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CFO Gaps: Determinants and Impact on the Corporate Information Environment*

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Abstract

A CFO gap arises when the CFO position is left vacant for a period between the departure of the old CFO and the appointment of a new CFO. We find that CFO gaps are fairly common; over the sample period 2004–2016, approximately one-third of CFO turnovers are associated with a CFO gap, lasting on average two quarters and two months. CFO gaps are more likely for firms that face more labor market search frictions and with financial reporting and performance issues, and are less likely for firms with succession plans and with greater growth opportunities. While CFO gaps are not associated with significant changes in firms' financial reporting quality, they are associated with significantly negative changes in firms' voluntary disclosure frequency and analysts' forecast quality. Our findings shed light on the factors that influence top executive gaps and the impact of such gaps on firms' information environment.

Keywords: CFO gaps; CFO turnovers; information environment.

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I. INTRODUCTION

In October 2004, Applied Materials' CFO, Joseph R. Bronson, resigned from his position, and Nancy Handel, the company's corporate controller and principal accounting officer, was appointed as the incoming CFO.[1] However, not all CFO transitions are seamless. For example, in January 2005, when American Greetings' CFO, Bob Ryder, left to join another company as CFO, his responsibilities were handled by the treasurer and head of investor relations until the company found a new CFO in August 2005.[2] In the latter case, there is a CFO gap when the CFO position is vacant for a period between the old CFO's departure and the new CFO's appointment.

CFO gaps offer a unique opportunity to investigate the determinants and economic impact of top executive absences. While such absences are significant events for firms, there is scarce evidence on why they occur and whether they have immediate and discernible effects on corporate decisions. Investigating gaps involving the CEO position may not be feasible, because firms almost always appoint an interim CEO if a permanent CEO cannot be found soon enough. To fill the void in the literature, our research question is twofold: what factors affect the likelihood of CFO gaps, and what impact do CFO gaps have on firms' information environment?

We focus on the following factors that are expected to affect the likelihood of CFO gaps: firms' 1) succession planning, 2) labor market search frictions, 3) growth opportunities, and 4) financial reporting and performance issues. From a practical point of view, firms will be less likely to experience a CFO gap if they have succession plans in place. Building on labor market theories (e.g., Nobel Prize Committee 2010; Mortensen 2011; Pissarides 2011), we posit that firms will be more likely to experience a CFO gap when there are more search frictions and fewer growth

[1] http://www.appliedmaterials.com/company/news/press-releases/2004/10/applied-materials-announces-management-change-and-names-nancy-h-handel-as-chief-financial-officer. According to this article, the CFO resigned to pursue other interests.

[2] https://www.marketwatch.com/story/american-greetings-shares-fall-after-cfo-resigns; https://www.marketwatch.com/story/american-greetings-names-michael-merriman-cfo-as-of-sept-1.

opportunities, because it will take longer to find suitable candidates with search frictions and there will be less surplus to bargain over if there is lower growth potential. Lastly, we expect that when firms have financial reporting and performance issues, potential CFO candidates will be less willing to join such firms, leading to a higher likelihood of CFO gaps.

When examining the consequences of CFO gaps, we focus on their implications for firms' information environment, as financial reporting and disclosures are key areas under CFOs' supervision. Without a formal CFO in place, firms may face difficulty in the supervision and coordination of financial reporting, earnings projections, and communication with investors and stakeholders. Therefore, CFO gaps can adversely impact these dimensions of the information environment. At the same time, ex ante, it is unclear whether such an adverse impact will be significant. Today, CFOs play an increasingly important role in firms' strategic planning. Their traditional roles of financial reporting and investor communication are usually assigned to executives in charge of each specific area (Bernard, Ge, Matsumoto, and Toynbee 2021), while CFOs mainly oversee and coordinate finance- and accounting-related matters. Hence, it is an empirical question how important this coordination role is.

Our full sample includes 2,246 CFO turnovers over the period 2004–2016 for 1,414 firms.[3] We identify CFO turnovers with a gap as those where the period between the old CFO's departure and the new CFO's appointment is more than one month.[4] CFO turnovers without a gap therefore include those where the period is less than one month. CFO gaps are fairly common.

[3] Note that we exclude CFO turnovers with CEO turnovers in the same year, so that the tests are not confounded by the effect of CEO turnovers. See Section III for a detailed discussion of the sample selection process.
[4] This is to ensure that there is a meaningful period of time without a CFO in place. The results remain similar if we use one week or two weeks, instead of one month, as the minimum cut-off for a CFO gap.

Approximately 30 percent of CFO turnovers in our sample are associated with a CFO gap, with the gap on average lasting two quarters and two months.[5]

To provide contextual evidence, we search within sample firms' 8-Ks for the reasons for CFO departures. Among CFO turnovers both with and without a gap, only a small proportion are stated to be terminations or due to financial reporting or legal issues (3.59 percent for CFO turnovers with a gap and 2.34 percent for CFO turnovers without a gap). Compared with CFO turnovers without a gap, those with a gap are less often due to CFO departures that are likely planned (i.e., retirement or switching to another position in the same firm) (18.44 percent vs. 58.72 percent), and are more often due to CFO departures that are likely unplanned (i.e., joining another company or pursuing other interests, and health or personal reasons) (67.66 percent vs. 32.46 percent).

We first investigate why CFO gaps occur by regressing the incidence of a CFO gap on proxies for firms' succession planning, labor market search frictions, growth opportunities, and financial reporting and performance issues, controlling for CFO departure reasons and firm characteristics. We use whether the new CFO is promoted internally as a proxy for succession planning. As expected, the likelihood of a CFO gap is lower if the new CFO is an insider. We use the following measures as proxies for lower labor market search frictions: board network (size and interlock), and the quality of life and number of listed firms in a firm's headquarters city. Consistent with our expectations, high values of these variables are associated with a lower likelihood of a CFO gap. Also as expected, the likelihood of a CFO gap is lower if a firm or its

[5] The median is two quarters, and the first and third quartiles are one and three quarters, respectively. While the shortest CFO gap is one quarter by construction, some are quite long, with the 90th percentile at five quarters and the maximum at 41 quarters. When we examine the association between CFO gaps and firms' information environment, we find that the adverse effect of CFO gaps is strongest for the first two quarters of the gaps. This suggests that firms may take actions to address the negative consequences of a CFO gap once the gap lasts too long.

industry has more growth opportunities. Lastly, with respect to financial reporting and performance issues, as predicted, the likelihood of a CFO gap is greater when the previous CFO was terminated or left due to financial reporting or legal issues and when a firm announced a restatement in the previous year.

After finding support for our predictions of the determinants of CFO gaps, we then examine their consequences for the following dimensions of firms' information environment: financial reporting, management forecasts, and analyst forecasts.[6] We use propensity score matching (PSM) and compare the two types of CFO turnovers, those with a gap and without a gap. Specifically, we define CFO gap quarters as those quarters between the old CFO's departure and the new CFO's appointment (inclusive) for CFO turnovers with a gap, and define CFO turnover quarters as those in which the CFO departure and appointment occur for CFO turnovers without a gap. We first compare CFO gap quarters and CFO turnover quarters with their corresponding pre-turnover quarters (the four quarters before the old CFO's departure) to estimate the effects of CFO gaps and CFO turnovers, respectively. We then compare the effect of CFO gaps with that of CFO turnovers to estimate the incremental effect of CFO gaps. We confirm the parallel trend assumption for the information environment proxies and include firm fixed effects in the regressions to further control for firms' innate characteristics. Hence, the incremental effect of CFO gaps should capture the *causal* effect of CFO gaps on firms' information environment.

For financial reporting quality, we use the following proxies: restatement, signed and absolute value of discretionary accruals, and the Dechow and Dichev accrual quality measure. We do not find a significant difference in terms of financial reporting quality between CFO gap

[6] Beyer, Cohen, Lys, and Walther (2010) argue that firms' information environment is shaped by three interdependent parts: mandatory disclosure, voluntary disclosure (e.g., management forecasts), and third-party information intermediaries (e.g., sell-side security analysts). Our empirical tests are designed to capture these dimensions.

quarters and pre-turnover quarters, between CFO turnover quarters and pre-turnover quarters, or between CFO gap quarters and CFO turnover quarters. Therefore, CFO gaps do not seem to significantly affect firms' mandatory financial reporting. In contrast, we find that CFO gap quarters are significantly associated with adverse changes in management forecasts and analyst forecasts compared with CFO turnover quarters without a gap. During CFO gap quarters, firms are less likely to issue management earnings forecasts, and analyst earnings forecasts are less accurate and more dispersed. In terms of economic magnitude, during CFO gap quarters, the probability of issuing management forecasts is lower by 1.64 percentage points, a decrease of 8 percent relative to the pre-turnover level; analyst earnings forecast error is on average higher by 3.3 cents per share, a relative increase of 22 percent; and analyst forecast dispersion is on average higher by 1.5 cents per share, a relative increase of 17 percent. These findings suggest that CFO gaps are associated with significant reductions in voluntary disclosure frequency and analyst forecast quality.

Taken together, the consequence analyses suggest that while the impact of CFO gaps on mandatory reporting is not significant, CFO gaps significantly and adversely affect voluntary disclosure and analyst forecasts. These findings are consistent with CFOs playing an active role in voluntary disclosure and communication with financial intermediaries. The insignificant results for mandatory reporting, meanwhile, may be due to CFO gaps being short on average, which constrains our ability to find meaningful changes in financial reporting practices, given that accounting policies and estimations take a longer time to change.

We perform cross-sectional and additional tests to provide more insights. First, compared with the pre-turnover quarters, the effects of CFO gaps on management forecasts and analyst forecasts are insignificant for firms that are more likely to have a financial expert CEO, for firms that have taken remedial actions (by appointing an interim CFO or hiring the outgoing CFO as a

consultant), and for firms with less intensive investments (capital and R&D expenditures scaled by total assets lower than the sample median). Second, compared with the pre-turnover quarters, the adverse effects of CFO gaps on management forecasts and analyst forecasts are significant for cases where the old CFO is likely to have left voluntarily but insignificant for cases where the old CFO was forced out. We also find that firms' performance and operating uncertainty do not change significantly during CFO gap quarters. These additional tests help address the concern that the effects of CFO gaps may be related to underlying firm performance or risk.

Our study is the first to examine the determinants and consequences of top executive gaps, which can cause significant disruptions to firm operations but have so far been overlooked by researchers. The study contributes to the literature in the following ways. First, based on the determinant analyses, we provide novel evidence that CFO gaps are systematically associated with succession planning, labor market search frictions, growth opportunities, and financial reporting and performance issues. These findings provide a better understanding of the forces influencing top executive searches and have implications for both practitioners and academics. The evidence related to succession planning indicates the importance of succession plans. Firms without a CFO succession plan may find themselves caught off guard by CFO gaps and experience significant disruptions in voluntary disclosure and communication with financial intermediaries. This confirms the concerns expressed by investors and analysts that effective communication between a firm and the investment community is compromised when the CFO's seat is left empty (Knox and Murphy 2014).

Second, our study bridges the labor market and disclosure literature by showing that labor market search frictions faced by firms can be a significant constraint on corporate disclosure efficacy. Corporate disclosures can be adversely affected by search frictions in the labor market,

which delay top executive searches and are often beyond firms' control. This adds a new angle to the disclosure literature beyond factors usually associated with disclosure quality—labor market search frictions can act as outside constraints on how firms disclose information and communicate with investors.

Third, the consequence analyses suggest that the absences of individual top executives, even for a short period of time, have immediate and significant effects on corporate decisions. The findings are important for understanding the economic impact of CFO absences and the value of CFOs. While CFOs presumably add value to firms, there is limited archival evidence on how CFOs add value or in what dimensions. CFOs oversee a portfolio of functions, including financial reporting and disclosures, in addition to financing and strategy, in collaboration with other executives and employees. Thus, it is an empirical question whether the absence of CFO for several quarters will have any discernible effect on the information environment. While prior studies have shown that CFOs significantly influence financial reporting and disclosures (for example, the CFO fixed effects are significant in explaining financial reporting and disclosure measures), there is no definite evidence that the CFO alone increases financial reporting and disclosure quality. Indeed, Li, Sun, and Ettredge (2010) find that simply hiring a new CFO is not associated with SOX 404 opinion improvement and only hiring a better qualified CFO helps. Our findings highlight the areas where a CFO plays a discernible and beneficial role.

Our study is related to, but different from, previous studies of CFO turnovers and CFOs' individual styles. First, Brochet, Faurel, and McVay (2011) find that after CFO turnovers, firms experience a temporary decrease in the frequency of management earnings guidance, but they do not distinguish between CFO turnovers with and without a gap. We examine the incremental effect of CFO gaps beyond CFO turnovers, and our findings suggest that the adverse change in firms'

management forecast provision is largely due to CFO gaps rather than due to CFO turnovers per se. Second, prior studies have documented CFOs' individual styles in financial reporting and disclosures (Bamber, Jiang, and Wang 2010; Ge, Matsumoto, and Zhang 2011). Our evidence suggests that although CFOs have individual styles, individual effects seem to cancel out across firms and CFO switches on average do not affect firms' information environment. In contrast, CFO absences, even for a short time, lead to a deterioration in the information environment.

