CEO tenure and earnings management ☆

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ABSTRACT

This study examines changes in CEOs' incentive to manage their firms' reported earnings during their tenure. Earnings overstatement is greater in the early years than in the later years of CEOs' service, and this relation is less pronounced for firms with greater external and internal monitoring. These results suggest that new CEOs try to favorably influence the market's perception of their ability in their early years of service, when the market is more uncertain. Also, consistent with the horizon problem, earnings overstatement is greater in the CEOs' final year, but this result obtains only after controlling for earnings overstatement in their early years of service.

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1. Introduction

Earnings management by CEOs in the first year and the last year of their service as CEO has been the subject of several prior studies. These studies show that new CEOs associated with non-routine executive changes overstate expenses/losses of their firms in their first year of service, attribute them to the previous CEOs, and then take credit for the resulting higher reported earnings in the subsequent years (e.g., Strong and Meyer, 1987; Elliott and Shaw, 1988; DeAngelo, 1988; Pourciau, 1993). Prior studies also predict that CEOs overstate earnings in their final year of service in order to boost their final year's pay; although, extant empirical evidence related to this prediction is mixed (see e.g., Dechow and Sloan, 1991; Pourciau, 1993; Murphy and Zimmerman, 1993; Cheng, 2004; Kalyta, 2009). However, there is no study on CEOs' incentives to manage earnings during the other years of their service. Our study predicts that the incentive to overstate earnings is greater in the CEOs' early years of service than in the later years of service due to career concerns and provides supporting evidence.[1]

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  [1] These CEO incentives to manage earnings are in addition to those associated with overstating expenses/losses in the first year of non-routine CEO changes and overstating earnings in the last year of service as CEO.

The market is likely to be more uncertain about CEOs' ability in the early years of their service, and earnings reported at that time would have a greater effect on the market's assessment of their ability (see e.g., Fama, 1980; Gibbons and Murphy, 1992; Hermalin and Weisbach, 1998; Holmstrom, 1999).[2] The market's perception of a CEO's ability is a valuable asset, because it is associated with several long-term benefits to the CEO, such as higher future compensation, reappointments, and managerial autonomy (see e.g., Fama, 1980; Hermalin and Weisbach, 1998). Holmstrom (1982) argues that because of career concerns managers are motivated to work harder in the early years of service, while the market is still assessing their ability. We argue that to favorably influence the market's perception of their ability, CEOs also have greater incentive to overstate earnings in the early years than in the later years of their service.

For the sample period 1992–2010, discretionary accruals are significantly higher and abnormal discretionary expenses, such as R&D expenses, are significantly lower in the early years (the first three years) than in the later years of CEOs' service. The annual ROA overstatement in the early years as compared to the later years of CEOs' service is about 25 percent. Furthermore, the difference in earnings overstatement between the early and later years of CEOs' service is significantly smaller for firms with higher institutional ownership, greater analyst following, more independent board of directors, and more independent audit committee. These results suggest that, as expected, earnings overstatement is greater in the early than in the later years of CEOs' service and that greater monitoring of CEOs mitigates this effect.

Moreover, consistent with some of the prior empirical studies on earnings management in the final year of the departing CEOs, we find that earnings overstatement is not significantly higher in the final year as compared to their other years in office. However, after controlling for earnings overstatement in the early years of CEOs' service, we find that earnings overstatement is significantly greater in their final year, consistent with the horizon problem of the departing CEOs.

An alternative explanation for observing greater earnings overstatement in the early years of CEOs' service is that only low ability CEOs overstate earning in their early years of service, and they get fired within a few years of becoming a CEO because their earnings management is detected (Desai et al., 2006; Hazarika et al., 2012). We repeat our analysis for a sample consisting of CEOs who stay in office for a relatively long period, at least six or nine years, which are the median and the 75th percentile values, respectively, for the number of years a CEO stays in office. These CEOs are likely to be of high ability (Milbourn, 2003). Our results continue to hold for this subsample, suggesting that even high ability CEOs overstate earnings in their early years of service.

Our conclusions are robust to several additional sensitivity checks. For the sample consisting of CEOs with long stay in office, discretionary accruals in the early years of their service reverse in the subsequent years. This result suggests that higher discretionary accruals in the early years of CEOs' service reflect earnings overstatement. Also, our conclusions are robust to replacing abnormal discretionary expenses, which includes advertising, R&D, and SG&A expenses, with just R&D expense, which is the variable commonly used in prior studies on earnings management by departing CEOs. Finally, we repeat our analyses after considering write-offs (or write-downs) of assets as an earnings management measure (Elliott and Shaw, 1988; Elliott and Hanna, 1996). Consistent with prior studies (e.g., Elliott and Shaw, 1988), we find that in the first years of CEOs service write-offs are significantly greater, adversely affecting reported income. We further show that write-offs are significantly smaller in the second and third years as well as in the final year of CEOs' service, consistent with CEOs' incentive to overstate earnings in these periods.

Our study makes the following contributions. As mentioned earlier, prior studies have examined earnings management in the year of CEO change and in the final year of CEOs' service. We examine earnings management during CEOs' other years in office and show that earnings overstatement is greater in the early than in the later years of CEOs' service, presumably due to CEOs' career concerns. This evidence complements Graham et al.'s (2005) survey finding that three-fourths of the CEOs view career concern as an important motivator for earnings management. Our study also provides an explanation for the mixed evidence in the literature on earnings management in CEOs' final year in office. Specifically, we show that if earnings management in CEOs' early years of service is not controlled for, tests of earnings management in the CEOs' final year can provide misleading results.

Our study also has implications for whether CEO reputation affects earnings management. Francis et al. (2008) predict that reputed CEOs are less likely to manage earnings, because they would incur a greater loss of human capital. Using media coverage as a proxy for CEO reputation and unsigned discretionary accruals as a measure of earnings management, they find results that are inconsistent with the prediction. LaFond (2008) questions their measure of CEO reputation, noting that not all press is good press. He also suggests that signed accruals are better than unsigned accrual for examining earnings management. Our result that earnings overstatement is greater in the early years than in the later years of CEOs' service is consistent with Francis et al.'s prediction and it does not have the problems noted by LaFond (2008). Milbourn (2003) argues that the length of service as CEO proxies for CEO reputation, because a longer serving CEO would have survived more retention/dismissal decisions. Also, our tests use signed discretionary accruals and abnormal discretionary expenses as the earnings management measures.

Finally, our study complements Pan et al. (2013), who show that firms disinvest in the first couple of years of CEO's tenure and increase investment subsequently. They argue that in the early years of service, CEO disinvests poorly performing

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[2] Prior accounting studies have examined reputation of CEOs, directors, and firms in terms of financial reporting credibility (see e.g., Srinivasan, 2005; Farber, 2005; Desai et al., 2006; Wilson, 2008). In this paper, CEO reputation refers to the market's perception of CEOs' ability, and not its perception of CEOs' financial reporting credibility.

assets that his/her predecessor established and was unwilling to sell. Subsequently, the CEO overinvests after gaining more control over the board. We argue that the incentive to manage earnings also changes with CEOs' tenure. Our finding that discretionary expenses, such as R&D, advertising, and SG&A are smaller in the early than the later years of CEOs' service is consistent with the Pan et al. (2013) investment story. However, our earnings management story seems just as viable since these expenditures are not capitalized as an investment on the books and cutting them improves earnings.[3] Moreover, our results that discretionary accruals are greater in the early years of CEOs' service, that these discretionary accruals reverse in subsequent years, and that write-offs affect reported income unfavorable in the CEO change year but not in the two subsequent years are consistent with our earnings management story and cannot be explained away by the Pan et al.'s investment story.

The rest of the paper is organized as follows. Section 2 reviews the related literature and presents our hypotheses. Section 3 discusses the methodology, Section 4 the data, and Section 5 the results. Section 6 concludes the paper.

2. Hypotheses development and empirical predictions

Gibbons and Murphy (1992) argue that the market is usually uncertain about the ability of newly appointed CEOs. They note that even if a CEO is promoted from within the organization, the market may still be uncertain about the CEO's ability, because the skills required to be a successful CEO are different from the skills required at the lower level position. They also show that CEOs rarely leave a firm to join another.[4] So for newly appointed CEOs, past record of performance as CEOs is not available to the market in most cases. Thus, to assess new CEOs' ability, the market tends to rely on their current performance (Fama, 1980; Holmstrom, 1982, 1999). To avoid being labeled as having low ability, which may adversely affect their future compensation and autonomy and may lead to their dismissal, CEOs are likely to have strong incentives to report good performance in the early years of their service. Holmstrom (1982) argues that these incentives will make managers work harder in their early years of service in order to generate good performance. We further argue that CEOs are also more likely to overstate earnings in their early years of service.

A potential concern with the above argument is that if CEOs are aware of their superior ability and they know that they can perform well in the long run, why they would overstate earnings and risk being labeled as opportunistic reporters. This label may destroy their credibility. Oyer (2008) and Axelson and Bond (2009) argue that at the beginning of their service as CEO, there is sufficient adverse selection, and show that if managers report poor outcome, they get labeled as "low ability" managers, and their whole career tend to suffer as a result. This argument suggests that even a high ability CEO would inflate earnings to avoid reporting poor performance in the early years of their service, even if the poor outcome is not due to poor managerial ability.

The market may detect an earnings overstatement, especially after observing the firm's future performance, and this could lead to the CEO's dismissal (Desai et al., 2006). However, earnings overstatements are less likely to be detected in firms with subsequent good performance, which is more likely to happen in firms with higher ability CEOs. Thus, these CEOs are more likely to be reappointed and would continue to remain in office beyond the first few years of their initial appointment (Milbourn, 2003). The market is likely to perceive CEOs who have been with their firms longer as being more talented than CEOs who have been with their firms for a shorter time period. Having established a reputation of high ability, CEOs with long tenure would be keen on protecting their reputation and hence are less likely to engage in opportunistic behavior.[5] For these CEOs the benefits from overstating earnings are likely to be less than the related costs. In case of poor current performance, the market is more likely to attribute it to factors other than the CEOs' ability, and hence the benefit of overstating earnings is likely to be small. On the other hand, detection by the market of a single overstatement can cause a large decline in these CEOs' reputation.

Based on the above arguments, we propose the following:

Hypothesis H1. Earnings overstatement is greater in the early years of CEOs' service than in the later years of CEOs' service.

For our empirical analyses, we consider earnings overstatement through accruals and discretionary expenses (R&D, advertising, and SG&A). Thus, hypothesis H1 leads to the following empirical predictions. First, discretionary accruals are greater in the early years of CEOs' service than in the later years of CEOs' service. Second, abnormal discretionary expenses are smaller in the early years of CEOs' service than in the later years of CEOs' service.

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[3] In an attempt to control for the Pan et al. investment story, our tests for earnings management control for increase/decrease in discretionary expenses due to CEOs' incentives to invest/disinvest by using abnormal discretionary expense (Roychowdhury, 2006) and by using total asset growth and employment growth as control variables in the abnormal discretionary expenses models.

[4] Gibbons and Murphy (1992) and Brickley et al. (1999) report that in their samples, CEO departures for taking a CEO position in another firm are 2.2 percent and 3.2 percent, respectively.

[5] Our argument is consistent with that of Diamond (1989), who analyzes the process of reputation acquisition in the debt market. He argues that in an adverse selection setting, managers with a short track of repayment record are more likely to invest opportunistically in risky projects. For such managers, reputation loss resulting from repayment default is very low, but risky projects can likely lead to abnormally high investment returns. After managers have established reputation of repayment of loans through their track record, they become less opportunistic about investing in risky projects because a single default can cause a large decline in their reputation, which could lead to cut of credit or increase in the interest charged on future borrowings.

Finally, hypothesis H1 also has the following empirical implication for examining earnings management by departing CEOs. Prior studies argue that voluntary departing CEOs overstate earnings to favorably influence their final year pay. For testing this prediction, it is important to control for CEOs' incentive to overstate earnings in their early years of service. An omission of this control will bias against finding evidence of greater overstatement of earnings in the final year of CEOs' service than in their other years in office.

