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# **Executive Tenure and Cash Flow Management**

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# Executive Tenure and Cash Flow Management

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## ABSTRACT

The market is uncertain about the ability of executives in their early years of service. To favorably influence the market's perception of their ability, executives manage firm performance. Prior literature shows that CEOs have stronger incentives for earnings overstatement in their early years of service than in their final years of service. However, since there is an increased demand of the market for cash flow information, I examine whether executives have stronger incentives for cash flow management in their early years of service. I find that executives are more likely to manage cash flow in their early years of service due to career concerns, even after controlling for accruals. Also, I find that cash flow managed by CEOs (CFOs) in their early years of service is less (more) persistent than cash flow managed by CEOs (CFOs) who have been in office longer. I find that, in terms of cash flow persistence, CFOs in their early years of service are more influential on cash flow management than CEOs in their early years of service. Lastly, the mechanism through which executives manage cash flow is unknown in this paper.

**Keywords:** Executive tenure, cash flow management, career concern

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## **1. Introduction**

Firm performance management by executives has been studied. Most of the studies focus on earnings management performed by chief executive officers (CEOs hereafter) and examine the first year of service, the last year of service, or both. Those studies report that CEOs related to non-routine changes of executives overstate expenses or losses of their firms in the first year of service and take advantages of the resulting higher earnings in the subsequent years. (Strong and Meyer, 1987; DeAngelo, 1988; Pourciau, 1993). Other studies report that CEOs overstate earnings in their final year of service to receive higher pay when they leave their firms (Pourciau, 1993; Murphy and Zimmerman, 1993). Unlike the above studies, a recent study examines the first few years and the last few years of CEOs' service. This study reports that CEOs' incentives to overstate earnings are greater in their early years of service than in their later years of service due to career concerns (Ali and Zhang, 2015).

There are studies that examine the association between earnings management and CEO tenure. However, the association between cash flow management and CEO tenure has not been examined although there are growing interests of stakeholders in cash flow. Also, prior studies usually focus on CEOs and have not yet much examined chief financial officers (CFOs hereafter) CFOs although CFOs are mainly responsible for financial reporting. Thus, this paper examines whether executives (CEOs and CFOs) have greater incentives to manage cash flow in their early years of service.

The market is uncertain about executives' ability in their early years of service and firm performance reported at that time considerably affects the market's perception of their ability (Gibbons and Murphy, 1992; Holmstrom, 1999). Thus, they are more likely to manage firm

performance in their early years of service. However, as there are growing interests of the market on cash flow information due to the decreased earnings credibility, executives may be more likely to manage cash flow. Thus, I argue that executives manage operating cash flow (OCF hereafter) to a greater extent in their early years of service. However, there is a concern that accruals and cash flow are in the inverse relationship. When accruals increase, cash flow decreases, or vice versa. To eliminate such concern, it is important to point out that this paper examines cash flow management independently of accruals management.

For empirical analyses, I collect the sample for the period between 1995 and 2018. To test for OCF management, I examine the effect of executives' early years of service on the unexpected OCF. I use the model suggested by Dechow et al. (1998) to estimate the unexpected OCF and the model following Lee (2012) and Ali and Zhang (2015) for the empirical analyses.

Based on the empirical results, I find that executives manage OCF in their early years of service to favorably influence the market's perception of their ability. Also, I find that CEOs' and CFOs' incentives for OCF management is not different. The results are robust after controlling for accruals.

Next, I examine whether OCF managed by executives in their early years of service is less persistent than OCF managed by executives who are not in their early years of service. I find that OCF managed by CEOs in their early years of service is less persistent than OCF managed by CEOs who are not in their early years of service. I also find that OCF managed by CFOs in their early years of service is more persistent than OCF managed by CFOs who are not in their early years of service. This indicates good cash flow management of CFOs in their early years of service.

Lastly, I examined the mechanism that executives manage OCF. I focus on the cash conversion cycle due to the data availability issue to test for classification shifting and restatement. I expect the shortened cash conversion cycle to manage OCF but the results do not support the expectation. Thus, the mechanism for OCF management is unknown in this paper.

This study makes the following contributions. First, this study complements Ali and Zhang (2015) by providing the results regarding cash flow. Ali and Zhang (2015) report the positive association between CEOs' early years of service and earnings management. Adding to this result, I find a positive association between executives in their early years of service and incentives for cash flow management, after controlling for accruals. Secondly, I provide additional result on CFOs' opportunistic behaviors for firm performance management by showing that CFOs in their early years of service have stronger incentives to inflate OCF.

The rest of the paper is organized as follows. Prior literature and hypotheses development are discussed in Section 2 and sample selection procedure and research design are discussed in Section 3. Empirical results are discussed in Section 4, robustness test and additional analysis in Section 5, and conclusion in Section 6.

## **2. Prior Literatures and Hypotheses Development**

### **2.1 Career concerns and managerial opportunism**

Prior studies investigate how managers' career concerns make them to take opportunistic behaviors. Gibbons and Murphy (1992) argue that stakeholders are uncertain about the ability of CEOs. They argue that this uncertainty is regardless of whether CEOs are internally or externally promoted and regardless of CEOs' level of confidence in their ability. First, stakeholders put more weight on current performance than on past performance when they evaluate the ability of CEOs.



It implies that stakeholders do not seriously take past performance when they evaluate the ability of CEOs, rather they focus on the current performance. (Fama 1980; Holmstrom 1982, 1999). Thus, CEOs have strong incentives to report good performance in their early years of service. Secondly, since there is an adverse selection in the early years of CEOs' service, confident CEOs may suffer in their whole career if they get labeled as CEOs with low ability in the early years (Oyer, 2008; Axelson and Bond, 2009). It implies that they have strong incentives to report good performance in their early years of service regardless of their level of confidence in ability. Supporting the above arguments, Ali and Zhang (2015) report that CEOs overstate earnings in their early years of service and the incentives for earnings management decrease in the later years.