II. MAIN PREDICTIONS

Determinants of the Likelihood of CFO Gaps

We focus on the following dimensions to explain the likelihood of CFO gaps: firms' succession planning, labor market search frictions, growth opportunities, and financial reporting and performance issues. Succession planning is closely related to top executive turnover. Labor market theories (e.g., Nobel Prize Committee 2010; Mortensen 2011; Pissarides 2011) suggest that search frictions and job returns are among the most important factors affecting how long it takes to match the employer and employee. Financial reporting and performance issues can also affect how easy it is to fill the CFO position.

First, if firms have succession plans in place, it is intuitive that there will be a lower probability of CFO gaps. For instance, under the succession plans, firms may have taken steps to prepare some senior accounting and finance executives for the CFO post. Therefore, with the departure of the old CFO, these executives can take up CFO responsibilities relatively quickly.

Second, labor market theories have long recognized that the labor market is subject to search frictions. Search frictions can be caused by multiple factors, such as transmission of information about jobs and differences in location. More search frictions lead to a longer time in matching the employer and employee. For instance, the news that a firm is looking for a new CFO

may not reach the right candidates, or the right candidates may be unwilling to move to the firm's location. In addition, a labor market with search frictions implies that the employer and employee in a good match enjoy some monopoly power, with the job return or surplus being shared between the two parties—like splitting a cake. It takes a shorter time to fill the job vacancy if this "cake" is bigger, as a bargaining solution is easier to reach in such a case. For high-level positions such as CFO, job surplus is likely to be positively associated with the growth opportunities for a firm and its industry.

Third, when a firm has financial reporting and performance issues, potential CFO candidates may be less willing to join the firm. In such cases, the job will be more challenging, the job return will be less, and there may be a reputation loss if the new CFO becomes associated with these issues, even if the issues already exist before she joins. Our first hypothesis is stated as follows (in alternative form):

H1: The likelihood of a CFO gap is negatively associated with succession planning, positively associated with labor market search frictions, negatively associated with growth opportunities, and positively associated with financial reporting and performance issues.

Consequences of CFO Gaps

CFOs are in charge of firms' finance and accounting functions, which cover financial reporting, budgeting and projection, raising capital, and communicating with investors and stakeholders, among other things. If the CFO position is vacant, the firm's finance and accounting functions can be affected, with direct implications for the information environment. Beyer et al. (2010) argue that firms' information environment is shaped by three interdependent parts: mandatory disclosure (i.e., financial reporting), voluntary disclosure (e.g., management forecasts),

and third-party information intermediaries (e.g., sell-side security analysts). All of these can potentially be affected by CFO absences.

CFOs typically oversee the financial reporting process. The key accounting policies, assumptions, and estimations are subject to the CFO's review. If CFOs possess expertise related to financial reporting, CFO absences may lead to a deterioration in financial reporting quality. In particular, CFO absences can result in increased accounting mistakes and thus a greater probability of restatements; they can also result in poorer accounting estimates and poorer accrual quality.

Issuing management forecasts involves gathering information from various divisions and projecting future sales and expenses, and CFOs can facilitate both information gathering across divisions and financial projections. CFOs can also have more expertise and a better strategic vision than interim staff. Hence, without a CFO in office, firms may be less likely to issue management forecasts and the accuracy of management forecasts may also decrease.

In addition, CFOs are actively involved in communication with investors and stakeholders, including financial analysts, through multiple channels. For example, Li, Minnis, Nagar, and Rajan (2014) document that CFOs' comments make up approximately one-third of the text in conference call transcripts. In an Ernst & Young survey of CFOs, two-thirds of the respondents said that they increasingly acted as the public face of the organization and identified communicating with and influencing investors as among the most challenging areas of the job (Ernst & Young 2010). When the CFO is absent, various routes of communication may be curtailed, including formal routes such as conference calls and informal routes such as meetings with financial analysts. This can negatively impact analysts' information acquisition. As a result, financial analysts' forecast accuracy can decrease and forecast dispersion can increase.

Brochet et al. (2011) find that there are temporary breaks in management guidance following CFO turnovers. However, they do not distinguish between CFO turnovers with and without a gap. While both events involve a CFO transition, the nature of the transition (and the mechanism through which the information environment is affected) is different. For CFO turnovers without a gap, the contrast is between the old and new CFOs. On average, any change in a firm's reporting and disclosures surrounding a CFO turnover may be attributable to the new CFO needing time to adjust. For CFO gaps, the contrast is between having and not having a CFO. This contrast is more drastic and hence more disruptive to a firm's reporting and disclosures. Our consequence analyses use CFO turnovers without a gap as the benchmark and examine the incremental disruption caused by a CFO gap.

To summarize, we expect that, compared with CFO turnover quarters without a gap, during CFO gap quarters, firms' information environment will deteriorate. Our second set of hypotheses is stated as follows (in alternative forms):

H2a: Compared with CFO turnover quarters without a gap, CFO gap quarters are associated with a greater probability of restatements and poorer accrual quality.

H2b: Compared with CFO turnover quarters without a gap, CFO gap quarters are associated with fewer and less accurate management forecasts.

H2c: Compared with CFO turnover quarters without a gap, CFO gap quarters are associated with less accurate and more dispersed analyst forecasts.

We may not find supportive evidence for H2 for the following reasons. First, CFOs now play an increasingly important role in strategic planning (Bernard et al. 2021). The traditional roles of accounting, finance, and investor communication are usually delegated to executives in charge of each specific area, such as the controller for financial reporting and the head of investor relations

for communicating with investors. CFOs oversee and supervise these functions. Hence, it is an empirical question how important a CFO's coordination and supervision role is for financial reporting and disclosures. Second, empirically, because a CFO gap is usually short, it may be relatively easy for other executives to step up and assume the CFO's responsibilities for a short time.[7]

III. DATA, SAMPLE, AND REASONS FOR CFO TURNOVERS

Data and Sample

We collect CFO turnover data from the Audit Analytics director/officer change dataset,[8] financial accounting and stock return data from Compustat and CRSP, management forecasts and analyst forecasts from I/B/E/S, board characteristics from BoardEx, and restatement and internal control weakness data from Audit Analytics.

Table 1, Panel A, describes the sample selection process. We start with 10,565 CFO turnovers with both the old CFO's departure date and the new CFO's hiring date for Compustat firms over the period 2004–2016, after excluding CFO turnovers in the same year as CEO turnovers. This restriction is imposed so that the tests are not confounded by CEO turnovers. We then exclude CFO turnovers for firms that are not in I/B/E/S (5,127), for firms that do not have Compustat data in the quarter prior to CFO turnovers (1,755), and for firms without available data for calculating the regression variables for the consequence tests or the determinant test (1,316 and 106). We also exclude CFO turnovers with an incorrect CFO departure date or hiring date (15),

[7] Engel, Gao, and Wang (2015) find that forced CFO turnovers are associated with improvements in financial reporting quality. However, forced CFO turnovers are only a small proportion of CFO turnovers. Among our sample of CFO turnovers, only 11 percent are classified as forced by Audit Analytics. In an additional analysis, we separately examine forced CFO turnovers.

[8] The Audit Analytics director/officer change dataset covers all SEC registrants who have disclosed a director or officer change in an 8-K or 8-K/A. The dataset is compiled by first filtering SEC filings for key words and then manually extracting the relevant information. The dataset currently tracks these filings since August 2004.

based on our own 8-K search. These steps lead to a final sample of 2,246 CFO turnovers for 1,414 unique firms.

As discussed earlier, we treat a CFO turnover as a turnover with a gap, if the amount of time between the old CFO's departure and the new CFO's appointment is more than one month.[9] We treat other CFO turnovers as turnovers without a gap. We compare CFO gap quarters and CFO turnover quarters without a gap with the pre-turnover quarters (i.e., the four quarters before the old CFO's departure). We also include the post-turnover quarters (i.e., the four quarters after the new CFO's appointment) in our regressions. See Figure 1 for the timeline.

Under this definition, there are 677 CFO turnovers with a gap and 1,569 CFO turnovers without a gap in our sample (Table 1, Panel B). Approximately 30 percent of CFO turnovers (677/2,246) are associated with a CFO gap. There are altogether 1,842 CFO gap quarters—a CFO gap is thus on average approximately two quarters and two months long (1,842/677 = 2.7). The first and third quartiles of the length of a CFO gap are one quarter and three quarters. The 10th and 90th percentiles are one quarter and five quarters. Therefore, CFO gaps are fairly common but on average short.

Reasons for CFO Turnovers

To provide contextual evidence, we search for reasons for CFO turnovers as stated by the firms in 8-Ks. We are able to find 8-Ks for 2,091 CFO turnovers (including 640 turnovers with a gap and 1,451 turnovers without a gap), approximately 93 percent of the final sample (2,091/2,246).

[9] Therefore, for some CFO gap quarters, the new CFO may be present for part of the quarter (for example, the new CFO may join in the latter part of the quarter). In a sensitivity test (untabulated), we separately examine the CFO gap quarters where the new CFO is present at the earnings announcement for the quarter and where the new CFO is not. We find that the negative effects of CFO gaps on management forecasts and analyst forecasts are stronger for the second group. This points toward a direct link between the CFO absence and the information environment.

We tabulate the reasons for CFO turnovers in Table 2. When we compare CFO turnovers with and without a gap, those with a gap are much less likely to be planned CFO successions (i.e., "retirement" and "switch to another position in the same firm") and are much more likely to be unplanned (i.e., "join another company or pursue other interests" and "health or personal reasons"). Specifically, for CFO turnovers with a gap, the proportions of planned and unplanned turnovers are 18.44 percent and 67.66 percent, respectively, whereas they are 58.72 percent and 32.46 percent for CFO turnovers without a gap. Potential financial reporting and performance issues (i.e., "termination" and "financial reporting or legal issues") only account for a small portion of CFO turnovers (3.59 percent for those with a gap and 2.34 percent for those without a gap). Some firms state that the CFO departure is "not due to disagreement" (7.66 percent for CFO turnovers with a gap and 2.76 percent for those without a gap).[10] Lastly, a small percentage of firms do not provide the reasons for CFO departures in their 8-Ks (8.44 percent for CFO turnovers with a gap and 5.44 percent for those without a gap).

Thus, based on firms' 8-K disclosures, in most cases, CFO gaps are related to unplanned CFO departures and are not due to financial accounting and performance problems.[11]

IV. DETERMINANTS OF THE LIKELIHOOD OF CFO GAPS

Research Design and Proxies

To understand why CFO gaps occur, we run the following Probit regression:

$$If\_Gap_t = \alpha + \beta\ Internal\_Promote$$

[10] Some firms state this reason in conjunction with other reasons (for example, "health" and "not due to disagreement").

[11] At first glance, this seems to be inconsistent with Mian's (2001) inference that CFO turnovers are mostly disciplinary. Upon a closer examination, the sample differences are likely to explain the different nature of CFO turnovers in our sample and in Mian's (2001) sample. Mian (2001) bases the inference that CFO turnovers are mostly disciplinary upon the findings that the average abnormal returns in the two-year and one-year windows before CFO turnovers are significantly negative (-15.14 percent and -10.72 percent, Table 4, Mian 2001). In contrast, the average abnormal returns in the two-year and one-year windows before CFO turnovers are 6.77 percent and -0.06 percent for our final sample of CFO turnovers.

$$
\begin{aligned}
&+\Gamma\,[Board\_Size,\ Board\_Interlock,\ High\_Life,\ High\_NFirm] \\
&+\Delta[MTB,\ Pos\_IndGrowth] \\
&+Z[Terminate,\ Restate\_Ann,\ ICW,\ TAcc,,\ Low\_AF\_Rev,\ Low\_IndAdj\_ROA,\ Low\_IndAdj\_Ret] \\
&+H[Planned,\ Unplanned] \\
&+\Theta[MV,\ NAnalyst,\ Std\_CF,\ Std\_Ret,\ Invest\_Intensity,\ Fin\_Intensity] \\
&+\ Industry\ FE + Year\ FE + Quarter\ FE + \varepsilon_t
\end{aligned}
\tag{1}
$$

The regression is run at the CFO turnover level, using all of the CFO turnovers in the final sample. *If_Gap* is one for CFO turnovers with a gap and zero for CFO turnovers without a gap. The Appendix provides detailed variable definitions. Γ, Δ, Z, H, and Θ are vectors.

As discussed in Section II, we focus on the following dimensions: firms' succession planning, labor market search frictions, growth opportunities, and financial reporting and performance issues. Because a firm's succession plan is not directly observable, we use *Internal_Promote*, an indicator for an insider being appointed as the new CFO, as a proxy for succession planning. This variable should be closely related to succession planning, in that if a firm appoints an outsider as the incoming CFO, it is likely that the firm does not have a succession plan in place. H1 implies a negative coefficient on *Internal_Promote*.

Labor market search frictions can be informational or geographical (e.g., Nobel Prize Committee 2010). Our proxies for search frictions thus include those related to board network (*Board_Size* and *Board_Interlock*) and those related to firm location (the quality of life in a firm's headquarters city (*High_Life*) and the number of listed firms with the same headquarters city as the firm (*High_NFirm*)). *Board_Size* is the total number of directors. *Board_Interlock* is the number of inside directors sitting on the boards of other firms, scaled by the total number of directors (Kang and Tan 2008). When the board consists of more members and when a greater percentage of inside directors have other board positions, it is easier for the CFO search news to reach a broad pool of qualified candidates. *High_Life* is an indicator for high quality of life in a

firm's headquarters city; it is equal to one if the life expectancy in the city is above the sample median. When the quality of life of a firm's location is higher, it is easier to convince candidates to move for the job. *High_NFirm* is an indicator that is equal to one if the number of listed firms in a firm's headquarters city is in the top sample quintile. A greater number of listed firms in the same city means a larger CFO candidate pool. These variables are at the yearly level and measured in the same year as CFO turnover, with higher values corresponding to fewer search frictions. H1 implies negative coefficients on these variables.