If we observe higher discretionary accruals and lower abnormal discretionary expenses in the early years of CEOs' service, as predicted, there could still be a concern that our results may not be due to CEOs' incentive to overstate earnings, but due to a systematic error in our measures of earnings management. To address this issue, we examine whether the predicted relation between CEO tenure and earnings management is weaker in firms with stronger monitoring, because stronger monitoring is expected to mitigate CEOs' opportunistic behavior. Accordingly, we propose the following hypothesis.

Hypothesis H2. The difference in earnings overstatement between the early and the later years of CEOs' service is smaller in firms with stronger monitoring of CEOs.

To empirically test the above hypothesis, we follow prior studies and consider institutional ownership and analyst following as indicators of the degree of external monitoring of CEOs, and independence of board of directors and independence of audit committees as indicators of the extent of internal monitoring of CEOs. Bushee (1998) and Collins et al. (2003) show that greater institutional ownership reduces CEOs' incentive to manipulate earnings. They note that monitoring can occur explicitly through governance activities. For example, institutional investors can influence audit committees to actively participate in ensuring proper internal control procedures for accurate financial statements. Monitoring can also occur implicitly through information gathering. Institutional investors have the ability and the resources to detect earnings overstatement, which they would adjust for before pricing the securities of the firms (Collins et al., 2003). Healy and Palepu (2001) suggest that analysts engage in private information production that helps detect earnings management and Yu (2008) shows that greater analyst following is associated with less earnings management. Finally, Klein (2002) shows that greater independence of board of directors and of audit committee are associated with less earnings management. Based on the above discussion, we make the following empirical predictions. The difference in earnings overstatement between the early and the later years of CEOs' service is smaller in firms with higher institutional ownership, higher analyst following, greater independence of board of directors, and greater independence of audit committee. Evidence consistent with these predictions will provide further support to the conclusion that the observed higher discretionary accruals and lower abnormal discretionary expenses in the early years of CEOs' service are likely to be due to CEOs' incentive to overstate earnings.

3. Methodology

We use a cross-sectional model of accruals proposed by McNichols (2002) to estimate discretionary accruals. She combines the Jones (1991) and Dechow and Dichev (2002) models, and suggests the following model to estimate discretionary accruals.

$$ACC_{it}/A_{it-1} = \lambda_0 + \lambda_1 CFO_{it-1}/A_{it-2} + \lambda_2 CFO_{it}/A_{it-1} + \lambda_3 CFO_{it+1}/A_{it}$$
$$+ \lambda_4 \Delta REV_{it}/A_{it-1} + \lambda_5 PPE_{it}/A_{it-1} + \varepsilon_{it} \tag{1}$$

ACC_{it} is the accruals of firm i in year t, defined as earnings before extraordinary items minus cash flow from operations. A_{it-1} is the total asset of firm i at the beginning of year t. CFO_{it} (CFO_{it-1}, CFO_{it+1}) is the cash flow from operations in year t ($t-1$, $t+1$). ΔREV_{it} is the change in revenue in year t. PPE_{it} is the gross property, plant, and equipment at the beginning of year t.

To proxy of real-activities based earnings management, we use abnormal discretionary R&D, advertising, and selling, general, and administrative expenses. Reducing these expenses boosts current period earnings.[6] To estimate the abnormal level of discretionary expenses, we use the following cross-sectional model (Roychowdhury, 2006).

$$DISEXP_{it}/A_{it-1} = \mu_0 + \mu_1(1/A_{it-1}) + \mu_2(S_{it-1}/A_{it-1}) + \varepsilon_{it} \tag{2}$$

$DISEXP_{it}$ is the discretionary expenses of firm i in year t, defined as sum of R&D, advertising, and selling, general and administrative expenses. If data for selling, general, and administrative expense is available, and data for R&D and advertising expenses are missing, these two expenses are set to zero. A_{it-1} is the total asset of firm i at the beginning of year t. S_{it-1} is the sales of firm i in year $t-1$.

We estimate Eqs. (1) and (2) separately for each two-digit SIC industry-year group, using all observations for which required data are available on Compustat database. We also require that each industry-year group has at least ten observations. The residuals of these regressions are used as measures of discretionary accruals and abnormal discretionary expenses.

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[6] Roychowdhury (2006) considers other measures of real activities manipulation. We decided to use abnormal discretionary expenses for ease of comparability with prior studies on earnings management by CEOs in the first year and the last year of their service (e.g., Dechow and Sloan, 1991; Murphy and Zimmerman, 1993).

We use the following model of discretionary accruals to test hypothesis H1. The control variables in this model are based on prior studies (e.g., Frankel et al., 2002; Ashbaugh et al., 2003; Cheng and Warfield, 2005; Ali et al., 2007; Pan et al., 2013).[7]

$$Discretionary\ Accruals_{it} = a_0 + a_1\ Early\ Years_{it} + a_2\ CEO\ Ownership_{it} + a_3\ CEO\ Age_{it}$$
$$+ a_4\ LnMVEquity_{it} + a_5\ MarketBookRatio_{it} + a_6\ Litigation\ Risk_{it} + a_7\ Leverage_{it}$$
$$+ a_8\ Institutional\ Ownership_{it} + a_9\ Merger\&Acquisition_{it} + a_{10}\ Issuer_{it}$$
$$+ a_{11}\ ROA_{it} + a_{12}\ Loss_{it} + a_{13}\ CFO_{it} + a_{14}\ Lagged\ Accruals_{it} + a_{15}\ Lagged\ NOA_{it}$$
$$+ a_{16}\ Total\ Asset\ Growth_{it} + a_{17}\ Employment\ Growth_{it} + \delta_{it} \qquad (3)$$

Discretionary Accruals$_{it}$ is the discretionary accruals of firm i and year t, estimated as the residual of the accruals model given by Eq. (1). *Early Years*$_{it}$ is an indicator variable that equals one for firm-years that correspond to the first three years of CEOs' service, and is zero otherwise. As shown in Fig. 1, we consider the CEO change year and the two following years as early years. Using three years as the cutoff to define *Early Years*$_{it}$ is somewhat arbitrary.[8] However, we later justify this cutoff by estimating earnings overstatement for each of the first five years of CEOs' service. We predict a positive coefficient on *Early Years*$_{it}$, consistent with hypothesis H1 that earnings overstatement is greater in the early than in the later years of CEOs' service.

The other explanatory variables in Eq. (3) are control variables. We define these variables below, but for brevity do not discuss the rationale for their association with discretionary accruals. We provide such a discussion in the results section for the variables that exhibit significant explanatory power. *CEO Ownership*$_{it}$ is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. *CEO Age*$_{it}$ is the CEO's age at the beginning of year t. *LnMVEquity*$_{it}$ is the log of market value of equity at the beginning of year t. *MarketBookRatio*$_{it}$ is the market value of equity divided by the book value of equity at the beginning of year t. *Litigation Risk*$_{it}$ is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. *Leverage*$_{it}$ is the total debt divided by total assets at the beginning of year t. *Institutional Ownership*$_{it}$ is the percentage of stocks held by institutional investors at the beginning of year t. *Merger&Acquisition*$_{it}$ is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. *Issuer*$_{it}$ is an indicator variable that equals one if *Merger&Acquisition*$_{it}$ is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. *ROA*$_{it}$ is earnings before extraordinary items in year t divided by total assets at the beginning of the year t. *Loss*$_{it}$ is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. *CFO*$_{it}$ is cash flow from operations in year t scaled by total assets at the beginning of year t. *Lagged Accruals*$_{it}$ is total accruals in year $t-1$ scaled by total assets at the beginning of the year. *Lagged NOA*$_{it}$ is net operating asset at the beginning of year t, defined as shareholders' equity less cash and marketable securities, plus total debt, deflated by sales.

The last two control variables in Eq. (3) are *Total Asset Growth*$_{it}$, defined as change of total asset during year t, scaled by the total asset at the beginning of year t and *Employment Growth*$_{it}$, defined as change of employment during year t, scaled by the employment at the beginning of year t. These two variables have not been considered in discretionary accruals models of prior studies, but are important in our context. Thus, we discuss the reasons for including these variables in detail. Pan et al. (2013) document that firms disinvest early in CEO's tenure and increase investment subsequently, leading to "cyclical" firm growth in assets and in employment over CEO tenure. Furthermore, Fairfield et al. (2003) and Zhang (2007) argue that accruals measure investment in working capital, which is an integral part of the firm's overall business growth. Therefore, working capital (and accruals) should co-vary with other growth related business activities, such as investment in fixed assets and hiring new employees. They provide evidence consistent with this argument. The findings of these prior studies suggest that the incentive to disinvest in the early years of CEOs' service would lead to lower accruals in those years. Thus, if this confounding factor is not properly controlled for, the results from our analyses could be biased against finding support for our prediction that discretionary accruals are greater in the early years of CEOs' service than in the later years of their service. We control for this confounding factor by including *Total Asset Growth*$_{it}$ and *Employment Growth*$_{it}$ in our discretionary accruals model, because Pan et al. (2013) note that these two variables measure the combined effect of disinvestment and investment in a firm.[9]

We use the following model of abnormal discretionary expenses to test hypothesis H1. The control variables in this model are based on prior studies (e.g., Roychowdhury, 2006; Cohen and Zarowin, 2010; Zang, 2012; Cheng et al., 2012;

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[7] We repeat our analyses after replacing discretionary total accruals with discretionary working capital accruals, as defined in Allen et al. (2012). Our results are robust to using this alternative measure of discretionary accruals.

[8] Gibbons and Murphy (1992) use four years as the cutoff for a similar variable in their analysis. For their sample period of 1970–1988, the median value for the number of years as CEO when leaving office is eight years, whereas, for our sample period of 1992–2010, the corresponding median value is six years.

[9] A concern with using the variable *Total Asset Growth*$_{it}$ is that accruals is one of its components. We therefore repeat our analyses after replacing this variable with an alternative variable, growth in capital expenditure (Zhang, 2007). Following Zhang (2007), we also repeat our analyses after including as control variables not only the current period's growth, but the previous period's growth and the next period's growth as well. Our results are robust to these alternative specifications of our discretionary accruals model. Also note that our results related to discretionary accruals are robust to not using any controls for growth in assets and in employment.
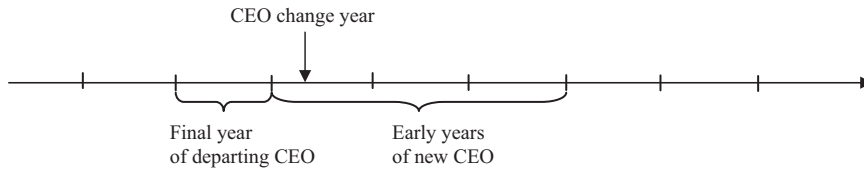
Fig. 1. Timeline for defining variables related to CEOs' service years.
Early Years$_{it}$ is an indicator variable that equals one for firm-years that correspond to the first three years of CEOs' service, and is zero otherwise. *Final Year$_{it}$* is an indicator variable that equals one for the year prior to the CEO change year, and is zero otherwise.
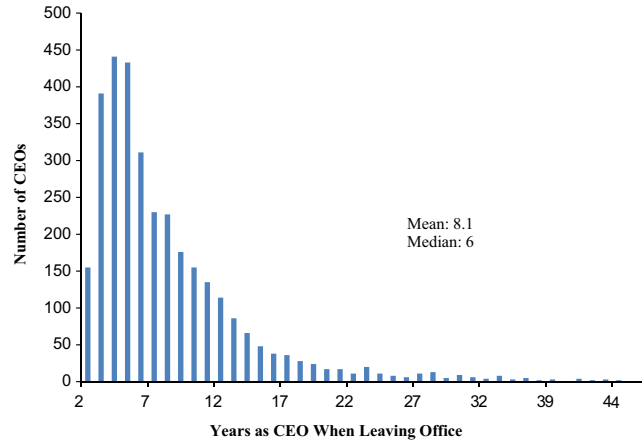

Fig. 2. Frequency distribution of years of service as CEO when leaving office.
Histogram and statistics are based on 2,278 CEOs, representing 1,688 firms, who leave their firms during the sample period 1992–2010.