Subsequent studies extend the association between career concerns and managerial opportunism. Kuang et al. (2014) compare the incentives of CEOs recruited outside and the incentives of CEOs internally promoted for earnings management. They find that CEOs recruited outside engage in income-increasing management in their early years of service. The difference of extent of manipulation between the two groups of CEOs becomes insignificant after they survive the short run. Another subsequent study, Baginski et al. (2018) report that managers delay bad news disclosures due to career concerns. If managers receive a sufficiently large payment in the event of dismissal, they no longer delay the disclosure of bad news. These studies suggest that career concerns affect the managers' behaviors to be more opportunistic.

## **2.2 Cash flow management**

The market doubts earnings credibility due to earnings management and demand for cash flow information. Prior studies argue that cash flow forecasts help detect and mitigate earnings management (Wasley and Wu, 2006; McInnis and Collins, 2011) and, thus, there is an increased

demand of the market for cash flow forecasts, especially after accounting scandals in 2001. As the market put greater importance on cash flow, managers have incentives to manipulate cash flow without changes in bottom-line earnings. There is evidence that the market specifically focuses on cash flow. Call (2008) reports that investors weigh OCF for firms with cash flow forecasts, after controlling for earnings. DeFond and Hung (2003) report the positive stock market reaction to cash flow surprise, after controlling for earnings surprise. These results show that managers are more likely to manage cash flow without effects on earnings.

Building on these studies, Lee (2012) focuses on incentives and mechanism to inflate OCF and emphasizes that firms manage cash flow without any changes in bottom-line earnings. She finds that firms have incentives to report higher OCF when firms are near financial distress, when long-term credit ratings are near the investment/non-investment grade cutoff, when firms just beat analysts' cash flow forecasts, and when there are higher associations between stock returns and OCF than between stock returns and earnings. For these firms to inflate OCF, they perform classification shifting by restating cash flow statements or by classifying tax benefits from the exercise of employee stock options. Firms also adjust timing by shortening the cash conversion cycle and it is performed holding earnings constant. The above evidence suggests firms' increased likelihood of OCF management through various mechanism without any effects on earnings.

### **2.3 Effects of CEOs' and CFOs' incentives on financial reporting**

There is voluminous research on managers' impact on financial reporting. Many studies focus on the effect of economic incentives faced by managers. Prior studies provide evidence on the associations between financial reporting and earnings-based compensation and between financial reporting and equity-based compensation (Healy, 1985; Guidry et al., 1999; Baker et al.,

2003; Bergstresser and Philippon, 2006). Extant studies focus on impact of CEOs' incentives on financial reporting. However, researchers and policymakers concern that not just CEOs' incentives but also CFOs' incentives affect financial reporting. Fuller and Jensen (2002) argue that the increasing proportion of stock options in managers' compensation causes both CEOs and CFOs to focus on short-term stock price performance. Although such concern exists, most studies focus on CEOs' incentives. This is likely because CEOs are in superior position to CFOs and have power to replace top management team members (Mian, 2001). However, it is important to separately investigate the impact of CFOs' incentives on financial reporting because CEOs and CFOs have different responsibilities in firms. CEOs are responsible for overall corporate decisions while CFOs have primary and ultimate responsibilities on firms' financial reporting. Geiger and North (2006) find that discretionary accruals decrease surrounding the appointment of a CFO and this finding is not driven by the appointment of the concurrent CEO. This implies CFOs' independent influence on financial reporting. Thus, it is important to study impact of CFOs' incentives on financial reporting.

Prior studies report greater CFOs' influence on financial reporting management than CEOs' influence. Graham et al. (2005) report that CFOs are concerned with beating earnings benchmarks and perform earnings smoothing. Also, Jiang et al. (2010) find that the magnitude of accruals and the likelihood of meeting analyst forecasts are more sensitive to equity-based CFO incentives than to equity-based CEO incentives, supporting the argument that CFOs are more influential on earnings management than CEOs. Chava and Purnanandam (2010) find that CEO incentives are associated with capital structure and cash holding decisions and CFO incentives are more influential in debt maturity choices and earnings smoothing decisions. More recent study, Anantharaman and Lee (2014), find that CFOs are influential in firms' pension policies by showing

that CFOs' more pronounced association between risk shifting through pension underfunding and compensation structures that create higher wealth-risk sensitivity and weaker wealth-stock price sensitivity. These studies suggest that CFOs are influential on firms' financial reporting practices.

## **2.4 Hypothesis Development**

Gibbons and Murphy (1992) argue that the market is uncertain about the ability of CEOs. They argue that this uncertainty is regardless of whether CEOs are internally or externally promoted and regardless of CEOs' level of confidence in their ability. First, the market put more weight on current performance than on past performance to evaluate the ability of CEOs. Although CEOs are promoted within the firms, the ability of successful CEOs is different from the ability of employees of the lower level. Also, CEOs are not likely to leave a firm to join another. It implies that the market does not seriously take past performance when they evaluate the ability of CEOs, rather they focus on the current performance (Fama 1980; Holmstrom 1982, 1999). Thus, CEOs have strong incentives to report good performance in their early years of service and work harder.

Secondly, since there is an adverse selection in the early years of CEOs' service, confident CEOs may suffer in their whole career if they get labeled as CEOs with low ability in the early years (Oyer, 2008; Axelson and Bond, 2009). It implies that, regardless of CEOs' level of confidence in their ability, they have strong incentives to report good performance in their early years of service. Supporting the above arguments, Ali and Zhang (2015) find that earnings overstatement is greater in CEOs' early years of service than in their later years of service. They also argue that earnings overstatement is less likely to be detected with subsequent good firm performance, which is more likely to occur in firms with high ability CEOs. Also, these CEOs are more likely to remain in office beyond the first few years of their initial appointment (Milbourn,

2003). The market may perceive CEOs who have been staying longer in their firms as being more talented than CEOs who have been in their position for a shorter time period. This implies that newly appointed CEOs are more likely to opportunistically manage earnings.