For growth opportunities, the first proxy is *MTB*, measured as the market-to-book ratio averaged over the previous four quarters. The second proxy is *Pos_IndGrowth*, which captures industry growth prospects. It is equal to one if the total sales in the industry (based on two-digit SIC codes) in the CFO turnover quarter increases compared with the same quarter last year. H1 implies negative coefficients on *MTB* and *Pos_IndGrowth*.

For financial reporting and performance issues, we use the following proxies: *Terminate*, *Restate_Ann*, *ICW*, *TAcc*, *Low_AF_Rev*, *Low_IndAdj_ROA*, and *Low_IndAdj_Ret*. *Terminate* is an indicator for the old CFO being terminated or departing because of financial reporting or legal issues, as disclosed in 8-Ks. We infer that there are underlying financial reporting or performance issues in such cases. *Restate_Ann* is an indicator for a restatement announcement over the previous four quarters, *ICW* is an indicator for internal control weaknesses for the last fiscal year, and *TAcc* is the average total accruals (scaled by beginning-of-quarter total assets) over the previous four quarters. We use these three variables to capture financial reporting issues. *Low_AF_Rev* is an indicator for low expected performance and is equal to one if the change in analysts' consensus annual earnings forecast from the quarter prior to the CFO turnover to the CFO turnover quarter is in the bottom sample quintile. *Low_IndAdj_ROA* (*Low_IndAdj_Ret*) is an indicator for poor

accounting (stock) performance and is equal to one if a firm's average industry-adjusted return on assets (stock return) over the previous four quarters is in the bottom sample quintile. We include the above three variables as proxies for performance issues. H1 implies positive coefficients on the proxies for financial reporting and performance issues.

Besides the above variables of interest, we control for planned CFO departures (*Retire* and *Switch* as indicators for "retirement" and "switch to another position in the same firm") and unplanned CFO departures (*Pursue* and *Personal* as indicators for "join another company or pursue other interests" and "health or personal reasons"). We expect negative coefficients on *Retire* and *Switch* and positive coefficients on *Pursue* and *Personal*. We control for the following firm characteristics (measured over the previous four quarters): firm size (*MV*), analysts following (*NAnalyst*), standard deviation of operating cash flows (*Std_CF*), standard deviation of stock returns (*Std_Ret*), investment (*Invest_Intensity*), and financing (*Fin_Intensity*). We do not have directional predictions for them. We also include industry, year, and fiscal quarter fixed effects.

Regression Results – Testing H1

We first present the descriptive statistics for the determinant analyses in Table 3, Panel A, for the full sample and separately for the sub-sample of CFO turnovers with a gap and the sub-sample of CFO turnovers without a gap. The univariate comparisons of the determinant variables between the two sub-samples support our predictions, although the univariate differences in the means and medians between the two sub-samples are not significant for *High_Life*, *Pos_IndGrowth*, and *Terminate*.

The regression results are presented in Table 3, Panel B.[12] As expected, the coefficient on *Internal_Promote* is significantly negative, indicating the importance of succession planning for

[12] For all regressions, we winsorize the continuous variables at the top and bottom 1 percent.

reducing the likelihood of CFO gaps. With respect to labor market search frictions, as expected, the coefficients on *Board_Interlock*, *High_Life*, and *High_NFirm* are significantly negative. That is, it is easier for firms to find a CFO replacement if they have better-connected boards and are in cities with better quality of life and more listed firms. This supports our prediction that labor market search frictions constrain a firm's ability to find a new CFO. With respect to growth opportunities, as expected, the coefficients on *MTB* and *Pos_IndGrowth* are significantly negative, confirming that CFO candidates are more attracted to jobs with better potential. Also as expected, the coefficients on *Terminate* and *Restate_Ann* are significantly positive, suggesting that it is more difficult for a firm to fill the CFO position if the previous CFO left due to financial reporting or legal issues or if a firm has recently announced a restatement. The other proxies for financial reporting and performance issues are not significant in the multivariate regression.

Turning to the control variables, we find that the planned departure variables (*Retire* and *Switch*) have negative coefficients and the unplanned departure variables (*Pursue* and *Personal*) have positive coefficients, consistent with expectations. The firm characteristics are insignificant except for *Invest_Intensity*, which is significantly positive; the CFO role in firms with more investments may be more complicated and hence takes longer to fill.

In sum, consistent with H1, the chance of a CFO gap is lower for firms with succession plans and with more growth opportunities and is higher for firms facing more labor market search frictions and with financial accounting and performance issues. We note that there are likely to be other important considerations in the CFO search process. For instance, firms may trade off the benefits of finding a more suitable candidate who has the required expertise (which can take a longer time) and the information environment costs of CFO gaps. Supporting this trade-off story, in an additional test (untabulated), we use the length of the CFO title to proxy for the broader

expertise required for the CFO position and find it to be positively associated with the likelihood of CFO gaps.

V. CFO GAPS AND INFORMATION ENVIRONMENT

Research Design and Proxies

To alleviate the concern that firms experiencing CFO turnovers with and without a gap may be systematically different, we use PSM to analyze the impact of CFO gaps on the information environment. Specifically, for each CFO turnover with a gap, we identify the CFO turnover without a gap that has the closest propensity score estimated based on the determinant model in Table 3, Panel B. Using a caliper value of 0.01, this matching process yields a sample of 481 CFO turnovers with a gap and 481 CFO turnovers without a gap. This PSM sample consists of 7,482 unique firm-quarters (including CFO gap quarters and the surrounding eight quarters, and CFO turnover quarters without a gap and the surrounding eight quarters).[13]

Table 4 presents the descriptive statistics for the PSM sample. Panel A is for the full PSM sample. Panel B compares the firm characteristics in the pre-turnover, turnover, and post-turnover periods between the two types of CFO turnovers. The statistics show that for the PSM sample, the firm characteristics of CFO turnovers with and without a gap are similar prior to CFO turnovers (except for *MF* and *Restate*). This indicates that our matching procedure is successful in reducing the differences between these two groups. In the regressions, in addition to controlling for these firm characteristics, we include firm fixed effects to further ensure that our results are not due to correlated firm characteristics.

[13] The PSM sample includes both internal successions and external appointments of CFOs. Internal successions are more likely to be turnovers without a gap (Table 3, Panel B) and may also be associated with less serious consequences for the information environment. To ensure that our results are not driven by internal successions, we exclude CFO turnovers associated with internal successions, re-run the determinant analyses, re-construct the PSM sample, and re-run the consequence analyses. The results (untabulated) are qualitatively similar. All of our inferences also hold using the full sample.

We run the following OLS regressions:

$$\begin{aligned} Info\_Proxy_{i,t} = {} & \beta_0 + \beta_1 Gap_{i,t} + \beta_2 Post\_Gap_{i,t} + \beta_3 MV_{i,t-1} + \beta_4 MTB_{i,t-1} + \beta_5 NAnalyst_{i,t-1} \\ & + \beta_6 Board\_Size_{i,t} + \beta_7 Restate_{i,t-4\sim t-1} + \beta_8 ICW_{i,t-4\sim t-1} \\ & + \beta_9 ROA_{i,t} + \beta_{10} Abn\_Ret_{i,t-1} + \beta_{11} AF\_FE_{i,t-1} \\ & + \beta_{12} AF\_Disp_{i,t-1} + \beta_{13} Op\_Cycle_{i,t-1} + \beta_{14} Std\_CF_{i,t-1} + \beta_{15} Std\_Ret_{i,t-1} + \beta_{16} XFin_{i,t} \\ & + Firm\ FE + Year\ FE + Quarter\ FE + \varepsilon_{i,t} \end{aligned} \quad (2)$$

$$\begin{aligned} Info\_Proxy_{i,t} = {} & \beta_0 + \beta_1 Turn\_no\_Gap_{i,t} + \beta_2 Post\_Turn\_no\_Gap_{i,t} + \beta_3 MV_{i,t-1} + \beta_4 MTB_{i,t-1} \\ & + \beta_5 NAnalyst_{i,t-1} + \beta_6 Board\_Size_{i,t} + \beta_7 Restate_{i,t-4\sim t-1} + \beta_8 ICW_{i,t-4\sim t-1} \\ & + \beta_9 ROA_{i,t} + \beta_{10} Abn\_Ret_{i,t-1} + \beta_{11} AF\_FE_{i,t-1} \\ & + \beta_{12} AF\_Disp_{i,t-1} + \beta_{13} Op\_Cycle_{i,t-1} + \beta_{14} Std\_CF_{i,t-1} + \beta_{15} Std\_Ret_{i,t-1} + \beta_{16} XFin_{i,t} \\ & + Firm\ FE + Year\ FE + Quarter\ FE + \varepsilon_{i,t} \end{aligned} \quad (3)$$

Info_Proxy denotes the proxies for financial reporting quality, management forecasts, and analyst forecasts. *Gap* is an indicator variable for CFO gap quarters.[14] *Turn_no_Gap* is an indicator variable for CFO turnover quarters without a gap. β_1 from regressions (2) and (3) thus estimates the effects of *Gap* and *Turn_no_Gap*, respectively. We then compare them to estimate the incremental effect of CFO gaps.[15]

We use the following proxies for financial reporting quality: restatement (*Restate*), discretionary accruals (both signed and unsigned, *DA* and |*DA*|), and the Dechow and Dichev accrual quality measure (|*DD_Resid*|). *Restate* is an indicator for a financial misstatement; it is equal to one if the firm-quarter falls within a restated period based on future restatement announcements. We follow prior studies in estimating the accrual measures (Dechow, Sloan, and Sweeney 1995; Dechow and Dichev 2002; Kothari, Leone, and Wasley 2005; Louis and Robinson

[14] In a sensitivity test (untabulated), we use a continuous measure of CFO gap: *Gap_Months*. For CFO gap quarters, *Gap_Months* is measured as the number of months between the old CFO's departure date and the earlier of the earnings announcement date for the quarter and the new CFO's appointment date if a new CFO is appointed in the current quarter. For CFO turnovers without a gap, *Gap_Months* is set to zero. We run the regressions using the PSM sample, including the same control variables and fixed effects as the main tests. The inferences remain similar.

[15] In a sensitivity test (untabulated), we use the difference-in-differences design for the observations from pre-turnover quarters and CFO gap quarters/CFO turnover quarters. The inferences remain the same.

2005; Collins, Pungaliya, and Vijh 2017). Note that the accrual measures are likely to be noisy, which can lower the power of the tests. For management forecasts, we examine whether the firm issues a quarterly earnings forecast (*MF*) and management forecast errors (|*MF_FE*|). For analyst forecasts, we examine analyst forecast errors (|*AF_FE*|) and forecast dispersions (*AF_Disp*). The Appendix provides detailed variable definitions.

As controls, we include *Post_Gap* (an indicator for the four quarters after a CFO gap) and *Post_Turn_no_Gap* (an indicator for the four quarters after CFO turnover without a gap) in regressions (2) and (3), respectively. We include firm size (*MV*), market-to-book ratio (*MTB*), and analyst coverage (*NAnalyst*) to control for the overall information demand. We include board size (*Board_size*) and recent restatement and internal control weaknesses (*Restate* and *ICW*) to capture the effects of the board and past financial reporting quality. In addition, we control for firm performance (return on assets, *ROA*; abnormal stock returns, *Abn_Ret*; earnings surprises, *AF_FE*), operating and information uncertainty (analyst forecast dispersion, *AF_Disp*; operating cycle, *Op_Cycle*; cash flow volatility, *Std_CF*; stock return volatility, *Std_Ret*), and external financing activities (*XFin*). The control variables are measured for the previous quarter, except for *Board_Size*, *Restate*, *ICW*, *ROA*, and *XFin*. *Board_Size* is at the yearly level. *Restate* and *ICW* are over the previous four quarters. *ROA* is for quarter *t* to control for the measurement errors in accrual estimates, and *XFin* is for quarter *t* because firms may make reporting and disclosure decisions taking into account concurrent financing needs (e.g., Lang and Lundholm 2000; Gong, Li, and Xie 2009).[16]

[16] We choose the control variables following prior research (e.g., Lennox and Park 2006; Gong et al. 2009; Feng and Koch 2010; Chen, Matsumoto, and Rajgopal 2011; Lee, Matsunaga, and Park 2012). In an additional test (untabulated), we also control for future performance and operational uncertainty. The results remain similar.

In addition, when *MF* is the dependent variable, we control for the decision whether to issue an earnings forecast in the previous quarter (MF_{t-1}) to capture the stickiness in management disclosures.[17] When |*MF_FE*| is the dependent variable, we include an indicator for a range forecast (*Range*) and forecast horizon (*Horizon*).[18] For *MF*, |*MF_FE*|, |*AF_FE*|, and *AF_Disp*, we control for *ROA* in quarter *t*-1 and additionally control for the magnitude of total accruals (|*TAcc*|) because management forecasts and analyst forecasts may be associated with financial reporting decisions.

Table 4, Panel C, provides the correlations among the regression variables for the PSM sample. We find that *Gap* is positively correlated with |*DA*|, negatively correlated with *MF*, and positively correlated with |*AF_FE*| and *AF_Disp*, providing preliminary evidence that the information environment quality is lower during CFO gap quarters.