Pan et al., 2013).

$$
\begin{aligned}
Abnormal\ Discretionary\ Expenses_{it} = {} & b_0 + b_1\ Early\ Years_{it} + b_2\ CEO\ Ownership_{it} \\
& + b_3\ CEO\ Age_{it} + b_4\ LnMVEquity_{it} \\
& + b_5\ MarketBookRatio_{it} + b_6\ Leverage_{it} \\
& + b_7\ ROA_{it} + b_8\ Firm\ Age_{it} + b_9\ Analyst\ Following_{it} \\
& + a_{10}\ Total\ Asset\ Growth_{it} \\
& + a_{11}\ Employment\ Growth_{it} + \delta_{it}
\end{aligned}
\tag{4}
$$

Abnormal Discretionary Expenses$_{it}$ is the abnormal discretionary expenses of firm *i* and year *t*, estimated as the residual of the discretionary expenses model given by Eq. (2). *Early Years$_{it}$* is defined as in Eq. (3). We predict that the coefficient on *Early Years$_{it}$* is negative, which indicates that earnings overstatement is greater for firm-years that correspond to the first few years than to the later years of CEOs' service. The other variables in Eq. (4) are control variables. We define these variables here, but for brevity do not discuss the rationale for their association with abnormal discretionary expenses. We provide such a discussion in the results section for the variables that exhibit significant explanatory power. The following variables have been defined earlier: *CEO Ownership$_{it}$*, *CEO Age$_{it}$*, *LnMVEquity$_{it}$*, *MarketBookRatio$_{it}$*, *Leverage$_{it}$*, *ROA$_{it}$*, *Total Asset Growth$_{it}$*, and *Employment Growth$_{it}$*. *Firm Age$_{it}$* is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database. *Analyst Following$_{it}$* is the 12-month average of the number of analysts who issued annual earnings forecasts in year *t*, as reported in IBES Summary.

The variables *Total Asset Growth$_{it}$* and *Employment Growth$_{it}$* have not been used by prior studies in their models of abnormal discretionary expenses. We, therefore, discuss the reasons for including these variables in detail. As noted before, Pan et al. (2013) document that firms disinvest early in a CEO's tenure and increase investment subsequently. To the extent that investment in discretionary expenses, such as, R&D, advertising, and SG&A co-vary with other business growth activities, we may draw a spurious conclusion that abnormal discretionary expense are lower in the early than in the later years of CEOs' service due to earnings management incentives. We control for this confounding factor by including in our model *Total Asset Growth$_{it}$* and *Employment Growth$_{it}$*, the two variables used by Pan et al. (2013) to measure the combined effect of disinvestment and investment in a firm.

4. Data and descriptive statistics

For the years 1992–2010, we obtain data on CEO tenure, CEO age, and CEO ownership from ExecuComp, financial statement data from Compustat, return data from CRSP, institutional holding data from Thomson Reuters 13f File, analyst

Table 1
Descriptive statistics of the variables in the regression models.

Panel A: variables in the discretionary accruals model (Eq. (3))

	Mean	STD	Median	Q1	Q3
Discretionary Accruals$_{it}$	0.0054	0.0773	0.0036	−0.0346	0.0405
Early Years$_{it}$	0.3694	0.4827	0.0000	0.0000	1.0000
Final Year$_{it}$	0.1307	0.3371	0.0000	0.0000	0.0000
CEO Ownership$_{it}$	0.0180	0.0453	0.0021	0.0003	0.0096
CEO Age$_{it}$	55.653	7.375	56.000	51.000	60.000
LnMVEquity$_{it}$	7.4601	1.5936	7.3546	6.3638	8.4677
MarketBookRatio$_{it}$	2.9394	2.6778	2.1377	1.4514	3.3720
Litigation Risk$_{it}$	0.2373	0.4254	0.0000	0.0000	0.0000
Leverage$_{it}$	0.2525	0.1679	0.2432	0.1220	0.3596
Institutional Ownership$_{it}$	0.5463	0.3288	0.6284	0.3302	0.8054
Merger&Acquisition$_{it}$	0.1644	0.3707	0.0000	0.0000	0.0000
Issuer$_{it}$	0.2852	0.4515	0.0000	0.0000	1.0000
ROA$_{it}$	0.0345	0.1376	0.0427	0.0151	0.0765
Loss$_{it}$	0.1503	0.3574	0.0000	0.0000	0.0000
CFO$_{it}$	0.1042	0.1002	0.0966	0.0533	0.1499
Lagged Accruals$_{it}$	−0.0541	0.1125	−0.0435	−0.0769	−0.0149
Lagged NOA$_{it}$	1.9098	4.3040	0.9729	0.6512	1.7830
Total Asset Growth$_{it}$	0.1355	0.2981	0.0691	−0.0046	0.1804
Employment Growth$_{it}$	0.0626	0.2254	0.0178	−0.0333	0.1111
Number of observations			20,206		

Panel B: Variables in the abnormal discretionary expenses model (Eq. (4))

	Mean	STD	Median	Q1	Q3
Abnormal Discretionary Expenses$_{it}$	−0.0190	0.1871	−0.0186	−0.1113	0.0464
Early Years$_{it}$	0.3636	0.4810	0.0000	0.0000	1.0000
Final Year$_{it}$	0.1174	0.3219	0.0000	0.0000	0.0000
CEO Ownership$_{it}$	0.0201	0.0486	0.0024	0.0004	0.0112
CEO Age$_{it}$	55.451	7.462	55.000	51.000	60.000
LnMVEquity$_{it}$	7.3009	1.5678	7.1614	6.2160	8.2765
MarketBookRatio$_{it}$	3.0545	2.6783	2.2274	1.5007	3.5572
Leverage$_{it}$	0.2156	0.1745	0.2019	0.0545	0.3359
ROA$_{it}$	0.0527	0.0920	0.0511	0.0170	0.0956
Firm Age$_{it}$	23.964	18.610	18.000	10.000	33.000
Analyst Following$_{it}$	8.7965	7.6368	7.0909	2.9000	13.0909
Total Asset Growth$_{it}$	0.1378	0.3256	0.0715	−0.0044	0.1864
Employment Growth$_{it}$	0.0673	0.2284	0.0261	−0.0340	0.1210
Number of observations			24,161		

The sample period is from 1992 to 2010. **Discretionary Accruals$_{it}$** is discretionary accruals of firm i and year t, estimated as the residual of the accruals model (Eq. (1)). **Abnormal Discretionary Expenses$_{it}$** is abnormal discretionary expenses of firm i and year t, estimated as the residual of the discretionary expenses model (Eq. (2)). **Early Years$_{it}$** is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. **Final Year$_{it}$** is an indicator variable that equals one for the year prior to the turnover year of the firm's CEO, and is zero otherwise. **CEO Ownership$_{it}$** is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **CEO Age$_{it}$** is the CEO's age at the beginning of year t. **LnMVEquity$_{it}$** is the log of market value of equity at the beginning of year t. **MarketBookRatio$_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year t. **Litigation Risk$_{it}$** is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **Leverage$_{it}$** is defined as total debt divided by total assets at the beginning of year t. **Institutional Ownership$_{it}$** is the percentage of stocks held by institutional investors at the beginning of year t. **Merger&Acquisition$_{it}$** is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. **Issuer$_{it}$** is an indicator variable that equals one if Merger&Acquisition$_{it}$ is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. **ROA$_{it}$** is earnings before extraordinary items in year t divided by total assets at the beginning of the year t. **Loss$_{it}$** is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. **CFO$_{it}$** is cash flow from operations in year t scaled by the total assets at the beginning of year t. **Lagged Accruals$_{it}$** is total accruals in year $t-1$ scaled by total assets at the beginning of the year. **Lagged NOA$_{it}$** is the net operating asset at the beginning of year t, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **Total Asset Growth$_{it}$** is change of total asset during year t, scaled by the total asset at the beginning of year t. **Employment Growth$_{it}$** is change of employment during year t, scaled by the employment at the beginning of year t. **Firm Age$_{it}$** is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database. **Analyst Following$_{it}$** is 12-month average of the number of analysts who issued annual earnings forecasts in year t, as reported in IBES Summary.

forecast data from IBES Summary, and board and audit committee independence data from RiskMetrics. Our final sample for the discretionary accruals models contains 20,206 firm-year observations, representing 4,625 CEOs and 2,704 firms. The sample for abnormal discretionary expenses models contains 24,161 firm-year observations, representing 5,043 CEOs and 2,842 firms.

Fig. 2 reports for our sample the frequency distribution of the number of years of service as CEO when the CEO leaves office. This plot is based on the data of only those CEOs that left office during our sample period 1992–2010. Thus, the plot is

Table 2
Early years of CEOs' service and earnings management.

Panel A: Dependent variable=Discretionary Accruals$_{it}$

	(1)		(2)	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.0585***	8.30	0.0590***	8.30
Early Years$_{it}$	0.0037***	3.11		
Year One$_{it}$			0.0018	1.17
Year Two$_{it}$			0.0044***	2.69
Year Three$_{it}$			0.0037**	2.21
Year Four$_{it}$			0.0008	0.49
Year Five$_{it}$			0.0004	0.23
CEO Ownership$_{it}$	0.0375**	2.37	0.0376**	2.39
CEO Age$_{it}$	0.0002**	2.12	0.0002*	1.86
LnMVEquity$_{it}$	−0.0024***	−4.11	−0.0025***	−4.50
MarketBookRatio$_{it}$	0.0015***	3.72	0.0012***	3.08
Litigation Risk$_{it}$	−0.0004	−0.19	0.0002	0.11
Leverage$_{it}$	−0.0145***	−3.18	−0.0101**	−2.25
Institutional Ownership$_{it}$	−0.0054**	−2.35	−0.0058***	−2.57
Merger&Acquisition$_{it}$	−0.0066***	−3.84	−0.0060***	−3.51
Issuer$_{it}$	0.0005	0.44	0.0005	0.44
ROA$_{it}$	0.1378***	4.89	0.2083***	4.98
Loss$_{it}$	−0.0382***	−9.57	−0.0295***	−5.47
CFO$_{it}$	−0.4571***	−17.71	−0.4789***	−15.40
Lagged Accruals$_{it}$	0.0026	0.35	−0.0033	−0.32
Lagged NOA$_{it}$	−0.0011***	−2.85	−0.0010***	−2.97
Total Asset Growth$_{it}$	0.0392***	9.73	0.0354***	9.27
Employment Growth$_{it}$	−0.0125***	−3.08	−0.0101***	−2.59
Adj. R^2	0.2963		0.3137	
Number of observations	20,206		20,206	

Panel B: Dependent variable=Abnormal Discretionary Expenses$_{it}$

	(1)		(2)	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.1246***	4.87	0.1255***	4.79
Early Years$_{it}$	−0.0095***	−2.73		
Year One$_{it}$			−0.0103**	−2.18
Year Two$_{it}$			−0.0103**	−2.24
Year Three$_{it}$			−0.0087**	−1.98
Year Four$_{it}$			−0.0012	−0.26
Year Five$_{it}$			−0.0013	−0.30
CEO Ownership$_{it}$	0.0248	0.39	0.0241	0.38
CEO Age$_{it}$	−0.0011***	−2.87	−0.0011***	−2.84
LnMVEquity$_{it}$	−0.0149***	−5.91	−0.0149***	−5.91
MarketBookRatio$_{it}$	0.0125***	8.89	0.0125***	8.88
Leverage$_{it}$	−0.1062***	−6.92	−0.1062***	−6.92
ROA$_{it}$	−0.1432***	−4.76	−0.1431***	−4.76
Firm Age$_{it}$	0.0000	0.17	0.0000	0.17
Analyst Following$_{it}$	0.0011***	2.55	0.0011***	2.54
Total Asset Growth$_{it}$	0.0655***	8.98	0.0656***	8.97
Employment Growth$_{it}$	0.0045	0.52	0.0045	0.52
Adj. R^2	0.0699		0.0699	
Number of observations	24,161		24,161	