However, although earnings management is less likely to be detected with subsequent good firm performance, the market has a significant skepticism on earnings credibility. To reduce the skepticism, they consider cash flow important and demand more for cash flow forecasts and information. This provides executives incentives to manage cash flow. Thus, it is necessary to examine the cash flow management in executives' early years of service. Based on the above discussions, I set the hypothesis as the following:

**H1.** Cash flow management is greater in the early years of executive's service.

There is a concern that accruals and cash flow are in the inverse relationship. Since accruals and cash flow are the components of earnings, accruals increase when cash flow decreases, or vice versa. This concern may lead to ask how to control for the effects of accruals on cash flow. However, Lee (2012) suggests that firms have incentives to manage OCF even in the absence of an effect on bottom-line earnings. Also, there are mechanism to manage OCF holding accrual-based earnings constant. Thus, I view cash flow independently of accruals on this paper.

### **3. Sample Selection and Research Design**

#### **3.1 Sample Selection**

I obtain financial data from Compustat for the period between 1988 and 2018. The sample period begins in 1988 because of the availability of OCF data. I obtain data for stock returns from CRSP and data for CEO and CFO tenure from Execucomp for the period between 1995 and 2018.

Sample testing begins in 1995 because I estimate unexpected OCF using the prior seven years. I exclude firms in regulated industries (SIC codes 4400 to 5000), financial institutions (SIC codes 6000 to 6500), and firms with any missing data to calculate variables used in the analyses. The final sample for the CEO sample contains 26,478 firm-year observations representing 4,572 CEOs and 2,059 firms. The final sample for the CFO sample contains 24,595 firm-year observations representing 4,324 CFOs and 2,041 firms. Table 1 shows the sample selection procedure. I winsorize all financial data at an extreme 2%.

### 3.2 Research Design

To estimate unexpected OCF (UOCF), I use the model of Dechow et al. (1998). I first estimate the expected OCF using the parameter estimates from the firm-level estimation of the following model over the prior seven years. Then, I subtract the expected OCF from the actual OCF to estimate the unexpected OCF.

$$OCF_t/TA_{t-1} = \lambda_0 + \lambda_1(1/TA_{t-1}) + \lambda_2(SALE_t/TA_{t-1}) + \lambda_3(\Delta SALE_t/TA_{t-1}) + \varepsilon_t \quad (1)$$

For the empirical analyses, I use the following model based on Lee (2012) and Ali and Zhang (2015).

$$\begin{aligned} UOCF_t = & \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_2 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_3 \text{ROA}_t + \beta_4 \text{SIZE}_t \\ & + \beta_5 \text{MB}_t + \beta_6 \text{ABACC}_t + \varepsilon_t \end{aligned} \quad (2)$$

UOCF is the dependent variable estimated using Dechow et al. (1998). The variables of interest are EarlyCEO and EarlyCFO. EarlyCEO is an indicator variable that equals one for the firm years that correspond to the first three years of CEOs' service, and zero otherwise. The cutoff of three years of CEOs' service is calculated as half of the median value for the number of years

as CEOs when leaving the office. Similarly, EarlyCFO is an indicator variable that equals one for the firm years that correspond to the first three years of CFOs' service, and zero otherwise. The cutoff of three years of CFOs' service is calculated as half of the median value for the number of years as CFOs. DISTRESS and WEIGHT are firm characteristics following Lee (2012). I include in the model because firms near financial distress and firms with greater association between stock returns and cash flow are more likely to manage OCF. DISTRESS is the bankruptcy score calculated as the natural logarithm of probability measure of bankruptcy based on Shumway (2001). WEIGHT is the weight on OCF from the regression estimated for every firm-year over a rolling seven-year period. I expect the positive coefficients for EarlyCEO and EarlyCFO and the positive coefficients for DISTRESS and WEIGHT. The control variables include return on assets (ROA), firm size (SIZE), market-to-book ratio (MB), and abnormal accruals (ABACC) based on Jones (1991). The variable definitions are provided in Appendix.

## **4. Results**

### **4.1 Summary Statistics and Correlation**

Table 2 reports the summary statistics for the variables used in the main analyses. I report statistics for UOCF and the control variables based on the sample of EarlyCEO because it has a larger sample size than the sample of EarlyCFO. The mean of UOCF is zero. 38.8% of CEOs and 50.5% of CFOs of each set of the samples are in their early years of service. The mean and median of DISTRESS are 0.3% and 0.1%, respectively. The mean for WEIGHT is 1.253. The mean for the incremental weight that investors put on earnings is 0.577 (untabulated). This result is different from the mean values reported in Lee (2012), which reports a smaller mean value for cash flow.

The possible explanation is that the larger value for cash flow than for earnings on this paper shows the trend of the market's increased demand for cash flow information.

Table 3 shows the correlation between the variables. EarlyCEO and EarlyCFO are positively correlated with UOCF. UOCF is positively correlated with DISTRESS and WEIGHT. The firm characteristics (DISTRESS and WEIGHT) are not significantly correlated, suggesting that each firm characteristic may provide different managerial incentives of cash flow management.

## **4.2 Empirical Results**

Table 4 reports the results of the main analyses. Columns (1) and (2) report the results for CEOs. The coefficients for EarlyCEO, 0.0020 and 0.0028, are significantly positive. The coefficients for DISTRESS and WEIGHT are also significantly positive, consistent with Lee (2012). These results suggest that CEOs are more likely to manage OCF to favorably influence the market's perception of their ability in their early years of service when the market is uncertain. Also, whether firms are near financial distress and whether firms' stock returns are more associated with cash flow boost CEOs' incentives to manage OCF in their early years of service. Columns (3) and (4) report the results for CFOs. The coefficients for EarlyCFO, 0.0026 and 0.0032, are significantly positive. The coefficients for DISTRESS and WEIGHT are also significantly positive, consistent with Lee (2012). These results suggest that CFOs are more likely to manage OCF to favorably influence the market's perception of their ability in their early years of service when the market is uncertain. Also, whether firms are near financial distress and whether firms' stock returns are more associated with cash flow boosts CFOs' incentives to manage OCF in their early years of service.



