

# **An Examination of Whether and How Management of the Tax Function Influences the Careers of CFOs**

(Preliminary. Comments Welcome!)

Xiaoli (Shaolee) Tian  
Fisher College of Business  
The Ohio State University

Xue Wang  
Fisher College of Business  
The Ohio State University

Ryan Wilson  
Lundquist College of Business  
University of Oregon

**March 2016**

## **Abstract**

This study examines whether and how management of the tax function effects CFO turnover and promotion decisions. Prior research on the relation between tax avoidance and executive compensation has produced mixed results. We use turnovers and promotions to more directly test what elements of the tax function are considered by the board in evaluating CFOs. Controlling for overall performance and accounting quality, we find less overall tax avoidance and greater levels of tax risk associated with both CFO turnover and forced turnover decisions. Further, we find a significant negative association between tax accrual quality and CFO turnover. Together, our results suggest boards hold CFOs responsible for effective management of multiple dimensions of the tax function. We also find that CFO external promotions are associated with lower cash effective tax rates. Finally, we find the positive association between tax risk and CFO turnover is concentrated only in the period following the KPMG tax shelter scandal of 2003.

*Key Words: Taxes, CFO turnover, CFO promotion*

## **I. Introduction**

The role of Chief Financial Officers (CFO hereafter) has expanded greatly from basic fiscal management and financial reporting to active involvement in operational and strategic development and execution in the past two decades. Meanwhile the trend of accelerating globalization, growing regulation and business complexity, and intensifying competition has made tax issues more complicated and an integral part of the operational and strategic decision making process (CFO Research 2014). As a result, management of the tax function has become a key job responsibility of CFOs. Our objective in this paper is to study whether and how management of the tax function is associated with CFO turnover and promotion decisions.

To date, few studies have examined whether the performance of the tax management function has career consequences for top executives. One notable exception is Gallemore, Maydew, and Thornock (2014) who examine whether 115 cases of identified tax sheltering are associated with subsequent executive turnover. They find no evidence of negative career consequences for executives involved in cases of tax sheltering. In contrast, a recent working paper by Chyz and Gaertner (2015) documents that CEO turnover is more likely in firms that pay a higher tax rate.

Studies examining the career consequences stemming from the performance of the tax function are closely related to research on the association between executives' compensation and the tax function. Phillips (2003) finds no evidence that CEOs with bonuses based on after-tax earnings are more effective at lowering their firms' effective tax rates. Armstrong, Blouin, and Larcker (2012) also find no relation between the level of executive compensation and tax avoidance. Rego and Wilson (2012) find that stock option convexity is related to risky tax

avoidance for both CEOs and CFOs. Finally, Gaertner (2014) finds a negative association between the use of after-tax incentives for CEOs and effective tax rates.

As Engel, Hayes, and Wang (2003) note, most changes in shareholder wealth stem from changes in the value of stock and option holdings. In this sense, part of compensation decisions is delegated to the market. In contrast, the board itself has to make final decisions about executive turnover and promotion. The turnover and promotion decision is likely to reflect a broader set of concerns than executive compensation considerations. Specifically, it is difficult to design compensation contracts to be responsive to dimensions of the tax function such as tax risk and tax accrual quality because these constructs are difficult to measure. However, the board is able to observe management and could form opinions about their performance on these dimensions that factor into career decisions. As such, an examination of whether and how performance measures capturing different dimensions of the tax function influence the careers of CFOs might shed more light on the corporate governance of the tax management function.

Effective tax planning contributes to business success and enhances firm value, thus we argue that there should be a greater probability of CFO departures (promotions) in firms with poor (good) performance of tax management. However, tax planning might entail significant risk. For example, an aggressive tax avoidance strategy usually involves a trade-off between greater tax savings and heightened risk of a challenge by the tax authority. As a result, tax management is multi-dimensional and includes elements such as reducing effective tax rates, managing tax risk, and engaging in sustainable tax planning. Executives also have reputation concerns in deciding whether or not to implement a tax planning strategy (Graham, Hanlon, Shevlin, and Shroff 2013). In addition, CFOs have other job responsibilities such as financial reporting, capital and liquidity management, and regulatory compliance, and they are held

accountable for performance on the heterogeneous aspects of their role (Engel, Gao, and Wang 2015). Therefore, it remains an empirical question whether and how management of the tax function influences CFOs' career outcomes.