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **Discretionary Accruals$_{it}$** is discretionary accruals of firm i and year t, estimated as the residual of the accruals model (Eq. (1)). **Abnormal Discretionary Expenses$_{it}$** is abnormal discretionary expenses of firm i and year t, estimated as the residual of the discretionary expenses model (Eq. (2)). **Early Years$_{it}$** is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. **Year One$_{it}$, Year Two$_{it}$, Year Three$_{it}$, Year Four$_{it}$, Year Five$_{it}$,** are indicator variables that equal one if the observation is for the first, second, third, fourth, fifth year of CEOs' service, respectively, and are zero otherwise. **CEO Ownership$_{it}$** is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **CEO Age$_{it}$** is the CEO's age at the beginning of year t. **LnMVEquity$_{it}$** is the log of market value of equity at the beginning of year t. **MarketBookRatio$_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year t. **Litigation Risk$_{it}$** is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **Leverage$_{it}$** is defined as total debt divided by total assets at the beginning of year t. **Institutional Ownership$_{it}$** is the percentage of stocks held by institutional investors at the beginning of year t. **Merger&Acquisition$_{it}$** is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. **Issuer$_{it}$** is an indicator variable that equals one if *Merger&Acquisition$_{it}$* is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. **ROA$_{it}$** is

earnings before extraordinary items in year t divided by total assets at the beginning of the year t. **$Loss_{it}$** is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. **CFO_{it}** is cash flow from operations in year t scaled by the total assets at the beginning of year t. **Lagged Accruals$_{it}$** is total accruals in year $t-1$ scaled by total assets at the beginning of the year. **Lagged NOA$_{it}$** is the net operating asset at the beginning of year t, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **Total Asset Growth$_{it}$** is change of total asset during year t, scaled by the total asset at the beginning of year t. **Employment Growth$_{it}$** is change of employment during year t, scaled by the employment at the beginning of year t. **Firm Age$_{it}$** is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database. **Analyst Following$_{it}$** is 12-month average of the number of analysts who issued annual earnings forecasts in year t, as reported in IBES Summary.

for a subset of the sample that we use in our empirical tests. The median and mean lengths of CEO tenure when leaving office are about six and eight years, respectively. These values are smaller than those reported in Gibbons and Murphy (1992). For their sample period of 1970–1988, the median and mean lengths of CEO tenure when leaving office are about eight and ten years. Thus, the average number of years a CEO stays in office has reduced in recent times. As noted earlier, for our analyses, we consider as early years the first three years of service, which is half of our median value of the number of years a CEO stays in office.

Panel A of Table 1 presents the descriptive statistics of the variables in the discretionary accruals models and Panel B of Table 1 presents the descriptive statistics of the variables in the abnormal discretionary expenses models. About 37 percent of the firm-year observations correspond to the early years of CEOs' service and about 12–13 percent of firm-year observations in our sample correspond to the final year of CEOs' service. The descriptive statistics of the other variables are similar to those in prior studies.

5. Empirical results

5.1. Earnings overstatement in the early years of CEOs' service

Panels A and B of Table 2 report the regression results of the discretionary accruals model and the abnormal discretionary expenses model, respectively. The standard errors of these regressions as well as all the other regressions in the paper are clustered by firm. In Column (1) of Panel A, the coefficient on *Early Years$_{it}$* is positive and significant, 0.0037 (t-statistic=3.11), suggesting that discretionary accruals are significantly greater in the early years than in the later years of CEOs' service.[10] In Column (1) of Panel B, the coefficient on *Early Years$_{it}$* is negative and significant, -0.0095 (t-statistic=-2.73), suggesting that abnormal discretionary expenses are significantly smaller in the early years of CEOs' service than in the later years of CEOs' service. These findings are consistent with our hypothesis H1, and support the notion that CEOs have incentive to overstate earnings in the early years of their service, presumably to favorably influence the market's perception of their ability. Moreover, they also have incentive to avoid overstating earnings in the later years of their service, presumably to protect their reputation.

The above results are also economically significant. In the early years of CEOs' service, discretionary accruals increase return on assets (ROA) by 0.37 percent per year and abnormal discretionary expenses increase ROA by 0.95 percent per year. The mean ROA for our sample is 5.27 percent (Panel B of Table 1).[11] Thus, the total ROA overstatement of 1.32 ($=0.37+0.95$) percent per year constitutes about 25 percent of the mean ROA.[12]

Many of the control variables in the discretionary accruals model are also significant. In Panel A, the coefficient on *CEO Ownership$_{it}$* is significantly positive, consistent with the result in Cheng and Warfield (2005). They argue that higher stock ownership creates greater motivation for CEOs to overstate earnings, which may increase the stock price and hence the value of their stockholding. The coefficient on *LnMVEquity$_{it}$* is the negative, consistent with the argument that larger firms are subject to greater political costs and therefore report less aggressively (Watts and Zimmerman, 1986). *MarketBookRatio$_{it}$* is the significantly positive, consistent with the argument that firms with high growth prospects are more concerned about missing earnings benchmarks and are therefore more likely to inflate earnings (Frankel et al., 2002). *Leverage$_{it}$* is the significantly negative, consistent with the result in Becker et al. (1998). They argue that highly leveraged firms tend to be distressed companies undergoing contractual renegotiations, providing them incentive to reduce earnings. The coefficient on *Institutional Ownership$_{it}$* is significantly negative, consistent with the results in Ashbaugh et al. (2003), who argue that firms with greater institutional ownership are subject to greater monitoring and therefore report less aggressively. The coefficient on *Mergers&Acquisitons$_{it}$* is significantly negative, which is not consistent with the findings in Erickson and Wang

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[10] Pan et al. (2013) show that CEOs disinvest in early years and invest in later years. Their results suggest lower accruals in the early years of CEOs' service and higher accruals in the later years. We find that discretionary accruals are higher in the early years of CEOs service and are lower in the later years of CEOs service, consistent with our story that CEOs overstate reported earnings in their early years, but not in the later years of their service. We think that both Pan et al.'s results and our results can obtain at the same time if our accruals model to estimate discretionary accruals (Eq. (1) of our paper) and our control variables, *Total Asset Growth* and *Employment Growth*, in our discretionary accruals models (Eq. (3) of our paper) are effective in controlling for the effect of disinvestments and investments on accruals.

[11] In Panel A of Table 1, the mean ROA is 3.45 percent, and the total ROA overstatement of 1.32 percent amounts to 38 percent of the mean ROA. We present the more conservative estimate of overstatement in the text and follow this approach in the rest of the paper.

[12] The ROA overstatement of 1.32 percent per year for the first three years of CEOs' service compares favorably in magnitude to the earnings manipulation reported in other contexts in the literature. For example, Cohen and Zarowin (2010) report that ROA overstatement by firms, through discretionary accruals and abnormal discretionary expenses, is 1.83 percent in the seasoned equity offering year.

(1999). They argue that acquiring firms manage earnings upwards prior to stock for stock mergers in order to get a favorable deal. The coefficient on ROA_{it} is significantly positive, consistent with the result in Kothari et al. (2005). They argue that there is spurious indication of discretionary accruals being high in firms with unusual performance. The coefficient on $Loss_{it}$ is significantly negative and the coefficient on CFO_{it} is significantly negative, consistent with the result in Ashbaugh et al. (2003). They argue that discretionary accruals models do not completely extract out nondiscretionary accruals that are negatively correlated with cash flows from operations. The coefficient on $Lagged\ NOA_{it}$ is significantly negative, consistent with the findings of Barton and Simko (2002), who argue that this variable measures constraints faced by firms for managing earnings. Finally, the coefficient on $Total\ Asset\ Growth_{it}$ is significantly positive, consistent with the results in Zhang (2007). He argues that accruals measure investment in working capital accruals, which is an integral part of the firm's overall business growth. The coefficient on $Employment\ Growth_{it}$ is significantly negative. This result does not appear to be consistent with Zhang (2007), who reports a positive coefficient. He considers the association of accruals with different measures of business growth one at a time. On dropping $Total\ Asset\ Growth_{it}$ from our model, the coefficient on $Employment\ Growth_{it}$ becomes positive and significant.

Many of the control variables in the abnormal discretionary expenses model are also significant. The coefficient on $CEO\ Age_{it}$ is significantly negative, consistent with the argument that as CEOs get closer to retirement, their incentive to invest in R&D reduces, because its favorable effect on reported earnings is likely to show up only after they retire (Cheng, 2004). The coefficient on $LnMVEquity_{it}$ is negative, consistent with the argument that smaller firms tend to spend proportionately more on R&D and advertising (Mansfield, 1981). The coefficient on $MarketBookRatio_{it}$ is significantly positive, consistent with the notion that growth firms tend to spend more on R&D and marketing (Roychowdhury, 2006). The coefficient on $Leverage_{it}$ is significantly negative, suggesting that firms in financial distress tend to invest less in R&D and other discretionary expenses (Kini and Williams, 2012). The coefficient on ROA_{it} is significantly negative, reflecting GAAP's requirement to expense R&D, advertising, and SG&A expenditures in the current period (Roychowdhury, 2006). The coefficient on $Analyst\ Following_{it}$ is significantly positive, suggesting that monitoring by analysts mitigates opportunistic activities of managers (Kimbrough, 2007). Finally, the coefficient on $Total\ Asset\ Growth_{it}$ is significantly positive, suggesting that investment in R&D, advertising, and SG&A also increases with firm's overall business growth.

To provide justification for using the first three years of service as the cutoff for defining $Early\ Years_{it}$, we estimate Eqs. (3) and (4) after replacing $Early\ Years_{it}$ with indicator variables for each of the first five years of CEOs' service, namely, $Year\ One_{it}$, $Year\ Two_{it}$, $Year\ Three_{it}$, $Year\ Four_{it}$, and $Year\ Five_{it}$. $Year\ One_{it}$ takes the value of one if the observation is for the first year of CEOs' service, and zero otherwise, and so on. Column (2) of Panel A of Table 2 presents the regression results for the discretionary accruals model. The coefficients on $Year\ One_{it}$ is 0.0018 (t-statistic=1.17), $Year\ Two_{it}$ is 0.0044 (t-statistic=2.69), $Year\ Three_{it}$ is 0.0037 (t-statistic=2.21), $Year\ Four_{it}$ is 0.0008 (t-statistic=0.49), and $Year\ Five_{it}$ is 0.0004 (t-statistic=0.23). These results suggest that only in the second year and third year of CEOs' service, earnings overstatement is statistically significant. The insignificant coefficient for the first year of CEOs' service could be due to the offsetting effect of "big bath" in the year of non-routine CEO change.

Column (2) of Panel B of Table 2 presents the regression results of the abnormal discretionary expenses model. The coefficients on $Year\ One_{it}$, $Year\ Two_{it}$, and $Year\ Three_{it}$ are negative and significant, and they are of similar magnitude. The coefficients on $Year\ Four_{it}$ and $Year\ Five_{it}$ are insignificant. These results further justify using first three years of CEOs' service as the cutoff for defining $Early\ Years_{it}$. An interesting difference with the Panel A results is that the coefficient on $Year\ One_{it}$ is significant in Panel B, whereas it is insignificant in Panel A. The likely reason is that "big bath" associated with non-routine CEO changes is achieved primarily through discretionary accruals (Pourciau, 1993).