To test whose influence is greater on OCF management, I regressed UOCF jointly on EarlyCEO and EarlyCFO. Columns (5) and (6) report the results. The coefficients for EarlyCEO and EarlyCFO are significantly positive. The coefficients for EarlyCFO, 0.0026 and 0.0031, are greater than the coefficients for EarlyCEO, 0.0021 and 0.0027. However, the differences between the two coefficients under each column are insignificant. Thus, there is no difference between CEOs' and CFOs' influence on OCF management.

Lastly, the coefficients for the control variables are mostly significant for all regression specifications. The coefficients for ROA are positive, as expected, because UOCF is a component of return on assets. The coefficients for SIZE are mostly negative, indicating that smaller firms are more likely to inflate OCF. The coefficients for MB are significantly negative, which is different from Lee (2012). The possible explanation is that executives of firms with low market-to-book ratios have more incentives to inflate OCF and, thereby, increase stock value by reporting good performance. The coefficients for ABACC are significantly negative, as expected, because there is a negative association between abnormal OCF and abnormal accruals (Roychowdhury, 2006).

Taken together, the results on table 4 suggest that executives with more career concerns have stronger incentives to manage OCF in their early years of service to improve the market perception of their ability.

### **4.3 Persistence of Cash Flows**

Because the managed portion of OCF is non-recurring, it is less persistent than the unmanaged portion. To test for the persistence of UOCF, I estimate the coefficient using the following model following Lee (2012):

$$\begin{aligned} \text{OCF}_{t+1} = & \beta_0 + \beta_1 \text{UOCF}_t \times \text{EarlyCEO}_t (\text{UOCF}_t \times \text{EarlyCFO}_t) + \beta_2 \text{EarlyCEO}_t (\text{EarlyCFO}_t) \\ & + \beta_3 \text{UOCF}_t + \beta_4 \text{EOCF}_t + \beta_5 \text{ACC}_t + \varepsilon_{t+1} \end{aligned} \quad (3)$$

The interaction variables,  $\text{UOCF}_t \times \text{EarlyCEO}_t$  and  $\text{UOCF}_t \times \text{EarlyCFO}_t$ , are the variables of interest. I expect negative coefficients. I include accruals (ACC) as a control variable because accruals are informative in explaining future cash flow (Dechow et al., 1998).

Table 5 reports the results for the persistence of managed OCF. Consistent with Lee (2012) and Zhang (2018), the coefficients for UOCF are smaller than the coefficients for EOCF, suggesting that the unexpected OCF is less persistent than expected OCF and it reflects OCF management. Column (1) reports the results for the persistence of UOCF managed by CEOs in their early years of service. The coefficient for  $\text{UOCF}_t \times \text{EarlyCEO}_t$ , -0.0301, is significantly negative, suggesting that the OCF managed by CEOs in their early years of service is less persistent OCF managed by CEOs who have been in their firms longer.

Column (2) reports the results for the persistence of UOCF managed by CFOs in their early years of service. The coefficient for  $\text{UOCF}_t \times \text{EarlyCFO}_t$ , 0.0368, is significantly positive, suggesting that the OCF managed by CFOs in their early years of service is more persistent than OCF managed by CFOs who have been in their firms longer. This result also suggests that unexpected OCF increases the ability of UOCF to predict future OCF when managed by CFOs in their early years of service. This may indicate good cash flow management of CFOs in their early years of service.

Column (3) reports the results for joint regression to examine whose influence is greater on OCF management. The coefficient for  $\text{UOCF}_t \times \text{EarlyCEO}_t$ , 0.0035, is insignificant. The coefficient for  $\text{UOCF}_t \times \text{EarlyCFO}_t$ , 0.0293, is significantly positive. Also, the difference between

the two coefficients is weakly significant. These results suggest that CFOs in their early years of service are more influential on OCF management than CEOs in their early years of service. Lastly, the coefficients for ACC are significantly positive under all regression specifications, indicating that accruals are informative in predicting future cash flows.

Taken together, the results on table 5 shows that OCF managed by CEOs (CFOs) in their early years of service is less (more) persistent than OCF managed by CEOs (CFOs) in their longer tenure. Also, CFOs are more influential on OCF management than CEOs.

## **5. Robustness Test and Additional Analysis**

### **5.1 Robustness Test**

In the main analyses, I examine whether executives are more likely to manage OCF in their early years of service and find results consistent with the assumption. To test for robustness, I examine whether the same results hold after controlling for accruals using the below model.

$$\begin{aligned} \text{UOCF}_t (\text{UACC}_t) = & \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_3 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_4 \text{ROA}_t \\ & + \beta_5 \text{SIZE}_t + \beta_6 \text{MB}_t + \beta_7 \text{SUSPECT}_t + \beta_8 \text{UACC}_t (\text{UOCF}_t) + \varepsilon_t \end{aligned} \quad (4)$$

Following Lee (2012) and Roychowdhury (2006), I include ROA, SIZE, MB, SUSPECT, and UACC (UOCF) as control variables when predicting OCF management (accruals management). This analysis uses the simultaneous estimation. Accrual-based earnings management and real activities management are viewed as complementary. This implies that accrual-based earnings management and real activities management can be considered as a result of joint decision to manage firm performance. Thus, the simultaneous estimation of UOCF and UACC is appropriate for the robustness check.

Table 6 reports the results. The same regression specifications on table 4 are applied. Columns (1) and (3) have the dependent variable of UOCF and the control variable of UACC, and columns (2) and (4) have the dependent variable of UACC and the control variable of UOCF. The results are generally consistent with the results reported on table 4. Thus, it is robust that the executives with career concerns have stronger incentives to manage OCF to favorably influence the market's perception of their ability in their early years of service when the market is uncertain. The stronger robustness test results for EarlyCEO and EarlyCFO separately are provided on table 8 in Appendix.