Regression Results – Testing H2a, H2b, and H2c

CFO Gap Quarters and Financial Reporting Quality (H2a)

Table 5 presents the regression results.[19, 20] We find that *Gap* is not significantly associated with any of the financial reporting quality measures. Similarly, *Turn_no_Gap* is not significantly

[17] As the explanatory variables include lagged values of the dependent variables and firm fixed effects, the results may be affected by the Nickell bias (Nickell 1981). To ensure that our inferences are not affected, in a sensitivity test (untabulated), we drop MF_{t-1}, $|AF\_FE_{t-1}|$, and AF_Disp_{t-1} from all of the regressions in Tables 5, 6, and 7. The results are similar to the main tests.

[18] A limitation of the |*MF_FE*| regression is that the results may be affected by self-selection—we only observe |*MF_FE*| when managers issue forecasts. Unfortunately, we are not able to identify convincingly exogenous variables (that is, variables that affect management forecast issuance but not management forecast error) that can be used for selection models (Lennox, Francis, and Wang 2012). Hence, readers should keep this limitation in mind when interpreting the results for management forecast errors.

[19] All t-statistics are based on standard errors clustered by firm and by quarter to address cross-sectional and time-series dependences (Gow, Ormazabal, and Taylor 2010).

[20] The number of observations in column (1) (4,058 firm-quarters) includes 1,057 from CFO gap quarters and 3,001 from the surrounding eight quarters. The number of observations in column (2) (3,870 firm-quarters) includes 481 from CFO turnover quarters without a gap and 3,389 from the surrounding eight quarters. (The number of observations for the other regressions with different dependent variables is smaller due to data availability.) Note that the sum of observations in columns (1) and (2) (4,058 + 3,870 = 7,928) is greater than the number of unique firm-quarters in the PSM sample (7,482) because the pre-turnover quarters and post-turnover quarters of two adjacent CFO turnovers can overlap. All of our results are robust if we exclude the overlapping quarters.

associated with any of the financial reporting quality measures. The difference between *Gap* and *Turn_no_Gap* is not significant either. These results suggest that CFO gaps have no significant impact on firms' financial reporting quality.

CFO Gap Quarters and Management Earnings Forecasts (H2b)

Table 6 presents the regression results. In column (1), *Gap* is significantly and negatively associated with the likelihood of issuing management forecasts (t = -2.14). In contrast, in column (2), *Turn_no_Gap* is not statistically significant, suggesting that simply having a CFO turnover does not affect management forecast frequency. The difference in the coefficients on *Gap* and *Turn_no_Gap* is statistically significant (z = 2.89, p-value < 0.1). The probability of issuing management forecasts during CFO gap quarters is lower by 1.64 percentage points (= 0.0245 - 0.0081) compared with CFO turnover quarters without a gap. This is economically significant, given that the average probability of issuing management forecasts is 20.4 percent in the pre-turnover period (Table 4, Panel B) and the relative decrease is hence 8 percent (= 1.64 percent/20.4 percent).

In column (3), *Gap* is significantly and positively associated with management forecast errors (t = 1.79), and in column (4), *Turn_no_Gap* is positive but not statistically significant. However, the difference in the coefficients on *Gap* and *Turn_no_Gap* is not statistically significant. That is, the incremental impact of CFO gaps on management forecast accuracy is not significant, suggesting that having a CFO gap does not incrementally affect the accuracy of the management forecasts that are issued, beyond the influence of CFO turnovers. In addition, in Table 6, both *Post_Gap* and *Post_Turn_no_Gap* are insignificant.

Overall, the results in Table 6 suggest that firms are significantly less likely to issue management forecasts during CFO gap quarters than during CFO turnover quarters without a gap.[21]

CFO Gap Quarters and Analyst Earnings Forecasts (H2c)

Table 7 presents the regression results. In column (1), *Gap* is significantly and positively associated with analyst forecast errors (t = 2.80). In contrast, in column (2), the coefficient on *Turn_no_Gap* is not statistically significant, suggesting that analyst forecast errors during CFO turnover quarters are not different from those during pre-turnover quarters. The difference in the coefficients on *Gap* and *Turn_no_Gap* is statistically significant (z = 5.60, p-value < 0.05). The effect of a CFO gap is also economically significant. The difference in the coefficients on *Gap* and *Turn_no_Gap* is 0.0011, which indicates that analyst forecast errors are on average 3.3 cents higher during CFO gap quarters, given that the mean beginning-of-quarter stock price (the deflator of analyst forecast error) for the analyst forecast sample is $30.16 (0.0011 × $30.16 = $0.033). This is approximately 22 percent of the mean analyst forecast error of 15.1 cents per share in the pre-turnover period (mean deflated analyst forecast error 0.005 (Table 4, Panel B) × $30.16 = $0.151).

In column (3), *Gap* is significantly and positively associated with analyst forecast dispersions (t = 2.50). In contrast, in column (4), *Turn_no_Gap* is not significant in explaining analyst forecast dispersions. The difference in the coefficients on *Gap* and *Turn_no_Gap* is statistically significant (z = 4.71, p-value < 0.05). That is, analyst forecasts are more dispersed during CFO gap quarters than during CFO turnover quarters without a gap. The difference in the

[21] In additional analyses (untabulated), we examine managers' quarterly earnings, sales, and CAPEX forecasts together and obtain similar inferences. We also examine annual management earnings forecasts. We find that CFO gaps are associated with reduced annual management forecast frequency for fiscal quarters other than the fourth quarter, but the negative impact of CFO gaps on annual management forecast frequency is attenuated for the fourth quarter, possibly because firms are more expected to issue annual earnings forecasts in the last quarter of the fiscal year than in other quarters.

coefficients on *Gap* and *Turn_no_Gap* is 0.0005, which suggests that during CFO gap quarters, the standard deviation of analyst forecasts is on average 1.5 cents higher (0.0005 × \$30.16 = \$0.015). This is approximately 17 percent of the mean standard deviation of analyst forecasts of 9 cents per share (mean deflated analyst forecast dispersion 0.003 (Table 4, Panel B) × \$30.16 = \$0.09).

Interestingly, *Post_Gap* is also statistically significant in both columns (1) and (3), suggesting that firms' external communications with analysts cannot be remedied quickly by appointing a new CFO.[22] *Post_Turn_no_Gap* is insignificant in both columns (2) and (4).

Collectively, the results in Table 7 suggest that CFO gaps are negatively associated with the quality of analyst forecasts, consistent with CFO gaps adversely influencing firms' external communications with financial analysts.

Summary and the Impact of CFO Gaps on Bid–Ask Spreads

Overall, the results of the consequence tests suggest that CFO gaps cause firms' information environment to deteriorate.[23] We observe a lower frequency of management forecasts and less accurate and more dispersed analyst forecasts during CFO gap quarters than during CFO turnover quarters. In contrast, we do not find that CFO gaps negatively affect financial reporting quality. Our findings are consistent with CFOs playing important roles in voluntary disclosure and investor communication. At the same time, we cannot infer that CFOs are not as important in mandatory reporting. CFO gaps are generally short, which may constrain our ability to find

[22] In an additional test (untabulated), we examine how long the significant impact of CFO gaps on analyst forecast errors and dispersions lasts in the post-turnover period. We find that the impact becomes insignificant in the second year after a CFO gap. This suggests that it can take up to two years for the impact of CFO gaps on analyst forecasts to dissipate, possibly because it takes some time for the newly appointed CFO to re-establish communication channels with analysts.

[23] We check for parallel trends. The results (untabulated) confirm that for the PSM sample, the quarterly trends of the information environment measures are not significantly different between CFO gap firms and CFO turnover firms without a gap prior to the CFO turnover, supporting the parallel trend assumption.

meaningful changes in financial reporting practices, given that accounting policies and estimates take a longer time to change.[24] In addition, the accrual-based financial reporting quality measures are likely to be noisy; hence, the inferences based on such measures are tentative.

Lastly, we examine whether the adverse impact of CFO gaps on voluntary disclosure and analyst forecasts extends to firm liquidity as captured by the bid–ask spread. We use similar research designs as the tests of H2. The results are not tabulated for brevity. The coefficient on *Gap* is significantly positive; in contrast, the coefficient on *Turn_no_gap* is insignificant. The F-test comparing *Gap* and *Turn_no_gap* is significant at the 10 percent level. During CFO gap quarters, the bid–ask spreads on average increase by 0.0009 compared with CFO turnover quarters without a gap, a relative increase of 2.5 percent (= 0.0009/0.0355; the sample mean bid–ask spread in the pre-turnover period is 0.0355). When we further control for the concurrent management forecast frequency, analyst forecast error, and analyst forecast dispersion in the bid–ask spread regression, the coefficients on all three variables are significant in the predicted directions (negative, positive, and positive) and the coefficient on *Gap* becomes insignificant, suggesting that the significant increase in the bid–ask spreads during CFO gap quarters is related to management forecast frequency and analyst forecast quality. These tests provide supplementary evidence that CFO gaps, through their influences over voluntary disclosure and investor communication, have a significant impact on firms' market liquidity.

Cross-sectional Results

We examine cross-sectional variations in the impact of CFO gaps on the information environment along the following dimensions: CEO financial expertise, firms' remedial actions, and firms' investment intensity. We split CFO turnovers with a gap in the PSM sample into two

[24] In an additional analysis (untabulated), we confirm that CFO gaps are not significantly associated with changes in accounting policy.

groups based on the conditional variable. As discussed below, the results for management forecasts and analyst forecasts are generally significant for one group and insignificant for the other group, consistent with our expectations. However, the differences in the coefficients on the CFO gap variables for the two groups are usually insignificant, possibly due to the low power of the tests. Hence, we caution readers that the cross-sectional tests are exploratory, and we cannot draw statistical inferences.

CEO Financial Expertise

When the CFO is absent, a CEO with financial expertise can potentially help with financial reporting and disclosures, alleviating the adverse impact of a CFO gap on the information environment. Because data on CEO financial expertise are limited,[25] we build on Custódio and Metzger (2014), who find that the following firm attributes are significantly correlated with the presence of a financial expert CEO: firm size, total investments, asset volatility, firm age, and asset growth. We perform principal component analysis of these attributes and use the first principal component to proxy for a firm's tendency to have a financial expert CEO. We use the sample median of this proxy to split the firms in the PSM sample into those that are more likely and less likely to have a financial expert CEO. *Gap_w_FinExpCEO* (*Gap_wo_FinExpCEO*) is the indicator for CFO gap quarters of firms that are more (less) likely to have a financial expert CEO. The model specification is otherwise the same as in regression (2), and the results are presented in Table 8, Panel A. As shown, the impact of CFO gaps on management forecasts and analyst forecasts is significant for firms that are less likely to have a financial expert CEO but insignificant for firms that are more likely to have a financial expert CEO.[26]

[25] For example, if we use BoardEx to identify financial expert CEOs (defined as those with CPA or CFA qualifications), only approximately 12 percent of CFO gap quarters are associated with a financial expert CEO.
[26] Apart from the CEO, other relevant executives can also share the CFO's responsibilities during a CFO gap. In particular, we examine whether a firm has a chief accounting officer / principal accounting officer (CAO/PAO). We

Firms' Remedial Actions

We examine two types of remedial actions for firms with CFO gaps: the appointment of an interim CFO or the retention of the outgoing CFO as a consultant. Both practices can mitigate the negative effects of CFO gaps on the information environment. We collect information on these remedial actions from 8-Ks. The regression results are presented in Table 8, Panel B. *Gap_w_Remediation* (*Gap_wo_Remediation*) is the indicator for CFO gap quarters of firms with (without) remedial actions. We find that CFO gaps have a significant impact on management forecasts and analyst forecasts if firms do not take remedial actions but the impact is insignificant if firms do.

Firms' Investment Intensity

Earnings projection and communication with external financial intermediaries are likely to be more complicated for firms with more investments. Hence, the effects of CFO gaps on the information environment may be greater for these firms. We use the sample median value of *Invest_Intensity* (i.e., average capital and R&D expenditure, scaled by total assets, over the previous four quarters) to separate the firms in the PSM sample into those with higher and lower investment intensity. *Gap_High_Invest_Intensity* (*Gap_Low_Invest_Intensity*) is the indicator for CFO gap quarters of firms with higher (lower) investment intensity. The results are presented in Table 8, Panel C. As shown, the impact of CFO gaps on management forecasts and analyst forecasts is significant for firms with higher investment intensity but insignificant for firms with lower investment intensity.

Forced vs. Voluntary CFO Turnovers and Addressing Alternative Explanations

find that, as expected, the impact of CFO gaps on management forecasts and analyst forecasts is significant for firms without a CAO/PAO but insignificant for firms with a CAO/PAO (untabulated).

To provide more insights, we split the CFO turnovers with a gap into those where CFOs are likely to have left voluntarily and those where CFOs are likely to have been forced out. The effects of CFO gaps should be less for forced CFO turnovers, because the forced-out CFOs are likely to have been performing sub-par before leaving. We classify a CFO turnover with a gap as forced if it is identified as forced by Audit Analytics or if the 8-K departure reason is termination or due to financial reporting or legal issues.[27] *Gap_w_CFO_ForcedOut* is the indicator for CFO gap quarters of forced turnovers (138 firm-quarters) and *Gap_wo_CFO_ForcedOut* is the indicator for CFO gap quarters of voluntary turnovers (919 firm-quarters). The regression results (untabulated) show that the effects of CFO gaps on management forecasts and analyst forecasts are significant for voluntary turnovers but insignificant for forced turnovers, consistent with our conjecture. Specifically, for *MF*, |*AF_FE*|, and *AF_Disp*, the coefficients on *Gap_w_CFO_ForcedOut* are 0.0047, 0.0002, and -0.0001, and those on *Gap_wo_CFO_ForcedOut* are -0.0290, 0.0011, and 0.0005, respectively.