5.2. The effect of monitoring

To examine if earnings overstatement between the early years and the later years of CEOs' service is smaller in firms characterized by greater monitoring of CEOs (hypothesis H2), we estimate the discretionary accruals and the abnormal discretionary expenses models after including the interactions of $Early\ Years_{it}$ with the following four proxies for monitoring intensity: $Institutional\ Ownership_{it}$, $Analyst\ Following_{it}$, $Board\ Independence_{it}$, and $Audit\ Committee\ Independence_{it}$. $Institutional\ Ownership_{it}$ is the percentage of stocks held by institutional investors at the beginning of year t. $Analyst\ Following_{it}$ is the 12-month average of the number of analysts who issued annual earnings forecasts in year t, as reported in IBES. $Board\ Independence_{it}$ is an indicator variable that equals one if more than 51 percent of board directors are outsiders at the beginning of the year, and zero otherwise. $Audit\ Committee\ Independence_{it}$ is an indicator variable that equals one if more than 51 percent of audit committee members are outsiders at the beginning of the year, and zero otherwise. Each of these variables is also included in the corresponding model as a separate variable to control for the associated main effect.

Panel A of Table 3 reports the results of the four discretionary accruals models.[13] The coefficients on $Early\ Years_{it}$ are positive and significant and the coefficients on the interaction terms are negative and significant, as expected, in all the four models. Panel B of Table 3 reports the results of the abnormal discretionary expenses models. The coefficients on $Early\ Years_{it}$ are negative and significant and the coefficients on the interaction terms are positive and significant, as expected,

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[13] The sample size for estimating the models in Columns (3) and (4) of Panels A and B are significantly smaller than that of the models in Columns (1) and (2), primarily because of missing data on board independence and audit committee independence.

Table 3
Effect of monitoring on earnings management in the early years of CEOs' service.

Panel A: Dependent variable=*Discretionary Accruals$_{it}$*

	(1)		(2)		(3)		(4)	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.0540***	7.79	0.0545***	7.80	0.0587***	5.79	0.0506***	4.80
Early Years$_{it}$	0.0083***	3.60	0.0059***	3.48	0.0097***	2.74	0.0171***	2.47
Early Years × Institutional Ownership$_{it}$	−0.0078**	−2.22						
Institutional Ownership$_{it}$	−0.0020	−0.73						
Early Years × Analyst Following$_{it}$			−0.0003**	−2.05				
Analyst Following$_{it}$			0.0000	0.26				
Early Years × Board Independence$_{it}$					−0.0082**	−2.13		
Board Independence$_{it}$					−0.0054**	−2.10		
Early Years × Audit Committee Independence$_{it}$							−0.0149**	−2.09
Audit Committee Independence$_{it}$							0.0051	1.36
CEO Ownership$_{it}$	0.0361**	2.40	0.0409***	2.59	0.0389*	1.68	0.0509**	2.25
CEO Age$_{it}$	0.0002**	2.31	0.0002**	2.10	0.0002	1.33	0.0002	1.40
LnMVEquity$_{it}$	−0.0023***	−4.00	−0.0023***	−3.59	−0.0021***	−2.75	−0.0023***	−2.97
MarketBookRatio$_{it}$	0.0014***	3.46	0.0015***	3.77	0.0012**	2.30	0.0013**	2.41
Litigation Risk$_{it}$	−0.0007	−0.39	−0.0003	−0.17	−0.0022	−0.40	−0.0022	−0.40
Leverage$_{it}$	−0.0132***	−2.90	−0.0142***	−3.11	−0.0011	−0.33	−0.0025	−0.76
Merger&Acquisition$_{it}$	−0.0064***	−3.76	−0.0069***	−4.02	−0.0040*	−1.83	−0.0036*	−1.64
Issuer$_{it}$	0.0006	0.54	0.0005	0.45	0.0012	0.76	0.0012	0.75
ROA$_{it}$	0.1350***	4.90	0.1374***	4.89	0.1509***	3.61	0.1514***	3.62
Loss$_{it}$	−0.0380***	−9.69	−0.0380***	−9.52	−0.0331***	−6.23	−0.0333***	−6.26
CFO$_{it}$	−0.4471***	−16.34	−0.4582***	−17.64	−0.4664***	−10.34	−0.4661***	−10.33
Lagged Accruals$_{it}$	0.0039	0.54	0.0020	0.27	0.0016	0.25	0.0020	0.31
Lagged NOA$_{it}$	−0.0011***	−2.86	−0.0011***	−2.86	−0.0016***	−4.36	−0.0017***	−4.37
Total Asset Growth$_{it}$	0.0379***	9.49	0.0395***	9.79	0.0234***	4.77	0.0235***	4.79
Employment Growth$_{it}$	−0.0118***	−2.95	−0.0123***	−3.03	−0.0050	−0.92	−0.0045	−0.84
Adj. R^2	0.2940		0.2960		0.2665		0.2647	
Number of Observations	20,206		20,206		10,119		10,119	

Panel B: Dependent variable=*Abnormal Discretionary Expenses$_{it}$*

	(1)		(2)		(3)		(4)	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.1172***	4.47	0.1188***	4.69	0.0601**	2.05	0.1047***	3.32
Early Years$_{it}$	−0.0251***	−3.20	−0.0194***	−3.83	−0.0267***	−2.93	−0.0370**	−2.07
Early Years × Institutional Ownership$_{it}$	0.0226**	2.05						
Institutional Ownership$_{it}$	−0.0144	−1.22						
Early Years × Analyst Following$_{it}$			0.0008**	2.01				
Analyst Following$_{it}$			0.0009**	1.98				
Early Years × Board Independence$_{it}$					0.0197**	2.03		
Board Independence$_{it}$					0.0138*	1.75		
Early Years × Audit Committee Independence$_{it}$							0.0287	1.60
Audit Committee Independence$_{it}$							−0.0139	−1.12
CEO Ownership$_{it}$	0.0126	0.20	0.0259	0.40	0.1214	1.61	0.0659	0.88
CEO Age$_{it}$	−0.0011***	−2.84	−0.0011***	−2.84	−0.0007*	−1.70	−0.0010**	−2.22
LnMVEquity$_{it}$	−0.0111***	−5.00	−0.0136***	−5.48	−0.0098***	−3.83	−0.0105***	−4.10
MarketBookRatio$_{it}$	0.0122***	8.68	0.0118***	8.41	0.0099***	6.51	0.0098***	7.07
Leverage$_{it}$	−0.1087***	−7.14	−0.1016***	−6.70	−0.0850***	−4.86	−0.0868***	−5.06
ROA$_{it}$	−0.1373***	−4.61	−0.1370***	−4.58	−0.1041***	−3.19	−0.1045***	−3.08
Firm Age$_{it}$	0.0000	−0.08	0.0000	−0.02	0.0000	0.18	0.0001	0.36
Total Asset Growth$_{it}$	0.0620***	8.57	0.0589***	8.25	0.0475***	5.88	0.0517***	6.38
Employment Growth$_{it}$	0.0047	0.54	0.0044	0.51	0.0152	1.53	0.0171*	1.69
Adj. R^2	0.0660		0.0632		0.0449		0.0429	
Number of Observations	24,161		24,161		14,992		14,992	

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **Discretionary Accruals$_{it}$** is discretionary accruals of firm *i* and year *t*, estimated as the residual of the accruals model (Eq. (1)). **Abnormal Discretionary Expenses$_{it}$** is abnormal discretionary expenses of firm *i* and year *t*, estimated as the residual of the discretionary expenses model (Eq. (2)). **Early Years$_{it}$** is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. **Institutional Ownership$_{it}$** is the percentage of stocks held by institutional investors at the beginning of year *t*. **Analyst Following$_{it}$** is 12-month average of the number of analysts who issued annual earnings forecasts in year *t*, as reported in IBES Summary. **Board Independence$_{it}$** is an indicator variable that equals one if more than 51 percent of board directors are from outside at the beginning of the year, and zero otherwise. **Audit Committee Independence$_{it}$** is an indicator variable that equals one if more than 51 percent of

audit committee members are from outside at the beginning of the year, and zero otherwise. **CEO Ownership**$_{it}$ is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **CEO Age**$_{it}$ is the CEO's age at the beginning of year t. **LnMVEquity**$_{it}$ is the log of market value of equity at the beginning of year t. **MarketBookRatio**$_{it}$ is defined as the market value of equity divided by the book value of equity at the beginning of year t. **Litigation Risk**$_{it}$ is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **Leverage**$_{it}$ is defined as total debt divided by total assets at the beginning of year t. **Merger&Acquisition**$_{it}$ is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. **Issuer**$_{it}$ is an indicator variable that equals one if *Merger&Acquisition*$_{it}$ is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. **ROA**$_{it}$ is earnings before extraordinary items in year t divided by total assets at the beginning of the year t. **Loss**$_{it}$ is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. **CFO**$_{it}$ is cash flow from operations in year t scaled by the total assets at the beginning of year t. **Lagged Accruals**$_{it}$ is total accruals in year $t-1$ scaled by total assets at the beginning of the year. **Lagged NOA**$_{it}$ is the net operating asset at the beginning of year t, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **Total Asset Growth**$_{it}$ is change of total asset during year t, scaled by the total asset at the beginning of year t. **Employment Growth**$_{it}$ is change of employment during year t, scaled by the employment at the beginning of year t. **Firm Age**$_{it}$ is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database.

with the exception of the coefficient on *Early Years*$_{it}$*Audit Committee Independence*$_{it}$, which has the expected positive sign, but is only marginally significant (t-statistic$=1.60$). The weaker significance of this result may in part be due to limited role audit committees may play in influencing the discretionary expenditures of firms. Overall, these results suggest that CEO tenure related earnings management is less pronounced for firms with greater monitoring.

5.3. Earnings overstatement in the final year of CEOs' service

To illustrate the importance of controlling for earning overstatement in the early years of CEOs' service when testing for earnings management in CEOs' final year of service, we use the following two models of discretionary accruals. The first model is the same as Eq. (3), except that we replace the variable *Early Years*$_{it}$ with the variable *Final Year*$_{it}$. *Final Year*$_{it}$ is an indicator variable that equals one for the year prior to the CEO turnover year, and is zero otherwise (see Fig. 1). It is the last year for which the departing CEO is able to use accounting discretion to manage annual earnings. In the management change year, the new CEO is in charge when the financial statement for that year is prepared. This definition of the final year of service is consistent with the definition used in related prior studies (e.g., Dechow and Sloan, 1991; Kalyta, 2009). The horizon problem of departing CEOs predicts that the coefficient on *Final Year*$_{it}$ is positive. The second model we use is the same as the first model, except that *Early Years*$_{it}$ is included as an additional explanatory variable. This model is better specified to test the horizon problem, because it controls for earnings overstatement in the early years of CEOs' service. We also estimate models of abnormal discretionary expenses that are equivalent to these discretionary accruals models.

Column (1) of Panel A of Table 4 reports the regression results of the discretionary accruals model that does not include *Early Years*$_{it}$ as a control variable. The coefficient on *Final Year*$_{it}$ is insignificant, 0.0015 (t-statistic$=1.14$), consistent with the results of some of the prior studies on this issue. Column (2) reports the regression results of an equivalent model, after including *Early Years*$_{it}$ as an additional explanatory variable. The coefficient on *Final Year*$_{it}$ becomes significantly positive, 0.0032 (t-statistic$=2.16$), consistent with the prediction that earnings overstatement is greater in the final year of CEOs' service. Column (1) of Panel B of Table 4 reports results of an abnormal discretionary expenses model that does not include *Early Years*$_{it}$ as a control variable. The coefficient on *Final Year*$_{it}$ is insignificant, -0.0039 (t-statistic$=-1.16$). Once again on including *Early Years*$_{it}$ as an additional explanatory variable, the coefficient on *Final Year*$_{it}$ becomes significantly negative, -0.0081 (t-statistic$=-1.99$), consistent with the prediction that earnings overstatement is greater in the final year of CEOs' service.[14]

Overall, the results in Table 4 suggest that a lack of control for earnings overstatement in the early years of CEOs' service can provide misleading conclusions when testing for earnings overstatement in the final year of CEOs' service. The importance of this issue is underscored by the fact that a non-trivial number (about 30 percent) of CEOs leave office within the first four years of starting their jobs (see Fig. 2). For these CEOs, the difference in earnings overstatement between the final year of their service and the other years is likely to be small, because of their incentive to overstate earnings in their early years as well. These cases biases the coefficient on *Final Year*$_{it}$ against the predicted direction.

