	-0.149*	-0.142*
FOR	-0.044	-0.019	-0.023	-0.025	-0.015	-0.024	-0.029	-0.020
CEOTOV×OWN	0.040	0.035	0.042	0.065	0.013	-0.005	0.012	0.033
CEOTOV×CHAEBOL	-0.076	-0.029	-0.064	-0.018	-0.029	-0.009	-0.015	-0.010
CEOTOV×OUTSIDE	-0.028	-0.013	-0.010	-0.020	-0.059**	-0.000	-0.004	-0.002
CEOTOV×BLOCK	-0.083*	-0.049*	-0.102**	-0.205**	-0.065**	-0.057**	-0.052*	-0.043*
CEOTOV×FOR	-0.107	-0.070	-0.083	-0.013	-0.001	-0.011	-0.016	-0.006
SIZE	-0.325***	-0.298***	-0.268***	-0.309***	-0.204**	-0.242***	-0.309***	-0.276***
LEV	0.531***	0.278**	0.340***	0.473***	0.315***	0.395***	0.443***	0.403***
BIG4	-0.035	0.023	0.042	0.059	-0.016	-0.068	-0.038	0.019
ROA	0.051*	0.061*	0.025	-0.019	0.014*	0.064*	-0.034*	-0.062*
LAG TAC	0.132				0.156*			
MILLS	-0.127*	-0.125	-0.198*	-0.151*	-0.109*	-0.167**	0.029	-0.132*
CEOTOV×MILLS	0.211**	0.129*	0.237**	-0.133*	-0.245**	-0.270***	0.037	-0.092
No. of turnovers	29	29	29	29	29	29	29	29
No. of observation	87	87	87	87	87	87	87	87
Adj. R-square	0.2850	0.2236	0.2991	0.2864	0.3309	0.2794	0.1969	0.2690
F-value	8.67***	7.19***	8.82***	8.76***	11.02***	8.15***	6.11***	7.93***

Note: ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 8: Earnings Management around Type 3 CEO Turnovers – Second-stage OLS Estimation

	Dependent variables							
Event year	t =-1				t =0			
	DAKW	abCF	abPC	abDE	DAKW	abCF	abPC	abDE
Intercept	-0.166	-0.149*	-0.273*	0.164	0.195*	0.125	-0.237*	-0.219*
CEOTOV	**0.136****	**0.011**	**0.016**	**0.025**	**-0.242*****	**-0.002**	**-0.019**	**-0.165****
OWN	0.097	0.068	0.071	0.090	0.027	-0.010	0.017	0.055
CHAEBOL	-0.063**	-0.059*	-0.064**	-0.124**	-0.140*	-0.016	-0.037	-0.049*
OUTSIDE	-0.013*	-0.007	-0.010	-0.017	-0.011*	-0.008	-0.005	-0.008
BLOCK	-0.172**	-0.141**	-0.193**	-0.195**	-0.126**	-0.107**	-0.117**	-0.180**
FOR	-0.046	-0.018	-0.027	-0.019	-0.028	-0.015	-0.003	-0.016
CEOTOV×OWN	0.026	0.014	0.019	0.064	0.013	-0.006	0.002	0.011
CEOTOV×CHAEBOL	-0.053*	-0.037*	-0.047*	-0.094**	-0.091*	-0.015	-0.010	-0.013
CEOTOV×OUTSIDE	-0.011*	-0.008	-0.008	-0.003	-0.006	-0.003	-0.000	-0.004
CEOTOV×BLOCK	-0.125**	-0.103*	-0.156**	-0.163**	-0.005	-0.083*	-0.073*	-0.096*
CEOTOV×FOR	-0.014	-0.005	-0.018	-0.019	-0.013	-0.009	-0.000	-0.011
SIZE	-0.293***	-0.248***	-0.287***	-0.211***	-0.239***	-0.151**	-0.186**	-2.303***
LEV	0.108**	0.260***	0.182***	0.215***	0.350***	0.279***	0.107**	0.263***
BIG4	-0.012	-0.009	0.015	0.014	-0.007	-0.011	-0.018	-0.008
ROA	0.064*	0.123**	0.041	-0.088	0.041*	-0.137**	-0.002	0.130*
LAG TAC	-0.156**				0.094*			
MILLS	-0.111**	-0.053	-0.095**	-0.104**	-0.130**	0.010	-0.106**	-0.107**
CEOTOV×MILLS	-0.158***	-0.146**	-0.183***	0.167**	0.237***	-0.008	0.085	0.194***
No. of turnovers	46	46	46	46	46	46	46	46
No. of observation	138	138	138	138	138	138	138	138
Adj. R-square	0.3385	0.2373	0.2880	0.2421	0.3763	0.1604	0.1647	0.2832
F-value	10.91***	8.15***	8.67***	8.36***	11.54***	5.53***	5.65***	8.54***