Lastly, an alternative explanation of our results is that CFO turnovers with a gap may be systematically different from those without a gap. CFO gaps may reflect underlying performance, accounting, and operational issues within the firms, which can affect the results. This explanation is unlikely to drive our results for the following reasons. First, we use the PSM sample and include firm characteristics and firm fixed effects in the regressions. Second, as discussed above, we find stronger results for voluntary CFO turnovers than for forced turnovers. Under the alternative explanation, one would expect stronger results for forced turnovers as there would be more issues

[27] In the PSM sample, 13 percent of CFO turnovers with a gap are forced (11 percent based on Audit Analytics and an additional 2 percent based on 8-K) and 12 percent of CFO turnovers without a gap are forced (10 percent based on Audit Analytics and an additional 2 percent based on 8-K). The percentage of forced turnovers is thus similar between the two types of CFO turnovers in the PSM sample. In the full sample, the percentage of forced turnovers is 15 percent (9 percent) for CFO turnovers with (without) a gap. These statistics further support the notion that PSM helps reduce the differences between the two types of CFO turnovers.

within the firms. Third, we confirm empirically that for the PSM sample, various firm attributes (including board size, accounting and stock performance, investment, financing, cash flow and stock return volatility, and operating cycle) in the current and the next four quarters are similar between CFO gap quarters and CFO turnover quarters (untabulated).

VI. CONCLUSION

This paper examines the determinants of CFO gaps and their effects on firms' information environment. We find that a CFO gap is less likely for firms with succession plans and more growth opportunities and is more likely for firms facing more labor market search frictions and with financial reporting and performance issues. We also document that CFO gaps have a negative impact on firms' information environment related to voluntary disclosure and communication with investors. During CFO gap quarters, firms are less likely to issue management earnings forecasts, and analyst earnings forecasts are less accurate and more dispersed, than during CFO turnover quarters without a gap.

Overall, we provide novel evidence on the determinants and consequences of CFO gaps. The determinant analyses suggest that top executive gaps are systematically affected by firms' internal succession planning, labor market search frictions, growth opportunities, and financial reporting and performance. The consequence analyses suggest that the CFO absence, even if on average only for two to three quarters, significantly and negatively impacts a firm's information environment by affecting voluntary disclosure and communication with information intermediaries. This illuminates the benefits to a firm's information environment of having a CFO, and supports practitioners' concerns that corporate disclosures and communications between a firm and the investment community are compromised when the CFO's seat is left empty.

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APPENDIX

Variable Definitions

Variable	Definition
Determinant analyses – dependent variable	
If_Gap	Indicator for a CFO turnover with a gap; it is equal to one if the period between the old CFO's departure and the new CFO's appointment is more than one month.
Determinant analyses – independent variables	
Internal_Promote	Indicator for an internal CFO promotion; it is equal to one if the new CFO is promoted internally.
Board_Size	Board size, measured as the number of directors on the board in the year.
Board_Interlock	Board interlock, measured as the number of inside directors sitting on the boards of other firms scaled by the total number of directors of the firm in the year.
High_Life	Indicator for high quality of life in the firm's headquarters city; it is equal to one if the life expectancy in the firm's headquarters city is above the sample median (data source: Robert Wood Johnson Foundation's website: https://www.rwjf.org/).
High_NFirm	Indicator for a large number of firms in the firm's headquarters city; it is equal to one if the number of listed firms in the firm's headquarters city in the year is within the top quintile of the sample.
MTB	Market-to-book ratio, measured as the market value divided by the book value of common equity of the firm at quarter-end, averaged over the previous four quarters.
Pos_IndGrowth	Indicator for a positive industry growth; it is equal to one if the total sales of the firm's industry (based on two-digit SIC codes) in the quarter is greater than the same quarter last year.
Terminate	Indicator for a CFO termination; it is equal to one if the old CFO departs due to financial reporting or legal issues, or is terminated for unspecified reasons.
Restate_Ann	Indicator for a restatement announcement; it is equal to one if the firm announces a restatement during the previous four quarters.
ICW	Indicator for internal control weaknesses; it is equal to one if the firm has internal control weaknesses in the previous year.
TAcc	Total accruals, measured as income before extraordinary items minus cash flows from operations for the quarter, deflated by total assets at the beginning of the quarter, and averaged over the previous four quarters.
Low_AF_Rev	Indicator for low expected performance; it is equal to one if the change in analysts' consensus annual earnings forecast from the previous quarter to the current quarter is within the bottom quintile of the sample.
Low_IndAdj_ROA	Indicator for low accounting performance; it is equal to one if the firm's average industry-adjusted return on assets over the previous four quarters is within the bottom quintile of the sample.

Low_IndAdj_Ret	Indicator for low stock performance; it is equal to one if the firm's average industry-adjusted stock return over the previous four quarters is within the bottom quintile of the sample.
Retire	Indicator for a CFO retirement; it is equal to one if the outgoing CFO retires.
Switch	Indicator for a CFO switching position; it is equal to one if the outgoing CFO switches to another position in the same firm.
Pursue	Indicator for a CFO pursuing outside opportunities; it is equal to one if the outgoing CFO joins another company or pursues other interests.
Personal	Indicator for a CFO turnover due to personal reasons; it is equal to one if the outgoing CFO resigns due to health, family, or unspecified personal reasons.
MV	Firm size, measured as the natural logarithm of the market value of the firm's common equity at quarter-end, averaged over the previous four quarters.
NAnalyst	Analyst coverage, measured as the natural logarithm of one plus the number of analysts following the firm in the quarter, averaged over the previous four quarters.
Std_CF	Cash flow volatility, measured as the standard deviation of cash flows from operations during the most recent four quarters, scaled by total assets at the beginning of the quarter.
Std_Ret	Stock return volatility, measured as the standard deviation of daily stock returns in a quarter, averaged over the previous four quarters.
Invest_Intensity	Investment intensity, measured as the mean of capital and R&D expenditure (scaled by total assets at the beginning of the quarter) over the previous four quarters.
Fin_Intensity	External financing intensity, measured as the mean of net equity and debt financing (scaled by total assets at the beginning of the quarter) over the previous four quarters.
Consequence analyses – dependent variables	
Restate	Indicator for a financial misstatement; it is equal to one if the firm-quarter falls within a restated period (based on later restatement announcements).
DA	Discretionary accruals, estimated using a cross-sectional modified Jones model that additionally controls the non-linear effects of firm performance and growth (Dechow et al. 1995; Kothari et al. 2005; Louis and Robinson 2005; Collins et al. 2017). We estimate the cross-sectional model for each two-digit SIC industry and year group and require at least 50 observations for a regression.
$\|DA\|$	Absolute value of discretionary accruals.
$\|DD\_Resid\|$	Absolute value of accrual estimation errors, estimated using a cross-sectional Dechow and Dichev (2002) model. We estimate the cross-sectional model for each two-digit SIC industry and year group and require at least 50 observations for a regression.

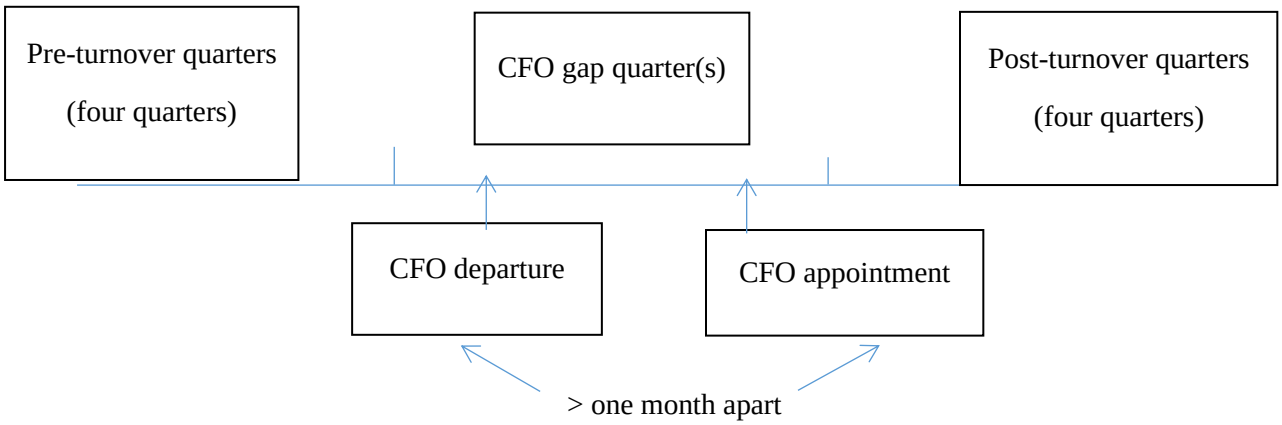
MF	Indicator for management earnings forecasts; it is equal to one if during the quarter, the firm issues one or more earnings forecasts for the quarter.
|*MF_FE*|	Management earnings forecast error, measured as the absolute value of the firm's last management earnings forecast for the quarter issued in the quarter minus actual earnings per share for the quarter, scaled by the stock price at the beginning of the quarter. For range forecasts, we use the midpoint of the range.
|*AF_FE*|	Analyst earnings forecast error; *AF_FE* is measured as analysts' most recent consensus earnings forecast for the quarter issued in the quarter minus actual earnings per share for the quarter, scaled by the stock price at the beginning of the quarter; |*AF_FE*| is the absolute value of *AF_FE*.
AF_Disp	Analyst earnings forecast dispersion, measured as the standard deviation of individual analysts' most recent earnings forecasts for the quarter issued in the quarter, scaled by the stock price at the beginning of the quarter.
Consequence analyses – independent variables	
Gap	Indicator for a CFO gap; it is equal to one for quarters between (and including) the old CFO's departure and the new CFO's appointment if the period between the CFO departure and the CFO appointment is more than one month.
Turn_no_Gap	Indicator for a CFO turnover quarter without a gap; it is equal to one if the firm has a CFO turnover in the quarter but the period between the old CFO's departure and the new CFO's appointment is less than one month.
Post_Gap	Indicator for the four quarters after a CFO turnover with a gap.
Post_Turn_no_Gap	Indicator for the four quarters after a CFO turnover without a gap.
MV	Firm size, measured as the natural logarithm of the market value of the firm's common equity at quarter-end.
MTB	Market-to-book ratio, measured as the market value divided by the book value of common equity of the firm at quarter-end.
NAnalyst	Analyst coverage, measured as the natural logarithm of one plus the number of analysts following the firm during the quarter.
Board_Size	Board size, measured as the number of directors on the board of the firm in the year.
ICW	Indicator for internal control weaknesses; it is equal to one if the firm has internal control material weaknesses in the year.
|*TAcc*|	Absolute value of total accruals, with total accruals measured as income before extraordinary items minus cash flows from operations for the quarter, deflated by total assets at the beginning of the quarter.
ROA	Return on assets, calculated as income before extraordinary items for the quarter divided by total assets at the beginning of the quarter.
Abn_Ret	Abnormal stock return, measured as buy-and-hold market-adjusted return over the quarter.

Op_Cycle	Operating cycle (in years), measured as average accounts receivable divided by sales for the quarter, plus average inventory divided by cost of goods sold for the quarter, then divided by four.
Std_CF	Cash flow volatility, measured as the standard deviation of cash flows from operations during the most recent four quarters, scaled by total assets at the beginning of the quarter.
Std_Ret	Stock return volatility, measured as the standard deviation of daily stock returns in the quarter.
XFin	Net external financing, measured as the sum of net equity financing and net debt financing minus cash dividend paid during the quarter, scaled by total assets at the beginning of the quarter.
Management earnings forecast attributes	
Range	Indicator for a range forecast; it is equal to one if the management earnings forecast is in the form of a range forecast.
Horizon	Forecast horizon, measured as the number of days between the management earnings forecast date and the quarter-end.