Table 4 also provides comparison of the magnitude of earnings management between the early years and the final year of CEOs' service. Column (2) of Panel A of Table 4 reports that the discretionary accruals are higher in the early years of CEOs' service by 0.0043 and in the final year by 0.0032. Similarly, Column (2) of Panel B of Table 4 reports that abnormal discretionary expenses are lower in the early years by 0.0109 and in the final year by 0.0081. *F*-test suggests that the magnitude of the coefficients on "*Early Years*$_{it}$" and "*Final Year*$_{it}$" are not significantly different in both the discretionary accruals and the abnormal discretionary expenses models.[15] This evidence further underscores the importance of

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[14] We also estimate the Column (2) models in Panels A and B of Table 4 after adding an indicator variable *Final Year*$_{it-1}$, which equals one for the year *preceding* the final year of a CEO's service, and is zero otherwise. We find that the coefficients on *Final Year*$_{it-1}$ are insignificant and the coefficients on *Final Year*$_{it}$ remain significant with the expected signs. These results add confidence to our conclusion that the earnings overstatement observed in the final year of CEOs' service is due to managerial incentives related to their last year in office and is not due to some other factors related to the final few years of CEOs' service.

[15] The coefficients on the variables, *Early Years*$_{it}$ and *Final Year*$_{it}$, are also not significantly different in any of our other models in the paper that include both these variables.

Table 4
Early years and final year of CEOs' service and earnings management.

Panel A: Dependent variable=$Discretionary\ Accruals_{it}$

	(1)		(2)	
	Coefficient	t-Statistic	Coefficient	t-Statistic
$Intercept$	0.0637***	9.34	0.0581***	8.25
$Early\ Years_{it}$			0.0043***	3.33
$Final\ Year_{it}$	0.0015	1.14	0.0032**	2.16
$CEO\ Ownership_{it}$	0.0357**	2.26	0.0386**	2.44
$CEO\ Age_{it}$	0.0002	1.53	0.0002**	2.03
$LnMVEquity_{it}$	−0.0024***	−4.18	−0.0023***	−4.05
$MarketBookRatio_{it}$	0.0015***	3.79	0.0015***	3.71
$Litigation\ Risk_{it}$	−0.0005	−0.25	−0.0004	−0.21
$Leverage_{it}$	−0.0148***	−3.25	−0.0146***	−3.20
$Institutional\ Ownership_{it}$	−0.0055**	−2.39	−0.0053**	−2.33
$Merger\&Acquisition_{it}$	−0.0066***	−3.84	−0.0066***	−3.82
$Issuer_{it}$	0.0005	0.44	0.0006	0.49
ROA_{it}	0.1374***	4.87	0.1375***	4.89
$Loss_{it}$	−0.0384***	−9.60	−0.0383***	−9.60
CFO_{it}	−0.4566***	−17.66	−0.4565***	−17.72
$Lagged\ Accruals_{it}$	0.0026	0.35	0.0025	0.34
$Lagged\ NOA_{it}$	−0.0011***	−2.86	−0.0011***	−2.85
$Total\ Asset\ Growth_{it}$	0.0393***	9.74	0.0391***	9.72
$Employment\ Growth_{it}$	−0.0126***	−3.10	−0.0124***	−3.07
p-value ($Early\ Years_{it}=Final\ Year_{it}$)				0.485
Adj. R^2		0.2955		0.2961
Number of observations		20,206		20,206

Panel B: Dependent variable=$Abnormal\ Discretionary\ Expenses_{it}$

	(1)		(2)	
	Coefficient	t-Statistic	Coefficient	t-Statistic
$Intercept$	0.1125***	4.66	0.1255***	4.91
$Early\ Years_{it}$			−0.0109***	−2.81
$Final\ Year_{it}$	−0.0039	−1.16	−0.0081**	−1.99
$CEO\ Ownership_{it}$	0.0311	0.49	0.0224	0.35
$CEO\ Age_{it}$	−0.0009***	−2.54	−0.0011***	−2.81
$LnMVEquity_{it}$	−0.0148***	−5.90	−0.0149***	−5.93
$MarketBookRatio_{it}$	0.0125***	8.86	0.0126***	8.90
$Leverage_{it}$	−0.1060***	−6.90	−0.1062***	−6.92
ROA_{it}	−0.1454***	−4.82	−0.1446***	−4.81
$Firm\ Age_{it}$	0.0000	0.20	0.0000	0.16
$Analyst\ Following_{it}$	0.0011***	2.65	0.0011***	2.55
$Total\ Asset\ Growth_{it}$	0.0653***	8.94	0.0656***	8.98
$Employment\ Growth_{it}$	0.0047	0.54	0.0044	0.50
p-value ($Early\ Years_{it}=Final\ Year_{it}$)				0.471
Adj. R^2		0.0694		0.0701
Number of observations		24,161		24,161

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **$Discretionary\ Accruals_{it}$** is discretionary accruals of firm i and year t, estimated as the residual of the accruals model (Eq. (1)). **$Abnormal\ Discretionary\ Expenses_{it}$** is abnormal discretionary expenses of firm i and year t, estimated as the residual of the discretionary expenses model (Eq. (2)). **$Early\ Years_{it}$** is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. **$Final\ Year_{it}$** is an indicator variable that equals one for the year prior to the turnover year of the firm's CEO, and is zero otherwise. **$CEO\ Ownership_{it}$** is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **$CEO\ Age_{it}$** is the CEO's age at the beginning of year t. **$LnMVEquity_{it}$** is the log of market value of equity at the beginning of year t. **$MarketBookRatio_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year t. **$Litigation\ Risk_{it}$** is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **$Leverage_{it}$** is defined as total debt divided by total assets at the beginning of year t. **$Institutional\ Ownership_{it}$** is the percentage of stocks held by institutional investors at the beginning of year t. **$Merger\&Acquisition_{it}$** is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. **$Issuer_{it}$** is an indicator variable that equals one if $Merger\&Acquisition_{it}$ is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. **ROA_{it}** is earnings before extraordinary items in year t divided by total assets at the beginning of the year t. **$Loss_{it}$** is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. **CFO_{it}** is cash flow from operations in year t scaled by the total assets at the beginning of year t. **$Lagged\ Accruals_{it}$** is total accruals in year $t-1$ scaled by total assets at the beginning of the year. **$Lagged\ NOA_{it}$** is the net operating asset at the beginning of year t, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **$Total\ Asset\ Growth_{it}$** is change of total asset during year t, scaled by the total asset at the beginning of year t. **$Employment\ Growth_{it}$** is change of employment during year t, scaled by the employment at the beginning of year t. **$Firm\ Age_{it}$** is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database. **$Analyst\ Following_{it}$** is 12-month average of the number of analysts who issued annual earnings forecasts in year t, as reported in IBES Summary.

controlling earnings overstatement in the early years of CEOs' service when examining earnings management in the final year of their service.

6. Sensitivity analyses

6.1. CEOs with long stay in office

To examine whether CEOs of high ability also overstate earnings in their early years of service, we repeat our analysis with a sample of firm-years that correspond to CEOs which stay in office for relatively long periods. CEOs who stays in office longer are likely to be more talented (Milbourn, 2003). We use six years of service as the cutoff for this sample, because only half of the CEOs stay in office longer (see Fig. 2). This criterion reduces the sample for estimating the discretionary accruals models from 20,206 to 11,722 firm-years and for estimating the abnormal discretionary expenses models from 24,161 to 15,287. We also use the cutoff of nine years, which is the third quartile of the distribution of CEOs' length in office (see Fig. 2), and the samples to estimate the two models reduce further to 6,454 and 8,813 firm-years, respectively.

Panel A of Table 5 reports the regression estimates of the discretionary accruals models for the restricted samples. In Columns (1) and (3), the coefficients on $Early\ Years_{it}$ are 0.0050 (t-statistic=2.68) and 0.0060 (t-statistic=2.10) for the 6 years and the 9 years samples, respectively. Panel B of Table 5 reports equivalent results for the abnormal discretionary expenses models. The coefficients on $Early\ Years_{it}$ are -0.0179 (t-statistic$=-3.72$) and -0.0161 (t-statistic$=-2.24$) for the 6 years and the 9 years samples, respectively. These coefficients have the expected signs, and their magnitudes are as large as that for the full sample (see Table 2). Columns (2) and (4) of Panels A and B also report results for the models with $Final\ Years_{it}$ as an additional explanatory variable. The coefficients on this variable are also significant with expected signs, and the magnitudes are as large as that for the full sample (see Table 4).

Overall, the above results suggest that even CEOs with long stay in office, who are likely to possess high ability, tend to overstate earnings in their early years in office. Thus, our full sample results that earnings are overstated in the early years of CEOs service are unlikely to be driven solely by the alternative explanation that only low ability CEOs overstate earnings and then get fired during their early years in office.

6.2. Reversal of discretionary accruals

To further validate that the observed higher discretionary accruals in the early years of CEOs' service represent earnings overstatement, we examine whether these accruals reverse (Dechow et al., 2012; Allen et al., 2012). We use a subsample corresponding to CEOs who stay in office for at least nine years. Given that discretionary accruals to manage earnings can take multiple years to reverse (Gerakos, 2012; Allen et al., 2012), this subsample should provide for a long enough CEO tenure for observing if and when discretionary accruals reverse after early years of CEOs' service.

Table 6 reports the results of the test of the reversal of discretionary accruals. The coefficients on the indicator variables for the second year and third year of CEOs' service are positive and significant. This result is consistent with our prediction that CEOs have incentive to overstate earnings in the early years of their service. The coefficients on the indicator variables for the fifth year to the eight year of CEOs' service are negative and significant. This result is consistent with the subsequent reversal of discretionary accruals that were presumably used for overstating earnings in the early years of CEOs' service. Note, however, that the coefficient for the indicator variable for the final year of CEOs' service is positive and significant, consistent with CEOs incentive to overstate earnings in their final year of service. Fig. 3 plots the regression coefficient of the indicator variables for CEOs' service years, illustrating how discretionary accruals change during CEO tenure.

6.3. R&D expense

Prior studies on the horizon problem of departing CEOs have considered only R&D expense as the tool for earnings management (Dechow and Sloan, 1991; Murphy and Zimmerman, 1993; Cheng, 2004). For better comparability with these prior studies, we repeat our analyses after replacing the variable abnormal discretionary expenses related to R&D, advertising, and SG&A, with raw R&D expense. We also repeat our analyses with abnormal R&D expense, which is estimated using a model similar to Eq. (2). Table 7 reports that when $Early\ Years_{it}$ is not included as an explanatory variable, the coefficients on $Final\ Years_{it}$ are insignificant in both R&D expense and abnormal R&D expense models. This finding is consistent with those of Murphy and Zimmerman (1993) and Cheng (2004). However, after including $Early\ Years_{it}$ as an additional explanatory variable in these models, the coefficients on $Final\ Years_{it}$ become negative and significant, consistent with the departing CEOs' incentive to overstate earnings. Moreover, as expected, the coefficients on $Early\ Years_{it}$ are negative and significant.

6.4. Write-offs

Firms use write-offs as earnings management tool in the first year of a non-routine CEO change (Strong and Meyer, 1987; Elliott and Shaw, 1988; Pourciau, 1993), which constitute a non-trivial proportion of total executive

Table 5
Early years and final year of CEOs' service and earnings management, for samples consisting of CEOs with long stay in office.