Note: ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Table 9: Earnings Management around Type 4 CEO Turnovers – Second-stage OLS Estimation

	Dependent variables							
Event year	t =-1				t =0			
	DAKW	abCF	abPC	abDE	DAKW	abCF	abPC	abDE
Intercept	0.036	-0.136*	-0.064	0.152*	-0.165*	-0.113	-0.159*	0.145*
CEOTOV	**0.014**	**0.043**	**0.013**	**0.019**	**-0.013**	**-0.003**	**-0.029**	**-0.020**
OWN	0.065	0.034	0.035	0.033	0.072	0.026	0.019	-0.010
CHAEBOL	-0.067	-0.023	-0.029	-0.039	-0.002	-0.017	-0.013	-0.022
OUTSIDE	-0.019	-0.011	-0.016	-0.012	-0.020	-0.004	-0.008	-0.083*
BLOCK	-0.192**	-0.152*	-0.351***	-0.364***	-0.126*	-0.108*	-0.242**	-0.207**
FOR	0.043	-0.032	-0.048	-0.061*	-0.013	-0.024	-0.009	-0.006
CEOTOV×OWN	0.008	0.011	0.031	0.017	0.010	0.008	0.002	-0.003
CEOTOV×CHAEBOL	-0.014	-0.015	-0.019	-0.017	-0.000	-0.006	-0.008	-0.011
CEOTOV×OUTSIDE	-0.007	-0.009	-0.007	-0.010	-0.003	-0.000	-0.001	-0.026
CEOTOV×BLOCK	-0.157**	-0.113*	-0.161**	-0.224**	-0.086	-0.027	-0.102*	-0.099*
CEOTOV×FOR	0.099	0.051	0.062	0.041	-0.007	0.009	-0.005	-0.003
SIZE	-0.268***	-0.120**	-0.178***	-0.301***	-0.214***	-0.311***	-0.297***	-0.257***
LEV	0.260***	0.322***	0.261***	0.287***	0.317***	0.220***	0.243***	0.254***
BIG4	-0.037	-0.012	-0.012	-0.019	-0.018	-0.002	0.013	0.015
ROA	0.160**	-0.078*	-0.040	0.157**	0.147**	-0.017	0.192**	0.025
LAG TAC	-0.031				-0.132*			
MILLS	-0.079	-0.058	-0.125**	-0.020*	-0.133**	-0.104*	-0.135**	0.029
CEOTOV×MILLS	-0.112*	0.054	-0.164**	-0.129**	-0.105*	0.080	-0.163**	-0.018
No. of turnovers	49	49	49	49	49	49	49	49
No. of observation	147	147	147	147	147	147	147	147
Adj. R-square	0.1765	0.1632	0.1708	0.1877	0.1646	0.1503	0.1625	0.1722
F-value	8.09***	7.38***	7.96***	8.54***	7.46***	6.82***	7.29***	8.00***

Note: ***, **, * indicate significance at the 1, 5 and 10% level, respectively.