## **5.2 Mechanism for OCF Management**

I perform an additional analysis to seek for the mechanism through which executives can manage OCF in their early years of service. Prior studies suggest that firms perform OCF management by classification shifting and timing adjustment. First, Lee (2012) finds that firms perform classification shifting by restating cash flow statement or by classifying tax benefits from exercise of employee stock options as OCF. Also, Baik et al. (2016) find that, based on a sample of firms that mandatorily adopt IFRS in Korea, firms in financial distress, firms with high interest payments, firms with high bank ownership, and Chaebol affiliated firms are more likely to classify interest payments as OCF to inflate OCF. Secondly, firms adjust timing by shortening cash conversion cycle, which measures the time difference between making cash payments for inventory and collecting cash on accounts receivable. This method allows firms to manage OCF holding earnings constant and it is less likely to be detected by the auditors or the Securities and Exchange Commission (SEC) (Lee, 2012). I focus on cash conversion cycle due to the data availability issue.

Shortening cash conversion cycle inflate OCF without any effects on earnings. The fourth quarter of a year is the last opportunity for firms to inflate OCF by delaying payments and accelerating collections. Since these are working capital items, they are likely to reverse in the next quarter. A reversal in the first quarter of the following year shows managers' opportunistic effort to inflate OCF and it is reflected in shortened cash conversion cycle.

To test for the cash conversion cycle, I first construct the measure of OCF management following Lee (2012). For each firm, I calculate the change in cash conversion cycle as the cash conversion cycle in the first quarter of year t+1 subtracted by the cash conversion cycle in the fourth quarter of year t. I adjust for the seasonal variation in the cash conversion cycle for each firm-quarter by subtracting the industry mean of the change in cash conversion cycle from the firm's change in cash conversion cycle. I compute the industry mean of the change in cash conversion cycle by using all firms available on Compustat quarterly. To test for the timing, I estimate the following regression:

$$\Delta CC_{t+1} = \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_3 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_4 \text{SIZE}_t + \varepsilon_t \quad (5)$$

I control for firm size because larger firms are more likely to have larger supplier networks, more bargaining power, and more diverse sources of financing than smaller firms. I expect positive coefficients for  $\text{EarlyCEO}_t$  and  $\text{EarlyCFO}_t$ , which suggest that executives in their early years of service shorten cash conversion cycle.

Table 7 reports the results. Under columns (1) and (2), the coefficients for  $\text{EarlyCEO}$  are insignificant. Under columns (3) and (4), the coefficients for  $\text{EarlyCFO}$  insignificant. Columns (5) and (6) are the results for joint regression of  $\text{EarlyCEO}$  and  $\text{EarlyCFO}$  to compare CEOs' and CFOs' influence on shortening cash conversion cycle in their early years of service. The

coefficients for EarlyCEO are significantly negative, which is opposite of the expectation. The coefficients for EarlyCFO are insignificant. Also, the differences between the two coefficients under each column are insignificant. These results suggest that CEOs have longer cash conversion cycle in their early years of service and they dominate on cash conversion cycle over CFOs.

Taken together, the results on table 7 do not support the expectation that executives in their early years of service manage OCF through timing adjustment by shortening cash conversion cycle. Thus, the mechanism for OCF management is unknown on this paper.

## **6. Conclusion**

This paper examines whether executives have stronger incentives to manage OCF in their early years of service. Prior studies report that CEOs are more likely to manage earnings in their early years of service to favorably influence the market's perception of their ability. Also, prior studies on cash flow management suggests that several firm characteristics provide stronger managerial incentives for OCF management.

Based on the above studies and consistent with the trend that the market demand more for the cash flow information due to decreased earnings credibility, I argue that executives with career concerns have stronger incentives to manage cash flow in their early years of service. I find generally consistent results with the prediction, even after controlling for accruals. Also I find that, when OCF is managed by CEOs in their early years of service, OCF is less persistent than when managed by CEOs with longer tenure. Additionally, OCF managed by CFOs in their early years of service is more persistent than OCF managed by CFO with longer tenure, which may indicate good cash flow management. Lastly, I do not find significant evidence on whether the executives

manage OCF through timing adjustment by shortening cash conversion cycle. The mechanism for OCF management by executives in their early years of service is unknown on this paper.

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## Tables

**Table 1 Sample Selection**

	Tenure	
	EarlyCEO	EarlyCFO
Compustat annual from 1988-2018 with (1) non-missing gvkey, total assets, sales, and cash flows excluding regulated industries and banks and financial institutions, and (2) 7 years of data in the estimation period to estimate UOCF in year t.	89,976	89,976
Less:		
Firm-years without control variables (ROA, SIZE, MB, and ABACC)	8,929	8,929
Missing data to compute DISTRESS based on Shumway (2001)	23,153	23,153
Missing data to compute WEIGHT based on a 7-year rolling regression of returns (from CRSP) on earnings and cash flows	6,333	6,333
Sub-total	51,651	51,651
Missing data from Execucomp to compute EarlyCEO	25,173	
Missing data from Execucomp to compute EarlyCFO		27,056
Total number of firm-year observations	26,478	24,595

**Table 2 Summary Statistics<sup>1)</sup>**

Variable	N	Mean	Std Dev	P25	Median	P75
UOCF	26,478	-0.000	0.106	-0.043	-0.001	0.041
EarlyCEO	26,478	0.388	0.487	0	0	1
EarlyCFO	24,595	0.505	0.500	0	0	1
DISTRESS <sup>2)</sup>	26,478	0.003	0.007	0.000	0.001	0.003
WEIGHT	26,478	1.203	6.297	-2.155	0.978	4.382
ROA	26,478	0.039	0.084	0.013	0.049	0.085
SIZE	26,478	7.095	1.329	6.123	7.042	8.041
MB	26,478	2.871	2.274	1.416	2.207	3.487
ABACC	26,478	0.000	0.055	-0.025	0.004	0.032

1) The statistics for the control variables are based on the sample of EarlyCEO.