Panel A: Dependent Variable=$Discretionary Accruals_{it}$

	CEOs with at least 6 years in office				CEOs with at least 9 years in office			
	(1)		(2)		(3)		(4)	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.0453***	4.67	0.0464***	4.73	0.0382***	2.94	0.0398***	3.00
Early Years$_{it}$	0.0050***	2.68	0.0053***	2.85	0.0060**	2.10	0.0061***	2.16
Final Year$_{it}$			0.0051**	2.21			0.0069**	2.11
CEO Ownership$_{it}$	0.0096	0.56	0.0106	0.62	0.0127	0.53	0.0139	0.57
CEO Age$_{it}$	0.0004***	2.69	0.0004***	2.49	0.0005**	2.40	0.0005**	2.21
LnMVEquity$_{it}$	−0.0027***	−3.62	−0.0027***	−3.63	−0.0026***	−2.77	−0.0026***	−2.80
MarketBookRatio$_{it}$	0.0001	0.11	0.0000	0.10	−0.0008	−1.23	−0.0008	−1.22
Litigation Risk$_{it}$	0.0015	0.62	0.0015	0.59	−0.0014	−0.42	−0.0015	−0.44
Leverage$_{it}$	0.0023	0.39	0.0022	0.37	0.0074	0.91	0.0074	0.91
Institutional Ownership$_{it}$	−0.0109***	−3.46	−0.0110***	−3.46	−0.0115***	−2.63	−0.0116***	−2.65
Merger&Acquisition$_{it}$	−0.0044**	−2.04	−0.0044**	−2.02	−0.0004	−0.13	−0.0003	−0.13
Issuer$_{it}$	0.0016	1.15	0.0017	1.21	0.0044**	2.29	0.0045**	2.33
ROA$_{it}$	0.4352***	10.57	0.4352***	10.57	0.4518***	7.15	0.4514***	7.15
Loss$_{it}$	−0.0131***	−2.65	−0.0132***	−2.67	−0.0146*	−1.86	−0.0148*	−1.88
CFO$_{it}$	−0.5788***	−17.37	−0.5786***	−17.38	−0.5621***	−9.67	−0.5616***	−9.68
Lagged Accruals$_{it}$	−0.0035	−0.31	−0.0035	−0.31	0.0002	0.01	0.0000	0.00
Lagged NOA$_{it}$	−0.0009***	−3.06	−0.0009***	−3.08	−0.0012***	−2.88	−0.0012***	−2.88
Total Asset Growth$_{it}$	0.0214***	4.16	0.0214***	4.15	0.0032	0.53	0.0032	0.53
Employment Growth$_{it}$	−0.0103*	−1.93	−0.0101*	−1.90	0.0057	0.93	0.0059	0.96
p-value (Early Years$_{it}$=Final Year$_{it}$)			0.927				0.855	
Adj. R^2	0.3757		0.3760		0.3827		0.3830	
Number of Observations	11,722		11,722		6,454		6,454	

Panel B: Dependent Variable=$Abnormal Discretionary Expenses_{it}$

	CEOs with at least 6 years in office				CEOs with at least 9 years in office			
	(1)		(2)		(3)		(4)	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.1144***	3.32	0.1128***	3.26	0.0739*	1.69	0.0711***	1.61
Early Years$_{it}$	−0.0179***	−3.72	−0.0186***	−3.80	−0.0161**	−2.24	−0.0165**	−2.30
Final Year$_{it}$			−0.0098**	−2.11			−0.0140**	−2.06
CEO Ownership$_{it}$	0.0838	1.04	0.0825	1.02	0.0531	0.54	0.0511	0.52
CEO Age$_{it}$	−0.0011**	−1.99	−0.0011*	−1.90	−0.0007	−0.96	−0.0007	−0.87
LnMVEquity$_{it}$	−0.0142***	−4.68	−0.0141***	−4.67	−0.0102***	−2.53	−0.0102***	−2.51
MarketBookRatio$_{it}$	0.0111***	6.30	0.0111***	6.31	0.0083***	3.95	0.0083***	3.95
Leverage$_{it}$	−0.0856***	−4.38	−0.0857***	−4.38	−0.0857***	−3.34	−0.0860***	−3.35
ROA$_{it}$	−0.1108***	−2.86	−0.1121***	−2.89	−0.0414	−0.80	−0.0428	−0.83
Firm Age$_{it}$	0.0000	−0.12	0.0000	−0.12	−0.0002	−0.72	−0.0002	−0.71
Analyst Following$_{it}$	0.0012**	2.28	0.0012**	2.28	0.0012*	1.67	0.0012*	1.66
Total Asset Growth$_{it}$	0.0657***	7.16	0.0656***	7.17	0.0479***	4.79	0.0479***	4.79
Employment Growth$_{it}$	0.0009	0.00	−0.0002	−0.02	0.0020	0.16	0.0016	0.14
p-value (Early Years$_{it}$=Final Year$_{it}$)			0.167				0.799	
Adj. R^2	0.060		0.060		0.045		0.045	
Number of Observations	15,287		15,287		8,813		8,813	

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **Discretionary Accruals$_{it}$** is discretionary accruals of firm i and year t, estimated as the residual of the accruals model (Eq. (1)). **Abnormal Discretionary Expenses$_{it}$** is abnormal discretionary expenses of firm i and year t, estimated as the residual of the discretionary expenses model (Eq. (2)). **Early Years$_{it}$** is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. **Final Year$_{it}$** is an indicator variable that equals one for the year prior to the turnover year of the firm's CEO, and is zero otherwise. **CEO Ownership$_{it}$** is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **CEO Age$_{it}$** is the CEO's age at the beginning of year t. **LnMVEquity$_{it}$** is the log of market value of equity at the beginning of year t. **MarketBookRatio$_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year t. **Litigation Risk$_{it}$** is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **Leverage$_{it}$** is defined as total debt divided by total assets at the beginning of year t. **Institutional Ownership$_{it}$** is the percentage of stocks held by institutional investors at the beginning of year t. **Merger&Acquisition$_{it}$** is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. **Issuer$_{it}$** is an indicator variable that equals one if $Merger\&Acquisition_{it}$ is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. **ROA$_{it}$** is earnings before extraordinary items in year t divided by total assets at the beginning of year t. **Loss$_{it}$** is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. **CFO$_{it}$** is cash flow from operations in year t scaled by the total assets at the beginning of year t. **Lagged Accruals$_{it}$** is total accruals in year $t-1$ scaled by total assets at the beginning of the year. **Lagged NOA$_{it}$** is the net operating asset at the beginning of year t, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **Total Asset Growth$_{it}$** is change of total asset during year t, scaled by the total asset at the beginning of year t. **Employment Growth$_{it}$** is change of employment during year t, scaled by the employment at the beginning of year t. **Firm Age$_{it}$** is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database. **Analyst Following$_{it}$** is 12-month average of the number of analysts who issued annual earnings forecasts in year t, as reported in IBES Summary.

Table 6
Reversal of discretionary accruals after early years of CEOs' service.

Dependent variable=*Discretionary Accruals$_{it}$*		
	Coefficient	*t*-Statistic
Intercept	0.0433***	2.97
Year One$_{it}$	0.0029	0.67
Year Two$_{it}$	0.0100**	2.34
Year Three$_{it}$	0.0086**	2.24
Year Four$_{it}$	−0.0018	−0.50
Year Five$_{it}$	−0.0071**	−1.96
Year Six$_{it}$	−0.0090***	−2.79
Year Seven$_{it}$	−0.0053*	−1.68
Year Eight$_{it}$	−0.0050*	−1.66
Final Year$_{it}$	0.0080***	2.58
CEO Ownership$_{it}$	0.0073	0.32
CEO Age$_{it}$	0.0004*	1.74
LnMVEquity$_{it}$	−0.0027***	−2.89
MarketBookRatio$_{it}$	−0.0009	−1.53
Litigation Risk$_{it}$	−0.0009	−0.28
Leverage$_{it}$	0.0113	1.56
Institutional Ownership$_{it}$	−0.0117***	−2.70
Merger&Acquisition$_{it}$	−0.0003	−0.12
Issuer$_{it}$	0.0038**	2.21
ROA$_{it}$	0.4964***	14.95
Loss$_{it}$	−0.0077*	−1.69
CFO$_{it}$	−0.5707***	−12.68
Lagged Accruals$_{it}$	−0.0118	−0.64
Lagged NOA$_{it}$	−0.0011***	−2.75
Total Asset Growth$_{it}$	0.0086	1.45
Employment Growth$_{it}$	0.0055	0.93
Adj. R^2	0.3806	
Number of Observations	6,454	

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **Discretionary Accruals$_{it}$** is discretionary accruals of firm *i* and year *t*, estimated as the residual of the accruals model (Eq. (1)). **Year One$_{it}$**, **Year Two$_{it}$**, **Year Three$_{it}$**, **Year Four$_{it}$**, **Year Five$_{it}$**, **Year Six$_{it}$**, **Year Seven$_{it}$**, **Year Eight$_{it}$** are indicator variables that equal one if the observation is for the first, second, third, fourth, fifth, sixth, seventh, and eighth year of CEOs' service, respectively, and are zero otherwise. **Final Year$_{it}$** is an indicator variable that equals one for the year prior to the turnover year of the firm's CEO, and is zero otherwise. **CEO Ownership$_{it}$** is the percentage of outstanding stocks of firm *i* that is owned by the CEO at the beginning of year *t*. **CEO Age$_{it}$** is the CEO's age at the beginning of year *t*. **LnMVEquity$_{it}$** is the log of market value of equity at the beginning of year *t*. **MarketBookRatio$_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year *t*. **Litigation Risk$_{it}$** is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **Leverage$_{it}$** is defined as total debt divided by total assets at the beginning of year *t*. **Institutional Ownership$_{it}$** is the percentage of stocks held by institutional investors at the beginning of year *t*. **Merger&Acquisition$_{it}$** is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year *t*, and zero otherwise. **Issuer$_{it}$** is an indicator variable that equals one if *Merger&Acquisition$_{it}$* is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year *t*, and is zero otherwise. **ROA$_{it}$** is earnings before extraordinary items in year *t* divided by total assets at the beginning of the year *t*. **Loss$_{it}$** is an indicator variable that equals one if the firm reports a net loss for year *t*, and zero otherwise. **CFO$_{it}$** is cash flow from operations in year *t* scaled by the total assets at the beginning of year *t*. **Lagged Accruals$_{it}$** is total accruals in year *t* − 1 scaled by total assets at the beginning of the year. **Lagged NOA$_{it}$** is the net operating asset at the beginning of year *t*, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **Total Asset Growth$_{it}$** is change of total asset during year *t*, scaled by the total asset at the beginning of year *t*. **Employment Growth$_{it}$** is change of employment during year *t*, scaled by the employment at the beginning of year.

changes.[16] New CEOs attribute the poor reported performance in that year to the previous CEOs and take credit for the resulting higher reported earnings in the following years. We examine whether there is a systematic pattern in the magnitude of write-offs in the other years of CEOs' service. Elliott and Shaw (1988), Elliott and Hanna (1996), and Francis et al. (1996) define write-offs as negative special items exceeding one percent of total assets. They argue that such large negative special items are primarily due to write-downs or write-offs of long-lived assets, and that management has substantial discretion on their amount and timing. For our analyses, we define the variable *Write-Offs* as follows: for a negative special item, when the ratio of its absolute value to total assets at the beginning of the period exceeds one percent, then the variable takes the value of the ratio, otherwise the variable equals zero.