FIGURE 1

Timeline of CFO Turnovers with and without a Gap

CFO Turnover with a Gap



CFO Turnover without a Gap

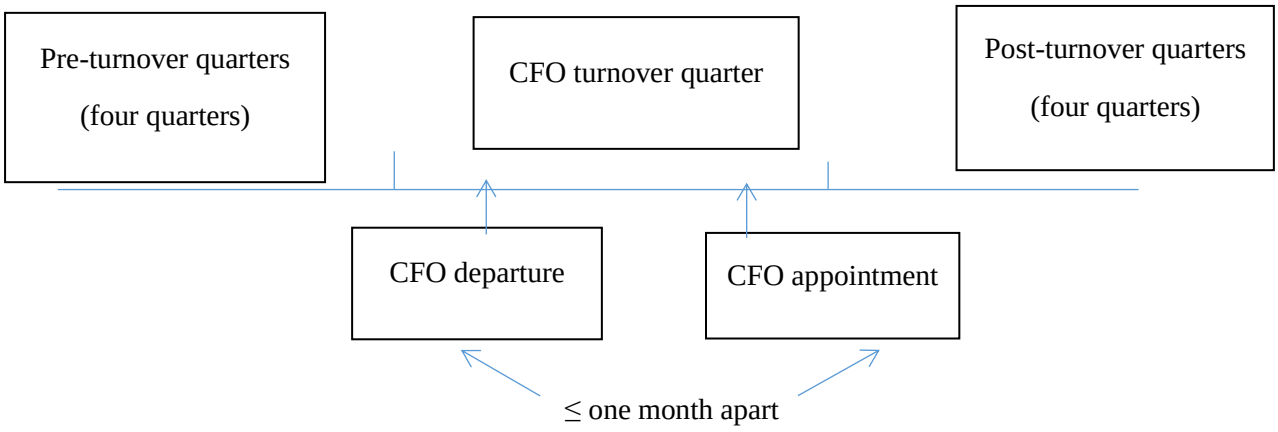


TABLE 1
Sample Selection and Description

Panel A: Sample Selection

		Number of Observations
Initial sample of CFO turnovers for Compustat firms with both the old CFO's departure date and the new CFO's hiring date, 2004-2016*		10,565
Less: Firms not in I/B/E/S	(5,127)	
Less: Firms without Compustat data in the quarter prior to CFO turnovers	(1,755)	
Less: Firms without available data to calculate regression variables for the consequence tests	(1,316)	
Less: Firms without available data to calculate regression variables for the determinant test	(106)	
Less: CFO turnovers with an incorrect date for the old CFO's departure or the new CFO's hiring	(15)	
Final sample of CFO turnovers		2,246
Final sample: the number of firms		1,414

* Note that we exclude CFO departures with CEO turnovers in the same year.

Panel B: CFO Turnovers with and without a Gap

	Number of Unique Turnovers	Number of Unique Firms	Number of Gap Quarters	Number of Turnover Quarters without a Gap
CFO turnovers with a gap	677	545	1,842	-
CFO turnovers without a gap	1,569	1,099	-	1,569
Total	2,246	1,414	1,842	1,569

TABLE 2
Reasons for CFO Turnovers

This table reports the reasons for CFO turnovers as stated in sample firms' 8-Ks. Our full sample includes 2,246 CFO turnovers, including 677 CFO turnovers with a gap and 1,569 CFO turnovers without a gap. We are able to find 8-Ks for 640 CFO turnovers with a gap and 1,451 CFO turnovers without a gap. The sum of subtotals is slightly greater than 100 percent because some 8-Ks include multiple reasons (for example, "health" and "not due to disagreement").

	CFO Turnovers with a Gap		CFO Turnovers without a Gap	
	# of obs	Percentage	# of obs	Percentage
Turnovers that are likely planned				
Retirement	65	10.16%	432	29.77%
Switch to another position in the same firm	53	8.28%	420	28.95%
Subtotal		18.44%		58.72%
Turnovers that are likely unplanned				
Join another company or pursue other interests	219	34.22%	187	12.89%
Health or personal reasons	214	33.44%	284	19.57%
Subtotal		67.66%		32.46%
Potential financial reporting and performance issues				
Termination	13	2.03%	26	1.79%
Financial reporting or legal issues	10	1.56%	8	0.55%
Subtotal		3.59%		2.34%
Not due to disagreement	49	7.66%	40	2.76%
No specific reasons provided	54	8.44%	79	5.44%
Total	640	100.00%	1,451	100.00%

TABLE 3
Determinants of the Likelihood of CFO Gaps

Panel A: Descriptive Statistics and Univariate Analysis

This panel provides descriptive statistics for the determinant analyses of CFO gaps. We use the full sample, including 677 CFO turnovers with a gap and 1,569 CFO turnovers without a gap. *, **, *** indicate that the means and medians of the two sub-samples (i.e., CFO turnovers with a gap and without a gap) are significantly different at the 10 percent, 5 percent, and 1 percent, levels, respectively. See the Appendix for variable definitions.

	Full Sample			CFO Turnovers *with* a Gap			CFO Turnovers *without* a Gap		
Variable	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev
$Internal\_Promote_{t}$	0.431	0.000	0.495	0.244	0.000	0.430	0.512***	1.000***	0.500
$Board\_Size_{t}$	9.129	9.000	2.403	8.805	8.000	2.253	9.268***	9.000***	2.452
$Board\_Interlock_{t}$	0.064	0.000	0.084	0.057	0.000	0.083	0.066**	0.000**	0.084
$High\_Life_{t}$	0.691	1.000	0.462	0.681	1.000	0.466	0.695	1.000	0.461
$High\_NFirm_{t}$	0.208	0.000	0.406	0.186	0.000	0.389	0.218*	0.000*	0.413
$MTB_{t-4\sim t-1}$	3.660	2.082	9.440	3.223	2.052	5.511	3.849*	2.097	10.694
$Pos\_IndGrowth_{t}$	0.722	1.000	0.448	0.708	1.000	0.455	0.728	1.000	0.445
$Terminate_{t}$	0.025	0.000	0.157	0.034	0.000	0.181	0.022	0.000	0.146
$Restate\_Ann_{t-4\sim t-1}$	0.086	0.000	0.281	0.108	0.000	0.310	0.077**	0.000**	0.267
$ICW_{t-4\sim t-1}$	0.068	0.000	0.252	0.100	0.000	0.301	0.054***	0.000***	0.226
$TAcc_{t-4\sim t-1}$	-0.008	-0.001	0.022	-0.005	-0.001	0.017	-0.009***	-0.001***	0.024
$Low\_AF\_Rev_{t}$	0.254	0.000	0.435	0.298	0.000	0.458	0.235***	0.000***	0.424
$Low\_IndAdj\_ROA_{t-4\sim t-1}$	0.189	0.000	0.392	0.214	0.000	0.411	0.178*	0.000**	0.383
$Low\_IndAdj\_Ret_{t-4\sim t-1}$	0.199	0.000	0.400	0.242	0.000	0.429	0.181***	0.000***	0.385
$Retire_{t}$	0.221	0.000	0.415	0.096	0.000	0.295	0.275***	0.000***	0.447
$Switch_{t}$	0.210	0.000	0.408	0.075	0.000	0.264	0.268***	0.000***	0.443
$Pursue_{t}$	0.181	0.000	0.384	0.323	0.000	0.467	0.119***	0.000***	0.324
$Personal_{t}$	0.222	0.000	0.416	0.316	0.000	0.465	0.181***	0.000***	0.385
$MV_{t-4\sim t-1}$	7.325	7.181	1.667	6.993	6.849	1.558	7.469***	7.319***	1.692
$NAnalyst_{t-4\sim t-1}$	2.079	2.048	0.649	2.001	1.981	0.646	2.112***	2.110***	0.648
$Std\_CF_{t-4\sim t-1}$	0.027	0.019	0.028	0.030	0.021	0.029	0.026***	0.018***	0.028
$Std\_Ret_{t-4\sim t-1}$	0.024	0.022	0.012	0.026	0.024	0.012	0.024	0.021***	0.012
$Invest\_Intensity_{t-4\sim t-1}$	0.019	0.012	0.023	0.021	0.014	0.025	0.018***	0.012***	0.023
$Fin\_Intensity_{t-4\sim t-1}$	0.003	0.000	0.030	0.003	-0.000	0.030	0.004	0.000	0.030

TABLE 3 (Cont'd)

Panel B: Regression Analysis

This panel presents the Probit regression results of the likelihood of a CFO gap (*If_Gap*). *Industry Fixed Effects* are based on two-digit SIC codes, and *Year* and *Quarter Fixed Effects* are fiscal year and quarter indicator variables, respectively. Z-statistics (in parentheses) are based on standard errors clustered by industry and by year. *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Variable	Predicted Sign	If_Gap_t
Succession planning:		
$Internal\_Promote_t$	-	-0.7380***
		(-8.90)
Labor market search frictions:		
$Board\_Size_t$	-	-0.0031
		(-0.11)
$Board\_Interlock_t$	-	-0.3592*
		(-1.77)
$High\_Life_t$	-	-0.2508**
		(-2.42)
$High\_NFirm_t$	-	-0.1699**
		(-2.03)
Growth opportunities:		
$MTB_{t-4\sim t-1}$	-	-0.0042**
		(-2.26)
$Pos\_IndGrowth_t$	-	-0.1448*
		(-1.71)
Financial reporting and performance issues:		
$Terminate_t$	+	0.3846**
		(2.31)
$Restate\_Ann_{t-4\sim t-1}$	+	0.1005*
		(1.94)
$ICW_{t-4\sim t-1}$	+	0.1625
		(1.26)
$TAcc_{t-4\sim t-1}$	+	-1.0966
		(-0.61)
$Low\_AF\_Rev_t$	+	-0.0205
		(-0.54)
$Low\_IndAdj\_ROA_{t-4\sim t-1}$	+	-0.0047
		(-0.05)
$Low\_IndAdj\_Ret_{t-4\sim t-1}$	+	-0.0736
		(-1.08)
Planned departures:		
$Retire_t$	-	-0.5709***
		(-3.90)
$Switch_t$	-	-0.6666***
		(-5.75)
Unplanned departures:		
$Pursue_t$	+	0.7074***
		(4.12)

$Personal_t$	+	0.4034***
		(3.49)
Firm attributes:		
$MV_{t-4\sim t-1}$	?	-0.0213
		(-0.49)
$NAnalyst_{t-4\sim t-1}$	?	0.0090
		(0.11)
$Std\_CF_{t-4\sim t-1}$	?	-0.3304
		(-0.41)
$Std\_Ret_{t-4\sim t-1}$	?	-0.0312
		(-0.01)
$Invest\_Intensity_{t-4\sim t-1}$	?	2.8648**
		(2.06)
$Fin\_Intensity_{t-4\sim t-1}$	?	-0.7873
		(-0.77)
Industry, Year, Quarter Fixed Effects		Included
N		2,246
Pseudo R-squared		0.227

TABLE 4
Descriptive Statistics and Correlations of the PSM sample

Panel A: Descriptive Statistics of Key Variables for the PSM Sample

This panel provides descriptive statistics for the PSM (propensity score matching) sample. This sample includes 7,482 firm-quarters surrounding 481 CFO turnovers with a gap (including pre-turnover quarters, CFO gap quarters, and post-turnover quarters) and 481 CFO turnovers without a gap (including pre-turnover quarters, CFO turnover quarters, and post-turnover quarters). Some variables (DA_t, $|DA_t|$, $|DD\_Resid_t|$, $|MF\_FE_t|$, $|AF\_FE_t|$, and AF_Disp_t) are calculated using a smaller sample due to missing values. See the Appendix for variable definitions.

Variable	Mean	Median	Std Dev
$Restate_t$	0.127	0.000	0.333
DA_t	-0.012	-0.012	0.058
$\|DA_t\|$	0.043	0.029	0.043
$\|DD\_Resid_t\|$	0.037	0.020	0.046
MF_t	0.210	0.000	0.407
$\|MF\_FE_t\|$	0.003	0.001	0.005
$\|AF\_FE_t\|$	0.005	0.002	0.009
AF_Disp_t	0.003	0.001	0.005
MV_{t-1}	7.079	6.969	1.602
MTB_{t-1}	3.174	2.098	3.411
$NAnalyst_{t-1}$	2.069	2.079	0.664
$Board\_Size_t$	8.796	9.000	2.236
$Restate_{t-4\sim t-1}$	0.193	0.000	0.395
$ICW_{t-4\sim t-1}$	0.080	0.000	0.271
$\|TAcc_{t-1}\|$	0.028	0.018	0.033
ROA_{t-1}	0.001	0.006	0.038
Abn_Ret_{t-1}	-0.009	-0.014	0.186
Op_Cycle_{t-1}	1.381	0.318	3.385
Std_CF_{t-1}	0.029	0.021	0.027
Std_Ret_{t-1}	0.026	0.023	0.014
$XFin_t$	-0.006	-0.000	0.023

TABLE 4 (Cont'd)

Panel B: Firm Characteristics in the Pre-Turnover, Turnover, and Post-Turnover Periods

This panel compares the firm characteristics between CFO turnovers with a gap and CFO turnovers without a gap, separately for the pre–CFO turnover period (four quarters before the old CFO's departure), turnover period (CFO gap quarters or CFO turnover quarters), and the post–CFO turnover period (four quarters after the new CFO's appointment). *, **, *** indicate the significance of the mean difference between CFO turnovers with and without a gap at the 10 percent, 5 percent, and 1 percent levels, respectively.