We address our research question in the following ways. First, we examine multiple dimensions of the tax function that includes general tax avoidance, tax risk, and tax accrual quality. The mixed evidence from compensation studies raises the question of whether the level of tax avoidance is a significant consideration for boards in evaluating CFOs. Recent tax accounting research investigates various dimensions of firms' tax function. Rather than focusing exclusively on measures of overall tax avoidance, these studies develop and examine measures of tax risk, tax avoidance, and tax accrual quality (e.g. Guenther, Matsunaga, and Williams 2014; Hutchins and Rego 2014; and Choudhary, Koester, and Shevlin 2015). We capitalize on the recent methodology development to measure different dimensions of the tax function and investigate whether and how CFOs' career paths are associated with their management of the tax function.

Second, we relate proxies of tax management function not only to CFO turnover decisions, but also to the promotion decisions of CFOs. One might argue that the termination of CFOs due to ineffective tax management is plausible but overall firm performance and financing decisions might contribute more to CFO turnover. Therefore, the finding of better career prospects as a result of effective tax management would provide more direct evidence on whether boards evaluate CFOs' performance in managing the tax function. Furthermore, we examine whether the management of tax function is associated with either internal or external promotions. If the management of tax function is a transferable skill then we expect those CFOs who are better at managing the tax function are likely to have more outside opportunities.

Alternatively, if managing tax function is only an important task for CFOs but not for other higher level executives, then we will not observe an association of tax management and internal promotions.

Third, we explore the impact of the KPMG tax shelter scandal on the evaluation of tax management performance. The KPMG tax shelter scandal fundamentally changed public accounting companies' provision of tax sheltering products (Brock and Russell 2015). The Senate conducted hearings on the extensive tax shelter activities of KPMG in the fall of 2003. KPMG was forced to enter into a deferred prosecution agreement with the Justice Department in August 2005, under which it admitted criminal wrongdoing and agreed to pay \$456 million in penalties. At the same time, eight former partners were indicted. It is plausible that the KPMG scandal changed the way boards view aggressive tax planning, thus the evaluation of CFOs' tax management performance might change accordingly. We empirically investigate this possibility by comparing the role of tax related performance measures in CFO turnover decisions before and after the KPMG tax shelter scandal.

As mentioned above, the management of tax function typically includes three elements: reducing effective tax rates, managing tax risk, and engaging in sustainable tax planning. Accordingly, we empirically examine these three dimensions of the tax function. We use the five-year GAAP effective tax rate and the five-year cash effective tax rate as two alternative measures of general tax avoidance. Second, we follow Guenther et al (2014), and measure tax risk as the standard deviation of annual cash effective tax rates. Finally, we use as a proxy of sustainable tax planning the Choudhary et al (2015) measure of tax accrual quality based on the extent to which the tax expense maps into tax related cash flows. Controlling for overall firm performance and a number of standard determinants of executive turnover, we examine whether

any of these dimensions of firms' tax function is associated with CFO turnover and promotion decisions. We additionally conduct a similar analysis using CEO turnover as the dependent variable to investigate whether CFOs are uniquely accountable for the various dimensions of the tax management function.<sup>1</sup>

We highlight the following main empirical findings. First, we document a significant association between the level of firms tax avoidance measured by the cash effective tax rate and CFO turnover. Interestingly, we do not observe a significant association between CFO turnover and the five-year GAAP effective tax rate. This result is surprising given past findings that tax director incentives lead to lower GAAP effective tax rates and have a minimal impact on cash effective tax rates (Armstrong et al 2012; Robinson, Sikes, and Weaver 2010). These results hold when we limit our analysis to examine only cases of forced turnover. Meanwhile, we find a significant positive association between tax risk and CFO turnover and forced turnover. This finding suggests that boards do not value risky tax planning and that increased tax risk can actually negatively affect CFO careers. Further we find a significant negative association between tax accrual quality and CFO turnover, supporting the view that boards value sustainable tax planning.