2) For the ease of interpretation, I report the statistics before taking the natural logarithm.

**Table 3 Correlation Matrix<sup>1)</sup>**

Variable	UOCF	EarlyCEO	EarlyCFO	DISTRESS	WEIGHT	ROA	SIZE	MB	ABACC
UOCF	1	0.001	0.008	0.010*	0.006	0.095***	0.003	0.021***	-0.259***
EarlyCEO	0.001	1	0.148***	0.106***	-0.002	-0.100***	-0.011*	-0.033***	-0.003
EarlyCFO	0.014*	0.148***	1	0.080***	-0.021***	-0.057***	-0.087***	-0.005	-0.005
DISTRESS	0.003	0.097***	0.077***	1	-0.006	-0.442***	-0.274***	-0.174***	0.059***
WEIGHT	0.008	-0.001	-0.020***	-0.003	1	0.015*	0.048***	-0.018***	0.013**
ROA	0.103***	-0.101***	-0.061***	-0.483***	0.010*	1	0.227***	0.183***	0.273***
SIZE	0.011*	-0.004	-0.085***	-0.249***	0.046	0.085***	1	0.031***	0.038***
MB	0.054***	-0.064***	-0.015**	-0.344***	-0.001	0.459***	0.094***	1	-0.007
ABACC	-0.303***	-0.001	-0.012*	-0.060***	0.019***	0.168***	0.022***	-0.004	1

1) The upper diagonal reports Pearson correlation and the bottom diagonal reports Spearman correlation.

**Table 4 Test for cash flow management of CEOs and CFOs in their early years of service**

$$UOCF_t = \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_3 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_4 \text{ROA}_t + \beta_5 \text{SIZE}_t + \beta_6 \text{MB}_t + \beta_7 \text{ABACC}_t + \varepsilon_t$$

Variable	(1) Coefficient	(2) Coefficient	(3) Coefficient	(4) Coefficient	(5) Coefficient	(6) Coefficient
Intercept	0.0243*** (6.85)	-0.0013 (-0.46)	0.0266*** (7.18)	-0.0005 (-0.17)	0.0297*** (7.37)	-0.0013 (-0.342)
<b>EarlyCEO</b>	<b>0.0020*</b> <b>(1.87)</b>	<b>0.0028***</b> <b>(2.61)</b>			<b>0.0021*</b> <b>(1.72)</b>	<b>0.0027**</b> <b>(2.45)</b>
<b>EarlyCFO</b>			<b>0.0026**</b> <b>(2.48)</b>	<b>0.0032***</b> <b>(3.07)</b>	<b>0.0026**</b> <b>(2.20)</b>	<b>0.0031***</b> <b>(2.86)</b>
DISTRESS	0.0052*** (12.46)		0.0055*** (12.96)		0.0057*** (12.53)	
WEIGHT		0.0001* (1.78)		0.0001* (1.74)		0.0001* (1.70)
ROA	0.2389*** (12.46)	0.2022*** (30.19)	0.2417*** (32.42)	0.2023*** (29.61)	0.2291*** (31.48)	0.2016*** (28.84)
SIZE	0.0002 (0.50)	-0.0009** (-2.22)	0.0001 (0.21)	-0.0010** (-2.54)	-0.0003 (-0.58)	-0.0010** (-2.50)
MB	-0.0006** (-2.43)	-0.0008*** (-3.56)	-0.0007*** (-2.87)	-0.0010*** (-4.01)	-0.0004* (-1.70)	-0.0010*** (-3.78)
ABACC	-0.5453*** (-56.37)	-0.5389*** (-55.63)	-0.5328*** (-53.80)	-0.5263*** (-53.03)	-0.5260*** (-50.91)	-0.5230*** (-51.47)
N	26,478	26,478	24,595	24,595	23,559	23,559
Adj.R <sup>2</sup>	11.86%	11.35%	11.81%	11.22%	11.17%	11.06%
Difference					0.08	0.05
Significance of Difference					0.7789	0.8211

\*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix.

**Table 5 Test for persistence of unexpected OCF**

$$\text{OCF}_{t+1} = \beta_0 + \beta_1 \text{UOCF}_t \times \text{EarlyCEO}_t (\text{UOCF}_t \times \text{EarlyCFO}_t) + \beta_2 \text{EarlyCEO}_t (\text{EarlyCFO}_t) + \beta_3 \text{UOCF}_t + \beta_4 \text{EOCF}_t + \beta_5 \text{ACC}_t + \varepsilon_{t+1}$$

Variable	(1) Coefficient	(2) Coefficient	(3) Coefficient
Intercept	0.0367*** (45.74)	0.0406*** (42.82)	0.0423*** (45.42)
<b>UOCF*EarlyCEO</b>	<b>-0.0301***</b> <b>(-2.85)</b>		<b>0.0035</b> <b>(0.35)</b>
<b>UOCF*EarlyCFO</b>		<b>0.0368***</b> <b>(3.70)</b>	<b>0.0293***</b> <b>(3.05)</b>
EarlyCEO	-0.0041*** (-4.79)		-0.0047*** (-4.95)
EarlyCFO		0.0016* (1.68)	0.0023** (2.49)
UOCF	0.7570*** (102.05)	0.6794*** (82.50)	0.6769*** (80.80)
EOCF	0.8818*** (168.59)	0.8084*** (161.94)	0.7960*** (167.48)
ACC	0.1995*** (30.79)	0.1610*** (25.42)	0.1506*** (25.42)
N	26,943	27,489	29,139
Adj.R <sup>2</sup>	52.35%	49.40%	49.91%
Difference			2.91*
Significance of Difference			0.0881

\*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix.