	Pre–CFO Turnover Period			CFO Turnover Period			Post–CFO Turnover Period		
	CFO Turnovers *with* a Gap	CFO Turnovers *without* a Gap	Difference	CFO Turnovers *with* a Gap	CFO Turnovers *without* a Gap	Difference	CFO Turnovers *with* a Gap	CFO Turnovers *without* a gap	Difference
Variable	Mean	Mean		Mean	Mean		Mean	Mean	
$Restate_t$	0.159	0.138	0.021	0.120	0.119	0.001	0.102	0.107	-0.005
DA_t	-0.012	-0.012	0.000	-0.013	-0.008	-0.005	-0.015	-0.010	-0.005**
$\|DA_t\|$	0.043	0.041	0.002	0.046	0.043	0.003	0.046	0.042	0.004**
$\|DD\_Resid_t\|$	0.036	0.035	0.001	0.039	0.036	0.003	0.041	0.037	0.004**
MF_t	0.204	0.261	-0.057***	0.159	0.230	-0.071***	0.176	0.225	-0.049***
$\|MF\_FE_t\|$	0.003	0.003	0.000	0.003	0.004	-0.001	0.003	0.004	-0.001
$\|AF\_FE_t\|$	0.005	0.004	0.001	0.006	0.005	0.001***	0.006	0.005	0.001**
AF_Disp_t	0.003	0.003	0.000	0.004	0.003	0.001**	0.003	0.003	0.000
MV_{t-1}	7.090	7.181	-0.091	6.943	7.090	-0.147	7.038	7.086	-0.048
MTB_{t-1}	3.275	3.310	-0.035	2.966	3.172	-0.206	3.301	2.983	0.318**
$NAnalyst_{t-1}$	2.093	2.095	-0.002	2.052	2.059	-0.007	2.054	2.035	0.019
$Board\_Size_t$	8.705	8.814	-0.109	8.825	8.798	0.027	8.810	8.804	0.006
$Restate_{t-4\sim t-1}$	0.231	0.184	0.047***	0.208	0.169	0.039*	0.178	0.171	0.007
$ICW_{t-4\sim t-1}$	0.056	0.049	0.007	0.090	0.082	0.008	0.100	0.082	0.018*
$\|TAcc_{t-1}\|$	0.027	0.028	-0.001	0.028	0.025	0.003*	0.030	0.028	0.002
ROA_{t-1}	0.004	0.002	0.002	-0.000	0.001	-0.001	-0.001	-0.000	-0.001
Abn_Ret_{t-1}	-0.010	-0.009	-0.001	-0.024	-0.021	-0.003	0.007	-0.007	0.014*
Op_Cycle_{t-1}	1.325	1.204	0.121	1.534	1.447	0.087	1.445	1.391	0.054
Std_CF_{t-1}	0.029	0.030	-0.001	0.028	0.029	-0.001	0.029	0.029	0.000
Std_Ret_{t-1}	0.025	0.025	0.000	0.026	0.026	0.000	0.026	0.026	0.000
$XFin_t$	-0.006	-0.005	-0.001	-0.006	-0.005	-0.001	-0.006	-0.006	0.000

TABLE 4 (Cont'd)

Panel C: Correlation Matrix of Regression Variables

This panel presents the Pearson correlation coefficients among the variables used in the regression analysis for the PSM sample. See the Appendix for variable definitions. Boldface indicates significance at the 10 percent level.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Gap_t	1																					
(2) $Turn\_no\_Gap_t$	**-0.11**	1																				
(3) $Restate_t$	-0.01	-0.00	1																			
(4) DA_t	-0.01	0.02	0.00	1																		
(5) $\|DA_t\|$	**0.03**	0.00	-0.01	**-0.09**	1																	
(6) $\|DD\_Resid_t\|$	0.02	-0.01	0.01	**0.02**	**0.31**	1																
(7) MF_t	**-0.05**	0.01	0.01	**-0.06**	**-0.07**	**-0.09**	1															
(8) $\|MF\_FE_t\|$	-0.01	**0.05**	0.01	**0.08**	**0.12**	**0.20**	N/A	1														
(9) $\|AF\_FE_t\|$	**0.04**	-0.02	0.00	**0.11**	**0.15**	**0.24**	**-0.12**	**0.83**	1													
(10) AF_Disp_t	**0.04**	-0.01	-0.00	**0.14**	**0.13**	**0.22**	**-0.12**	**0.54**	**0.61**	1												
(11) MV_{t-1}	**-0.03**	0.00	**-0.05**	**-0.18**	**-0.09**	**-0.20**	**0.06**	**-0.40**	**-0.36**	**-0.33**	1											
(12) MTB_{t-1}	**-0.02**	0.00	**-0.05**	**-0.09**	**0.14**	**0.03**	0.02	**-0.22**	**-0.17**	**-0.16**	**0.25**	1										
(13) $NAnalyst_{t-1}$	-0.01	-0.01	**-0.05**	**-0.13**	**-0.07**	**-0.11**	**0.16**	**-0.26**	**-0.20**	**-0.14**	**0.68**	**0.20**	1									
(14) $Board\_Size_t$	0.00	-0.00	**-0.05**	**-0.03**	**-0.07**	**-0.07**	**-0.08**	**-0.17**	**-0.12**	**-0.11**	**0.50**	**-0.04**	**0.31**	1								
(15) $Restate_{t-4\sim t-1}$	0.02	-0.02	**0.69**	0.00	**-0.03**	-0.00	**0.02**	0.01	0.01	-0.01	**-0.06**	**-0.05**	**-0.07**	**-0.07**	1							
(16) $ICW_{t-4\sim t-1}$	**0.02**	0.01	**0.09**	**0.03**	**0.05**	**0.05**	**-0.03**	**0.07**	**0.07**	**0.06**	**-0.18**	**-0.03**	**-0.15**	**-0.09**	**0.22**	1						
(17) $\|TAcc_{t-1}\|$	0.01	**-0.03**	**0.02**	**0.05**	**0.14**	**0.53**	-0.00	**0.10**	**0.14**	**0.15**	**-0.19**	**0.11**	**-0.06**	**-0.18**	**0.02**	**0.07**	1					
(18) ROA_{t-1}	-0.02	-0.00	-0.02	**-0.25**	**-0.14**	**-0.24**	**0.06**	**-0.34**	**-0.29**	**-0.35**	**0.33**	0.01	**0.18**	**0.13**	-0.00	**-0.07**	**-0.31**	1				
(19) Abn_Ret_{t-1}	**-0.03**	-0.02	-0.01	**-0.02**	-0.02	**-0.05**	0.00	**-0.15**	**-0.14**	**-0.15**	**0.12**	**0.12**	0.01	**0.03**	-0.01	-0.02	**-0.03**	**0.10**	1			
(20) Op_Cycle_{t-1}	0.01	0.00	**-0.05**	**0.03**	**0.06**	0.00	**-0.14**	**0.08**	**0.05**	**0.03**	**-0.09**	**-0.16**	**-0.08**	**0.31**	**-0.07**	**-0.04**	**-0.18**	**-0.02**	-0.00	1		
(21) Std_CF_{t-1}	-0.00	0.00	**0.03**	**0.10**	**0.23**	**0.32**	**-0.04**	**0.12**	**0.14**	**0.17**	**-0.26**	**0.18**	**-0.11**	**-0.23**	**0.03**	**0.08**	**0.41**	**-0.17**	-0.02	**-0.21**	1	
(22) Std_Ret_{t-1}	0.01	0.01	-0.00	**0.10**	**0.11**	**0.19**	**-0.03**	**0.32**	**0.39**	**0.44**	**-0.44**	**-0.06**	**-0.15**	**-0.24**	-0.01	**0.08**	**0.24**	**-0.32**	**-0.07**	**-0.06**	**0.25**	1
(23) $XFin_t$	-0.01	0.01	**0.03**	**0.12**	**0.05**	**0.08**	**-0.06**	**0.15**	**0.13**	**0.15**	**-0.25**	**-0.09**	**-0.16**	**-0.09**	**0.02**	**0.03**	**0.04**	**-0.29**	**0.05**	**0.08**	**0.04**	**0.17**

TABLE 5
The Effect of CFO Gaps on Financial Reporting Quality

This table presents the results for the effect of CFO gaps on financial reporting quality, proxied by financial misstatement (*Restate*), signed discretionary accruals (*DA*), unsigned discretionary accruals (|*DA*|), and the Dechow and Dichev accrual quality measure (|*DD_Resid*|). See the Appendix for variable definitions. *Year* and *Quarter Fixed Effects* are fiscal year and quarter indicator variables, respectively. T-statistics (in parentheses) are based on standard errors clustered by firm and by quarter. *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Variable	CFO Turnovers *with* a Gap (1) $Restate_t$	CFO Turnovers *without* a Gap (2) $Restate_t$	CFO Turnovers *with* a Gap (3) DA_t	CFO Turnovers *without* a Gap (4) DA_t	CFO Turnovers *with* a Gap (5) $\|DA_t\|$	CFO Turnovers *without* a Gap (6) $\|DA_t\|$	CFO Turnovers *with* a Gap (7) $\|DD\_Resid_t\|$	CFO Turnovers *without* a Gap (8) $\|DD\_Resid_t\|$
Gap$_t$	**-0.0131**		**-0.0028**		**0.0031**		**0.0037**	
	(-0.75)		**(-0.80)**		**(1.38)**		**(1.25)**	
Turn_no_Gap$_t$		**0.0087**		**0.0045**		**0.0011**		**0.0008**
		(0.64)		**(1.38)**		**(0.39)**		**(0.28)**
Post_Gap$_t$	-0.0063		-0.0037		0.0046		0.0073*	
	(-0.23)		(-0.93)		(1.62)		(1.70)	
Post_Turn_no_Gap$_t$		0.0169		0.0006		0.0009		0.0023
		(0.92)		(0.21)		(0.44)		(0.89)
MV$_{t-1}$	0.0042	0.0404	-0.0015	-0.0075	-0.0030	-0.0031	-0.0020	0.0026
	(0.15)	(1.52)	(-0.27)	(-1.23)	(-0.66)	(-0.67)	(-0.49)	(0.50)
MTB$_{t-1}$	-0.0079	0.0039	0.0019***	0.0000	0.0010	0.0023***	0.0005	0.0017
	(-1.46)	(0.70)	(2.60)	(0.06)	(1.59)	(3.09)	(0.99)	(1.38)
NAnanlyst$_{t-1}$	0.0401**	0.0256	-0.0045	-0.0023	0.0056**	-0.0012	-0.0003	-0.0001
	(2.15)	(1.48)	(-0.97)	(-0.52)	(2.07)	(-0.37)	(-0.09)	(-0.02)
Board_Size$_t$	0.0055	0.0040	0.0019	0.0002	0.0000	-0.0003	0.0008	0.0014
	(0.58)	(0.53)	(1.14)	(0.12)	(0.04)	(-0.26)	(0.54)	(0.99)
Restate$_{t-4\sim t-1}$	0.2451***	0.2224***	0.0010	-0.0040	-0.0039	-0.0003	-0.0003	0.0075
	(6.52)	(5.01)	(0.28)	(-0.60)	(-1.19)	(-0.07)	(-0.07)	(1.56)
ICW$_{t-4\sim t-1}$	-0.1424***	-0.0764*	-0.0008	-0.0048	0.0028	0.0096*	-0.0001	0.0004
	(-3.04)	(-1.83)	(-0.14)	(-0.75)	(0.83)	(1.87)	(-0.02)	(0.09)
ROA$_t$	0.0879	0.2947*	-0.1938**	-0.0664	-0.1688***	-0.1763***	-0.2791***	-0.3080***
	(0.74)	(1.66)	(-2.33)	(-1.00)	(-3.52)	(-3.34)	(-4.17)	(-3.88)

Abn_Ret$_{t-1}$	0.0087	-0.0334	0.0067	0.0109*	0.0069	-0.0022	-0.0006	-0.0035
	(0.33)	(-1.42)	(1.26)	(1.72)	(1.37)	(-0.56)	(-0.12)	(-0.53)
AF_FE$_{t-1}$	-0.3600	0.1166	-0.0484	-0.1906	-0.1179	-0.0476	-0.1634	-0.0499
	(-0.78)	(0.25)	(-0.38)	(-1.16)	(-1.10)	(-0.50)	(-1.31)	(-0.35)
AF_Disp$_{t-1}$	-0.3741	2.9412*	0.1464	1.0279*	0.3810	0.5303	0.7104*	0.4951
	(-0.24)	(1.66)	(0.44)	(1.86)	(1.16)	(1.52)	(1.87)	(1.54)
Op_Cycle$_{t-1}$	0.0016	0.0021	-0.0006	-0.0128**	0.0013**	0.0004	-0.0007	0.0055
	(0.47)	(0.40)	(-0.49)	(-2.08)	(2.52)	(0.08)	(-0.29)	(0.72)
Std_CF$_{t-1}$	1.6787	-0.4757	0.2304	0.0457	0.0443	-0.0774	-0.4032	-0.6248**
	(1.47)	(-0.81)	(0.95)	(0.20)	(0.23)	(-0.50)	(-1.47)	(-2.15)
Std_Ret$_{t-1}$	-0.4009	-0.2765	-0.0862	0.0473	-0.1228	-0.0503	0.1598	0.1919
	(-0.79)	(-0.59)	(-0.66)	(0.29)	(-1.29)	(-0.51)	(1.49)	(1.43)
XFin$_t$	0.0678	-0.0307	-0.0055	-0.0250	0.0521	-0.0158	0.0817	0.0085
	(0.39)	(-0.16)	(-0.11)	(-0.41)	(1.04)	(-0.34)	(1.30)	(0.17)
Firm, Year, Quarter Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
F-stat: *Gap* = *Turn_no_Gap*	**0.92**		**2.39**		**0.37**		**0.59**	
N	4,058	3,870	3,149	2,991	3,149	2,991	3,157	3,007
Adj. R-squared	0.586	0.687	0.245	0.222	0.334	0.268	0.368	0.316