Table 8 reports the regression results of Eq. (3) after replacing the dependent variable *Discretionary Accruals* with *Write-Offs*. The coefficient on *Year One$_{it}$* is positive and significant, 0.0018 (*t*-statistic=2.02), suggesting that write-offs are

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[16] Pourciau (1993) sample consists of 73 non-routine executive changes and 267 routine executive changes for the sample years 1985–1988; and Bushman et al. (2010) sample consists of 794 non-routine executive changes and 1,029 routine executive changes for the sample years 1992–2005.
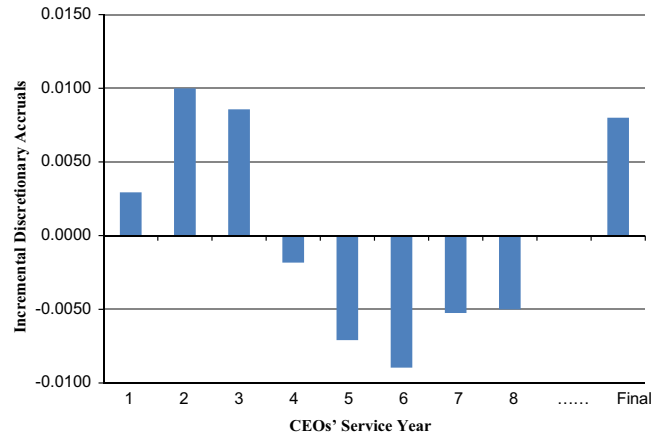
Fig. 3. CEO tenure and discretionary accruals.
Plot of the regression coefficients of the indicator variables for CEOs' service years, obtained from the discretionary accruals model in Table 6. The regression coefficients represent incremental value of discretionary accruals for each of the CEOs' service years, after controlling for the effect of other previously identified determinants of discretionary accruals.

Table 7
Early years and final year of CEOs' service and R&D expense.

Dependent variable	R&D expense				Abnormal R&D expense			
	(1)		(2)		(3)		(4)	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
$Intercept$	0.0924***	12.61	0.0967***	12.16	0.0308***	5.20	0.0341***	5.41
$Early\ Years_{it}$			−0.0035***	−2.72			−0.0028***	−2.82
$Final\ Year_{it}$	−0.0012	−1.08	−0.0032**	−2.40	−0.0014	−1.55	−0.0025**	−2.29
$CEO\ Ownership_{it}$	−0.0741***	−4.54	−0.0765***	−4.67	−0.0203	−1.47	−0.0225	−1.63
$CEO\ Age_{it}$	−0.0004***	−3.62	−0.0004***	−3.84	−0.0003***	−3.12	−0.0003***	−3.37
$LnMVEquity_{it}$	−0.0053***	−7.10	−0.0053***	−7.14	−0.0031***	−4.95	−0.0031***	−4.98
$MarketBookRatio_{it}$	0.0077***	15.23	0.0076***	15.20	0.0030***	8.93	0.0030***	8.97
$Leverage_{it}$	−0.1020***	−20.17	−0.1015***	−20.14	−0.0368***	−8.84	−0.0369***	−8.85
ROA_{it}	−0.1823***	−10.21	−0.1766***	−10.01	−0.0893***	−8.22	−0.0891***	−8.22
$Firm\ Age_{it}$	−0.0001***	−2.61	−0.0001***	−2.71	−0.0001	−1.30	−0.0001	−1.34
$Analyst\ Following_{it}$	0.0008***	5.59	0.0008***	5.50	0.0005***	5.24	0.0005***	5.14
$Total\ Asset\ Growth_{it}$	0.0260***	8.64	0.0250***	8.95	0.0249***	9.68	0.0250***	9.71
$Employment\ Growth_{it}$	−0.0039	−1.33	−0.0040	−1.50	−0.0086***	−3.27	−0.0087***	−3.30
p-value ($Early\ Years_{it} = Final\ Year_{it}$)			0.784				0.766	
Adj. R^2	0.2361		0.2368		0.0851		0.0857	
Number of Observations	24,161		24,161		24,161		24,161	

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **R&D Expense$_{it}$** is R&D expense scaled by the total asset at the beginning of year, and is zero if R&D expense for the firm-year is missing on Compustat. **Abnormal R&D Expense$_{it}$** is abnormal discretionary R&D expense of firm i and year t, estimated as the residual of the R&D expense model similar to Eq. (2). **Early Years$_{it}$** is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. **Final Year$_{it}$** is an indicator variable that equals one for the year prior to the turnover year of the firm's CEO, and is zero otherwise. **CEO Ownership$_{it}$** is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **CEO Age$_{it}$** is the CEO's age at the beginning of year t. **LnMVEquity$_{it}$** is the log of market value of equity at the beginning of year t. **MarketBookRatio$_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year t. **Leverage$_{it}$** is defined as total debt divided by total assets at the beginning of year t. **ROA$_{it}$** is earnings before extraordinary items in year t divided by total assets at the beginning of the year t. **Firm Age$_{it}$** is the number of years since a firm's IPO, and is measured as the number of years it has been on CRSP database. **Analyst Following$_{it}$** is 12-month average of the number of analysts who issued annual earnings forecasts in year t, as reported in IBES Summary. **Total Asset Growth$_{it}$** is change of total asset during year t, scaled by the total asset at the beginning of year t. **Employment Growth$_{it}$** is change of employment during year t, scaled by the employment at the beginning of year t.

significantly higher in the first year of CEOs' service. This result is consistent with the new CEOs taking "big bath" in their first year of service. The coefficients on $Year\ Two_{it}$ and $Year\ Three_{it}$ are negative and significant, −0.0022 (t-statistic = −2.96) and −0.0022 (t-statistic = −2.94), respectively, suggesting that write-offs are significantly lower in the second year and third year of CEOs' service. This result is consistent with CEOs' incentive to report higher earnings in the early years of their service. Finally, the coefficient on $Final\ Year_{it}$ is negative and significant, −0.0017 (t-statistic = −2.25), consistent with CEOs' incentive to report higher earnings in the final year of their service.

Table 8
Early years and final year of CEOs' service and write-offs/special items.

Dependent variable	Write-offs		Special items	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.0043	1.44	−0.0036	−0.86
Year One$_{it}$	0.0018**	2.02	−0.0022**	−1.98
Year Two$_{it}$	−0.0022***	−2.96	0.0020**	2.01
Year Three$_{it}$	−0.0022***	−2.94	0.0027***	2.91
Year Four$_{it}$	0.0000	0.01	0.0002	0.18
Year Five$_{it}$	−0.0001	−0.05	0.0003	0.25
Final Year$_{it}$	−0.0017**	−2.25	0.0020**	2.21
CEO Ownership$_{it-1}$	−0.0099*	−1.72	0.0096	1.16
CEO Age$_{it}$	−0.0001	−1.41	0.0001	1.27
LnMVEquity$_{it}$	0.0006***	2.46	−0.0012***	−3.26
MarketBookRatio$_{it}$	0.0012***	5.63	−0.0014***	−4.11
Litigation Risk$_{it}$	0.0018**	2.12	0.0002	0.16
Leverage$_{it}$	−0.0082***	−3.75	0.0137***	2.81
Institutional Ownership$_{it-1}$	0.0014	1.51	−0.0048***	−3.15
Merger&Acquisition$_{it}$	0.0059***	6.74	−0.0058***	−5.16
Issuer$_{it}$	−0.0019***	−3.57	0.0011	1.60
ROA$_{it}$	−0.1505***	−8.28	0.3354***	3.65
Loss$_{it}$	0.0361***	14.69	−0.0163	−1.58
CFO$_{it}$	0.0705***	8.43	−0.1339***	−4.31
Lagged Accruals$_{it}$	0.0261***	3.76	−0.0621***	−2.77
Lagged NOA$_{it}$	−0.0005**	−2.32	0.0007**	2.28
Total Asset Growth$_{it}$	0.0052***	3.20	−0.0001	−0.05
Employment Growth$_{it}$	0.0021	1.02	−0.0103***	−3.41
Adj. R^2	0.3697		0.4471	
Number of observations	20,206		20,206	

The sample period is from 1992 to 2010. The models are estimated with pooled time series and cross sectional data, using the Huber–White procedure and clustering by firms. ***, ** and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. **Write-offs$_{it}$** is defined as follows: for a negative special item, when the ratio of its absolute value to total assets at the beginning of the year t exceeds one percent, then the variable takes the value of the ratio, otherwise the variable equals zero. **Special Items** is special items scaled by the total assets at the beginning of the year t. **Year One$_{it}$, Year Two$_{it}$, Year Three$_{it}$, Year Four$_{it}$, Year Five$_{it}$,** are indicator variables that equal one if the observation is for the first, second, third, fourth, fifth year of CEOs' service, respectively, and are zero otherwise. **Final Year$_{it}$** is an indicator variable that equals one for the year prior to the turnover year of the firm's CEO, and is zero otherwise. **CEO Ownership$_{it}$** is the percentage of outstanding stocks of firm i that is owned by the CEO at the beginning of year t. **CEO Age$_{it}$** is the CEO's age at the beginning of year t. **LnMVEquity$_{it}$** is the log of market value of equity at the beginning of year t. **MarketBookRatio$_{it}$** is defined as the market value of equity divided by the book value of equity at the beginning of year t. **Litigation Risk$_{it}$** is an indicator variable that equals one if the firm operates in a high-litigation industry (SIC codes 2833–2836; 3570–3577; 3600–3674; 5200–5961, and 7370–7374), and zero otherwise. **Leverage$_{it}$** is defined as total debt divided by total assets at the beginning of year t. **Institutional Ownership$_{it}$** is the percentage of stocks held by institutional investors at the beginning of year t. **Merger&Acquisition$_{it}$** is an indicator variable that equals one if the firm has engaged in a merger and acquisition in year t, and zero otherwise. **Issuer$_{it}$** is an indicator variable that equals one if Merger&Acquisition$_{it}$ is not equal to one and if the number of outstanding shares increased by at least 10 percent, or long-term debts increased by at least 20 percent, or the firm first appears on the CRSP monthly returns database in year t, and is zero otherwise. **ROA$_{it}$** is earnings before extraordinary items in year t divided by total assets at the beginning of the year t. **Loss$_{it}$** is an indicator variable that equals one if the firm reports a net loss for year t, and zero otherwise. **CFO$_{it}$** is cash flow from operations in year t scaled by the total assets at the beginning of year t. **Lagged Accruals$_{it}$** is total accruals in year $t-1$ scaled by total assets at the beginning of the year. **Lagged NOA$_{it}$** is the net operating asset at the beginning of year t, defined as shareholders' equity minus cash and marketable securities, plus total debt, deflated by sales. **Total Asset Growth$_{it}$** is change of total asset during year t, scaled by the total asset at the beginning of year t. **Employment Growth$_{it}$** is change of employment during year t, scaled by the employment at the beginning of year t.

Table 8 also reports the results of the above model with *Special Items*, as the dependent variable. *Special Items* is defined as special items scaled by total assets at the beginning of the year. Our conclusions are robust to using this variable. Specifically, special items have a significantly adverse effect on reported income in the CEO change year and a significantly favorable effect on reported income in the two subsequent years as well as in CEOs' final year of service.[17]

7. Conclusion

This study examines changes in CEOs' incentives to manage their firms' reported earnings during their tenure as CEO. We predict that in the early years of their service, when the market is more uncertain about their ability, they have greater incentives to overstate earnings to favorably influence the market's perception. For the sample period 1992–2010, we show

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[17] Pan et al. (2013) conclude that firms disinvest assets not only in the CEO change year, but in the following year as well. So why is that we do not observe larger write-offs and negative special items in the year after the CEO change year? A plausible explanation is that firms selectively sells assets associated with losses in the CEO change year and sell non-loss-bearing assets in the following years. Moreover, firms make decision to sell loss-bearing assets in the CEO change year, recognize the associated loss in that year, and then sell these assets in the following year(s). In all of these cases, losses on the sale of assets are recognized in the CEO change year.

that, as expected, earnings overstatement is greater in the early years than in the later years of CEOs' service and that this overstatement increases reported ROA by about 25% on average. These results are robust to using different earnings management measures, specifically, discretionary accruals, abnormal discretionary expenses, such as R&D expense, and special items. We also show that, as expected, the difference in the overstatement of earnings between the early and the later years of CEOs' service is less pronounced in firms with stronger monitoring, proxied by institutional ownership, analyst following, board independence, and audit committee independence. Finally, our findings have an implication for the tests of earnings overstatement by departing CEOs in their final year. These tests can provide misleading results without a control for earnings overstatement in the early years of their service.

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