**Table 6 Robustness check**

$$\text{UOCF}_t (\text{UACC}_t) = \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_3 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_4 \text{ROA}_t \\ + \beta_5 \text{SIZE}_t + \beta_6 \text{MB}_t + \beta_7 \text{SUSPECT}_t + \beta_8 \text{UACC}_t (\text{UOCF}_t) + \varepsilon_t$$

Variable	(1) Coefficient	(2) Coefficient	(3) Coefficient	(4) Coefficient
Intercept	0.0309*** (7.68)	0.0248*** (10.14)	0.0033 (0.99)	0.0096*** (4.71)
<b>EarlyCEO</b>	<b>0.0019</b> <b>(1.56)</b>	<b>0.0021***</b> <b>(2.92)</b>	<b>0.0027**</b> <b>(2.28)</b>	<b>0.0026***</b> <b>(3.58)</b>
<b>EarlyCFO</b>	<b>0.0026**</b> <b>(2.21)</b>	<b>0.0009</b> <b>(1.20)</b>	<b>0.0032***</b> <b>(2.70)</b>	<b>0.0012*</b> <b>(1.66)</b>
DISTRESS	0.0055*** (12.19)	0.0031*** (11.08)		
WEIGHT			0.0001 (1.44)	0.0001** (2.00)
ROA	0.2292*** (31.69)	0.2193*** (51.37)	0.1954*** (29.15)	0.2009*** (50.92)
SIZE	-0.0005 (-1.17)	-0.0009*** (-3.14)	-0.0017*** (-3.79)	-0.0015*** (-5.61)
MB	-0.0004* (-1.71)	-0.0016*** (-11.51)	-0.0007*** (-2.90)	-0.0017*** (-12.66)
SUSPECT	-0.0018 (-0.40)	-0.0015 (-0.56)	0.0008 (0.19)	-0.0001 (-0.03)
UACC	-0.5100*** (-50.26)		-0.5039*** (-49.57)	
UOCF		-0.1895*** (-50.26)		-0.1880*** (-49.57)
N	23,628	23,628	23,628	23,628
Adj.R <sup>2</sup>	10.94%	16.80%	10.39%	16.38%
Difference	0.16	1.38	0.06	1.73
Significance of Difference	0.6899	0.2401	0.8104	0.1885

\*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix.

**Table 7 Test for mechanism for OCF management**  
 $\Delta CC_{t+1} = \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_3 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_4 \text{SIZE}_t + \varepsilon_t$

Variable	(1) Coefficient	(2) Coefficient	(3) Coefficient	(4) Coefficient	(5) Coefficient	(6) Coefficient
Intercept	8.4879*** (6.25)	5.5721*** (5.02)	8.1088*** (5.71)	4.6562*** (3.95)	9.1574*** (6.29)	5.3009*** (4.40)
<b>EarlyCEO</b>	<b>-0.6226</b> <b>(-1.43)</b>	<b>-0.4746</b> <b>(-1.09)</b>			<b>-0.9331**</b> <b>(-2.03)</b>	<b>-0.7370*</b> <b>(-1.61)</b>
<b>EarlyCFO</b>			<b>0.3616</b> <b>(0.83)</b>	<b>0.4879</b> <b>(1.13)</b>	<b>0.5002</b> <b>(1.12)</b>	<b>0.6177</b> <b>(1.38)</b>
DISTRESS	0.5576*** (3.63)		0.6600*** (4.22)		0.7359*** (4.58)	
WEIGHT		0.1047*** (3.41)		0.1173*** (3.77)		0.1149*** (3.63)
SIZE	0.3702** (2.43)	0.2333 (1.58)	0.4706*** (2.98)	0.3107** (2.02)	0.4256*** (2.64)	0.2427 (1.55)
N	28,159	28,159	25,958	25,958	24,837	24,837
Adj.R <sup>2</sup>	0.05%	0.04%	0.08%	0.06%	0.09%	0.06%
Difference					4.39**	3.93**
Significance of Difference					0.0361	0.0475

\*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix.



## Appendix

Variable Definitions	
UOCF	Actual operating cash flow (OCF) minus predicted OCF; predicted OCF measured using the following model over the prior 7 years: $OCF_t/TA_t = \lambda_0 + \lambda_1 (1/TA_{t-1}) + \lambda_2 (SALE_t/TA_{t-1}) + \lambda_3 (\Delta SALE_t/TA_{t-1}) + \varepsilon_t$
EarlyCEO	An indicator variable that equals 1 for firm-years that correspond to the cutoff of 3 years based on the median value of the number of years as CEO when leaving the firm and 0 otherwise
EarlyCFO	An indicator variable that equals 1 for firm-years that correspond to the cutoff 3 years based on the median value of the number of years as CFO and 0 otherwise
DISTRESS	Natural logarithm of the probability of Shumway (2001) bankruptcy measure; Shumway score = $e^a / (1 + e^a)$ , where $a = -13.303 - 1.982 \times NI + 3.593 \times TL - 0.467 \times SIZE - 1.809 \times RETURN + 5.791 \times SIGMA$
WEIGHT	Weight on cash flow forecast given by $\lambda_2$ from the regression estimated for every firm-year over a rolling 7-year period; $RETURN_t = \lambda_0 + \lambda_1 (EARN/TA_{t-1}) + \lambda_2 (OCF_t/TA_{t-1}) + \varepsilon_t$ , where RETURN = CRSP buy/hold stock return minus CRSP value-weighted market index over the fiscal year (dividends included)
ROA	Income before extraordinary item divided by total assets
SIZE	Natural logarithm of total assets
MB	Market value of equity divided by book value of equity
ABACC	Unexpected accruals based on Jones (1991)
ACC	Operating accruals, calculated as income before extraordinary item minus cash flow from operations, scaled by average total asset
EOCF	Predicted CFO measured using the following model over the prior 7 years: $CFO_t/TA_t = \lambda_0 + \lambda_1 (1/TA_{t-1}) + \lambda_2 (SALE_t/TA_{t-1}) + \lambda_3 (\Delta SALE_t/TA_{t-1}) + \varepsilon_t$
$\Delta CC$	$CC_{q1,t+1} - CC_{q4,t}$ , where $CC = \frac{(AR_q + AR_{q-1})/2}{Sales_q/90} + \frac{(INV_q + INV_{q-1})/2}{COGS_q/90} - \frac{(AP_q + AP_{q-1})/2}{Purchases_q/90}$
SUSPECT	An indicator variable that equals 1 if net income scaled by total assets is greater than or equal to 0 but less than 0.005, and 0 otherwise