TABLE 6
The Effect of CFO Gaps on Management Earnings Forecasts

This table presents the results for the effect of CFO gaps on management forecast properties, including management forecast frequency (*MF*) and management forecast error (|*MF_FE*|). See the Appendix for variable definitions. *Year* and *Quarter Fixed Effects* are fiscal year and quarter indicator variables, respectively. T-statistics (in parentheses) are based on standard errors clustered by firm and by quarter. *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Variable	CFO Turnovers *with* a Gap (1) MF_t	CFO Turnovers *without* a Gap (2) MF_t	CFO Turnovers *with* a Gap (3) $\|MF\_FE_t\|$	CFO Turnovers *without* a Gap (4) $\|MF\_FE_t\|$
Gap_t	**-0.0245****		**0.0007***	
	(-2.14)		**(1.79)**	
Turn_no_Gap_t		**-0.0081**		**0.0005**
		(-0.71)		**(1.12)**
Post_Gap_t	-0.0135		0.0008	
	(-0.69)		(1.61)	
Post_Turn_no_Gap_t		0.0018		0.0004
		(0.13)		(1.03)
MF_{t-1}	0.2647***	0.2620***		
	(5.27)	(5.27)		
MV_{t-1}	0.0220	-0.0543**	-0.0048***	-0.0042***
	(1.11)	(-2.47)	(-4.57)	(-3.19)
MTB_{t-1}	-0.0006	0.0072*	0.0004**	0.0002
	(-0.27)	(1.67)	(2.36)	(0.86)
NAnalyst_t	0.0248	0.0769***	-0.0002	0.0002
	(1.28)	(4.18)	(-0.22)	(0.34)
Board_Size_t	-0.0079	0.0011	0.0002	0.0008**
	(-1.38)	(0.12)	(0.80)	(2.36)
$Restate_{t-4\sim t-1}$	-0.0127	-0.0373*	-0.0012*	-0.0015**
	(-0.63)	(-1.73)	(-1.74)	(-2.06)
$ICW_{t-4\sim t-1}$	0.0076	-0.0022	-0.0012	0.0014
	(0.29)	(-0.07)	(-1.28)	(1.03)
$\|TAcc_{t-1}\|$	0.0420	-0.1671	-0.0167*	0.0036
	(0.27)	(-1.25)	(-1.67)	(0.62)
ROA_{t-1}	0.1004	-0.0444	-0.0091	-0.0032
	(0.66)	(-0.29)	(-0.78)	(-0.45)
Abn_Ret_{t-1}	-0.0044	0.0134	-0.0007	-0.0004
	(-0.22)	(0.64)	(-0.53)	(-0.35)
AF_FE_{t-1}	0.4932	0.3873	-0.0940	-0.0823
	(1.23)	(0.91)	(-1.01)	(-1.32)
AF_Disp_{t-1}	0.6607	-1.7282	0.0759	0.1448
	(0.83)	(-1.22)	(0.61)	(1.35)
Op_Cycle_{t-1}	0.0046**	0.0057*	-0.0017	-0.0003
	(2.23)	(1.81)	(-1.42)	(-0.44)
Std_CF_{t-1}	-0.8577	-0.4517	-0.0807	-0.0412
	(-1.42)	(-0.59)	(-0.97)	(-1.26)
Std_Ret_{t-1}	-0.4978	-0.4602	0.0097	0.0014
	(-1.22)	(-0.87)	(0.33)	(0.06)
$XFin_t$	0.1461	0.1954	-0.0013	0.0002

	(0.77)	(0.84)	(-0.20)	(0.03)
Range$_t$			-0.0000	0.0009
			(-0.03)	(1.11)
Horizon$_t$			0.0000	0.0000***
			(0.30)	(2.64)
Firm, Year, Quarter Fixed Effects	Included	Included	Included	Included
F-stat: *Gap = Turn_no_Gap*	**2.89***		**0.09**	
N	4,058	3,870	749	915
Adj. R-squared	0.732	0.739	0.442	0.546

TABLE 7 The Effect of CFO Gaps on Analyst Earnings Forecasts

This table presents the results for the effect of CFO gaps on analyst forecast properties, including analyst forecast error (|*AF_FE*|) and analyst forecast dispersion (*AF_Disp*). See the Appendix for variable definitions. *Year* and *Quarter Fixed Effects* are fiscal year and quarter indicator variables, respectively. T-statistics (in parentheses) are based on standard errors clustered by firm and by quarter. *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

	CFO Turnovers *with* a Gap	CFO Turnovers *without* a Gap	CFO Turnovers *with* a Gap	CFO Turnovers *without* a Gap
Variable	(1)$\|AF\_FE_t\|$	(2)$\|AF\_FE_t\|$	(3) AF_Disp_t	(4) AF_Disp_t
Gap$_t$	**0.0010*** **		**0.0005** **	
	(2.80)		**(2.50)**	
Turn_no_Gap$_t$		**-0.0001**		**0.0000**
		(-0.19)		**(0.01)**
Post_Gap$_t$	0.0014***		0.0003***	
	(4.52)		(2.75)	
Post_Turn_no_Gap$_t$		0.0004		0.0002
		(1.34)		(1.52)
MV$_{t-1}$	-0.0067***	-0.0033***	-0.0027***	-0.0025***
	(-7.21)	(-4.01)	(-5.19)	(-6.38)
MTB$_{t-1}$	0.0001	-0.0001	-0.0000	0.0000
	(1.21)	(-0.75)	(-0.13)	(0.05)
NAnalyst$_{t-1}$	-0.0000	-0.0001	0.0010***	0.0013***
	(-0.01)	(-0.23)	(2.75)	(3.69)
Board_Size$_t$	0.0002	-0.0001	0.0000	-0.0001
	(0.82)	(-0.46)	(0.03)	(-0.50)
Restate$_{t-4\sim t-1}$	0.0002	-0.0004	-0.0001	-0.0004
	(0.52)	(-0.43)	(-0.26)	(-0.87)
ICW$_{t-4\sim t-1}$	-0.0016	-0.0008	-0.0001	0.0000
	(-1.53)	(-1.13)	(-0.28)	(0.04)
$\|TAcc_{t-1}\|$	-0.0107*	-0.0010	-0.0056*	-0.0036
	(-1.80)	(-0.20)	(-1.82)	(-1.06)
ROA$_{t-1}$	0.0031	-0.0125	-0.0056	-0.0095
	(0.37)	(-1.13)	(-1.51)	(-1.35)
Abn_Ret$_{t-1}$	-0.0007	-0.0000	-0.0005	-0.0001
	(-0.55)	(-0.02)	(-0.91)	(-0.26)
AF_FE$_{t-1}$	-0.0892***	-0.0736**	-0.0512***	-0.0600***
	(-2.90)	(-2.19)	(-3.46)	(-4.06)
AF_Disp$_{t-1}$	0.0941	0.0991	0.1558***	0.0558
	(1.30)	(1.22)	(3.79)	(1.04)
Op_Cycle$_{t-1}$	0.0004	0.0002	0.0002	0.0003
	(0.78)	(0.56)	(0.93)	(1.52)
Std_CF$_{t-1}$	-0.0115	0.0052	-0.0164	-0.0099
	(-0.41)	(0.18)	(-1.06)	(-0.61)
Std_Ret$_{t-1}$	0.0394*	0.0707***	0.0382***	0.0411***
	(1.81)	(3.24)	(3.17)	(3.62)
XFin$_t$	0.0079	-0.0061	0.0004	0.0011
	(1.12)	(-0.93)	(0.12)	(0.29)
Firm, Year, Quarter Fixed Effects	Included	Included	Included	Included
F-stat: *Gap* = *Turn_no_Gap*	**5.60****		**4.71****	
N	3,934	3,731	3,934	3,731
Adj. R-squared	0.444	0.445	0.547	0.553

TABLE 8
The Effect of CFO Gaps on the Information Environment: Cross-sectional Analyses

This table presents the cross-sectional analyses of the effect of CFO gaps on the information environment. The model specifications are the same as those used in the main tests. T-statistics (in parentheses) are based on standard errors clustered by firm and by quarter. *, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: The Effect of CFO Gaps Conditional on the Tendency to Have a Financial Expert CEO

This panel presents the results for the effect of CFO gaps conditional on a firm's tendency to have a financial expert CEO. We first perform principal component analysis of the following firm attributes that are correlated with the presence of a financial expert CEO, based on Custódio and Metzger (2014): firm size, total investments, asset volatility, firm age, and asset growth. We then use the first principal component to proxy for a firm's tendency to have a financial expert CEO. We split the firms in the PSM sample into those that are more and those that are less likely to have a financial expert CEO, using the sample median of this proxy. *Gap_w_FinExpCEO* is the indicator for CFO gap quarters of firms that are more likely to have a financial expert CEO (515 firm-quarters) and *Gap_wo_FinExpCEO* is the indicator for CFO gap quarters of firms that are less likely to have a financial expert CEO (542 firm-quarters).

Variable	(1) $Restate_t$	(2) DA_t	(3) $\|DA_t\|$	(4) $\|DD\_Resid_t\|$	(5) MF_t	(6) $\|MF\_FE_t\|$	(7) $\|AF\_FE_t\|$	(8) AF_Disp_t
$Gap\_w\_FinExpCEO_t$	0.0092	0.0015	0.0044	0.0027	-0.0152	0.0005	0.0007*	0.0002
	(0.43)	(0.38)	(1.53)	(0.95)	(-1.14)	(0.91)	(1.67)	(1.20)
$Gap\_wo\_FinExpCEO_t$	-0.0357*	-0.0059	0.0017	0.0046	-0.0339**	0.0008*	0.0012**	0.0007**
	(-1.77)	(-1.33)	(0.70)	(1.36)	(-2.31)	(1.78)	(2.30)	(2.32)
Controls and Firm, Year, Quarter Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
F-stat: *Gap_w_FinExpCEO = Gap_wo_FinExpCEO*	4.20**	2.25	0.50	0.35	2.83*	0.19	0.80	3.35*
N	4,058	3,149	3,149	3,157	4,058	749	3,934	3,934
Adj. R-squared	0.587	0.246	0.335	0.367	0.732	0.441	0.444	0.548

TABLE 8 (Cont'd)

Panel B: The Effect of CFO Gaps Conditional on Firms' Remediation Actions

This panel presents the results for the effect of CFO gaps conditional on whether the firm appoints an interim CFO or retains the outgoing CFO as a consultant (based on 8-Ks). *Gap_w_Remediation* is the indicator for CFO gap quarters of firms that appoint an interim CFO or retain the outgoing CFO as a consultant (329 firm-quarters) and *Gap_wo_Remediation* is the indicator for CFO gap quarters of firms without such appointments (728 firm-quarters).

Variable	(1) $Restate_t$	(2) DA_t	(3) $\|DA_t\|$	(4) $\|DD\_Resid_t\|$	(5) MF_t	(6) $\|MF\_FE_t\|$	(7) $\|AF\_FE_t\|$	(8) AF_Disp_t
$Gap\_w\_Remediation_t$	-0.0085	-0.0022	-0.0010	0.0014	-0.0239	0.0005	0.0006	0.0003
	(-0.34)	(-0.55)	(-0.33)	(0.38)	(-1.43)	(0.62)	(1.34)	(1.16)
$Gap\_wo\_Remediation_t$	-0.0155	-0.0031	0.0045**	0.0048	-0.0248*	0.0008**	0.0011**	0.0005**
	(-0.83)	(-0.78)	(2.24)	(1.53)	(-1.82)	(2.11)	(2.24)	(2.39)
Controls and Firm, Year, Quarter Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
F-stat: *Gap_w_Remediation = Gap_wo_Remediation*	0.08	0.04	2.62	0.78	0.00	0.17	0.51	0.69
N	4,058	3,149	3,149	3,157	4,058	749	3,934	3,934
Adj. R-squared	0.586	0.245	0.335	0.368	0.732	0.441	0.444	0.547

Panel C: The Effect of CFO Gaps Conditional on Investment Intensity

This panel presents the results for the effect of CFO gaps conditional on firms' investment intensity. We use the sample median value of *Invest_Intensity* (i.e., average capital and R&D expenditure, scaled by total assets, over the previous four quarters) to separate the firms in the PSM sample into those with higher investment intensity and those with lower investment intensity. *Gap_High_Invest_Intensity* is the indicator for CFO gap quarters of firms with higher investment intensity (528 firm-quarters) and *Gap_Low_Invest_Intensity* is the indicator for CFO gap quarters of firms with lower investment intensity (529 firm-quarters).

Variable	(1) $Restate_t$	(2) DA_t	(3) $\|DA_t\|$	(4) $\|DD\_Resid_t\|$	(5) MF_t	(6) $\|MF\_FE_t\|$	(7) $\|AF\_FE_t\|$	(8) AF_Disp_t
$Gap\_High\_Invest\_Intensiy_t$	-0.0247	-0.0052	0.0028	0.0043	-0.0309*	0.0009*	0.0013**	0.0006***
	(-1.13)	(-1.16)	(1.10)	(1.33)	(-1.94)	(1.83)	(2.29)	(2.62)
$Gap\_Low\_Invest\_Intensiy_t$	-0.0020	0.0008	0.0035	0.0029	-0.0184	0.0003	0.0006	0.0003
	(-0.10)	(0.18)	(1.26)	(0.91)	(-1.35)	(0.48)	(1.46)	(1.20)
Controls and Firm, Year, Quarter Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
F-stat: *Gap_High_Invest_Intensiy = Gap_Low_Invest_Intensiy*	0.90	1.29	0.07	0.19	0.67	0.62	1.00	1.97
N	4,058	3,149	3,149	3,157	4,058	749	3,934	3,934
Adj. R-squared	0.587	0.246	0.333	0.368	0.732	0.442	0.444	0.548