**Table 8 Robustness check**

$$\text{UOCF}_t (\text{UACC}_t) = \beta_0 + \beta_1 \text{EarlyCEO}_t + \beta_2 \text{EarlyCFO}_t + \beta_3 \text{DISTRESS}_t (\text{WEIGHT}_t) + \beta_4 \text{ROA}_t \\ + \beta_5 \text{SIZE}_t + \beta_6 \text{MB}_t + \beta_7 \text{SUSPECT}_t + \beta_8 \text{UACC}_t (\text{UOCF}_t) + \varepsilon_t$$

Panel A				
Variable	(1) Coefficient	(2) Coefficient	(3) Coefficient	(4) Coefficient
Intercept	0.0255*** (7.19)	0.0209*** (9.64)	0.0059 (0.20)	0.0065*** (3.64)
<b>EarlyCEO</b>	<b>0.0018*</b> <b>(1.70)</b>	<b>0.0018***</b> <b>(2.73)</b>	<b>0.0025**</b> <b>(2.40)</b>	<b>0.0022***</b> <b>(3.41)</b>
DISTRESS	0.0050*** (12.10)	0.0029*** (11.51)		
WEIGHT			0.0001* (1.65)	0.0001* (1.92)
ROA	0.2406*** (33.09)	0.2306*** (53.53)	0.2055*** (30.71)	0.2105*** (53.24)
SIZE	-0.0001 (-0.16)	-0.0003 (-1.43)	-0.0011*** (-2.81)	-0.0010*** (-4.00)
MB	-0.0006** (-2.39)	-0.0020*** (-14.17)	-0.0008*** (-3.48)	-0.0022*** (-15.29)
SUSPECT	0.0004 (0.11)	-0.0011 (-0.45)	0.0025 (0.62)	0.0001 (0.04)
UACC	-0.5319*** (-56.03)		-0.5264*** (-55.36)	
UOCF		-0.1735*** (-50.44)		-0.1966*** (-55.36)
N	26,556	26,556	26,556	26,556
Adj.R <sup>2</sup>	11.74%	17.40%	11.26%	17.00%

\*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix.

Panel B				
Variable	(1) Coefficient	(2) Coefficient	(3) Coefficient	(4) Coefficient
Intercept	0.0278*** (7.51)	0.0226*** (9.82)	0.0013 (0.43)	0.0080*** (4.22)
<b>EarlyCFO</b>	<b>0.0026**</b> <b>(2.47)</b>	<b>0.0011*</b> <b>(1.76)</b>	<b>0.0032***</b> <b>(3.03)</b>	<b>0.0015**</b> <b>(2.27)</b>
DISTRESS	0.0053*** (12.65)	0.0030*** (11.22)		
WEIGHT			0.0001* (1.61)	0.0001** (2.33)
ROA	0.2439*** (32.82)	0.2321*** (51.83)	0.2060*** (30.18)	0.2115*** (51.60)
SIZE	-0.0002 (-0.41)	-0.0005* (-1.85)	-0.0013*** (-3.11)	-0.0011*** (-4.32)
MB	-0.0007*** (-2.86)	-0.0022*** (-14.36)	-0.0020*** (-3.97)	-0.0023*** (-15.41)
SUSPECT	-0.0018 (-0.43)	-0.0004 (-0.14)	0.0005 (0.13)	0.0009 (0.36)
UACC	-0.5182*** (-53.42)		-0.5125*** (-52.72)	
UOCF		-0.2001*** (-53.42)		-0.1976*** (-52.72)
N	24,680	24,680	24,680	24,680
Adj.R <sup>2</sup>	11.68%	17.22%	11.11%	16.81%

\*, \*\*, and \*\*\* represent significance at 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix.

## 국문 초록

### 경영자 재임 기간과 현금 흐름 조정

시장은 새로운 경영자의 능력에 대해 불확실성을 가진다. 이러한 불확실성을 줄이기 위해 경영자는 재임 기간 초기에 성과를 상향 조정한다. 선행 연구결과에 따르면, 경영자는 재임 기간 말기 보다 초기에 이익을 상향 조정할 유인이 더 크다는 것을 발견했다. 그러나, 현금 흐름 예측에 대한 정보 사용자의 수요가 증가하고 있기 때문에 본 연구에서는 재임 기간 초기의 경영자가 현금 흐름을 상향 조정할 유인이 있는지에 대해 연구하였다. 본 연구 결과는 다음과 같다. 첫째로, 재임 기간 초기의 경영자가 영업 현금 흐름을 상향 조정할 유인이 더 높다는 것을 발견했다. 또한, CEO 와 CFO 간의 영향력의 차이는 없는 것으로 나타났다. 둘째로, 재임 기간 초기의 CEO 에 의해 조정된 영업 현금 흐름이 그렇지 않은 CEO 에 의해 조정된 영업 현금 흐름보다 지속성이 낮은 것으로 나타났다. 또한, 재임 기간 초기의 CFO 에 의해 조정된 영업 현금 흐름은 그렇지 않은 CFO 에 의해 조정된 영업 현금 흐름보다 지속성이 높은 것으로 나타났다. 그리고, 지속성의 측면에서 영업 현금 흐름 조정에는 CFO 가 CEO 보다 더 큰 영향을 미치는 것으로 나타났다. 마지막으로, 현금 전환 주기 (cash conversion cycle)을 통해 현금 흐름을 조정한다는 결과는 제시하지 못했다.

**키워드:** 경영진 임기, 현금흐름 조정, 경영자의 경력관리

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