On the other hand, the results of CEO turnover analysis show a weak association between CEO turnover and the cash effective tax rate, but not other dimensions of the tax management function. This result contrasts with our findings in the CFO turnover regressions, suggesting that

---

<sup>1</sup> In untabulated results, we find a weak association of CEO turnover and the five-year cash effective tax rate (p-value=0.08), and none of the other tax performance measures is associated with CEO turnovers. Note that our objective in examining CEO turnover and tax management function is different from that of Chyz and Gaertner (2015), who focus on the effects of general tax avoidance on CEO turnover. We do not have a strong prior concerning the role of CEO in corporate tax policy because it is acknowledged that CEOs are almost never tax experts (Dyreng, Hanlon, and Maydew 2010). However we believe that the tax management function is the key job responsibility of CFOs, and should impact the career outcome of CFOs. Therefore, the CEO turnover test is designed as a falsification test supporting the notion that CFOs rather than CEOs are uniquely accountable for different dimensions of the tax management function. However, we acknowledge that our CEO turnover variable is constructed based on CEO changes, so our results are not directly comparable to that in Chyz and Gaertner (2015).

CFOs are uniquely accountable for multiple dimensions of tax management. Another important feature of this analysis is that it mitigates concerns that the documented associations between the proxies of tax management function and CFO turnover may be driven by other factors such as poor operating performance. If the departure of CFO reflects the overall poor performance, then one would not expect the results on CEOs and CFOs to be significantly different.

Second, we find no association between any dimension of the tax function and internal CFO promotions when we examine CFO promotions.<sup>2</sup> However, we do find that external promotions of CFOs are associated with lower five-year cash effective tax rates. This finding is consistent with tax avoidance being a skill that is applicable across firms and general tax planning strategies developed for one firm can often add value if implemented at a new firm.

Finally, we find some evidence that the KPMG scandal has changed the boards' perception of CFO tax management effectiveness. We estimate CFO turnover regressions in the pre- and post-KPMG scandal periods separately. We find that cash effective tax rates and tax accrual quality are significantly associated with CFO turnover across both periods in the same fashion as in the overall sample period. However, the significant positive association between tax risk and CFO turnover only exists in the post-KPMG period, and the difference across the before and after periods is statistically significant. We interpret the collective results as suggesting that boards have a preference for more prudent tax strategy and do not value aggressive tax avoidance particularly in the aftermath of the KPMG scandal. Our evidence also demonstrates that government interventions of tax sheltering practices might have a significant impact on firms' tax risk management strategies.

---

<sup>2</sup> We define external promotions as when the firm's CFO is hired as the CFO or CEO of another public company, and internal promotion as when the firm's CFO moves up to be CEO, president, COO or chairman within the same company.

Our analysis contributes to extant research on the importance of the tax function for the careers of top executives. We examine CFO turnovers and promotions because CFOs are the top executives directly responsible for management of the tax function. Contemporaneous studies on career consequences of top executives stemming from the tax function usually focus on a single measure of tax management (Gallemore et al 2014, Chyz and Gaertner 2015). Our study is distinct from these studies in that we broaden the scope of analysis by considering multiple dimensions the tax management function. Our results indicate that tax avoidance measured by the cash effective tax rate is important in both the turnover and promotion settings. Our finding that boards focus on the cash rather than GAAP effective tax rate indicates boards are not myopically focused on how the tax expense affects GAAP income. We also provide the first evidence on how boards value tax risk and sustainable tax planning. Specifically, CFO turnover is positively associated with increased tax risk, but negatively associated with high tax accrual quality, suggesting that boards seem to take a positive view of more sustainable and less risky tax strategy.

## **II. Hypothesis Development**

### **2.1 Related Research**

Our study is related to several strands of research. First, our research is related to the large literature that analyzes top management turnover beginning with Coughlan and Schmidt (1985) and Warner, Watts and Wruck (1988). The general conclusion from this literature is that CEO turnover increases with poor company performance. Mian (2001) focuses on CFOs, and documents that CFO turnover is also preceded by poor operating performance. Collectively, these studies suggest that management turnover is disciplinary in nature. Existing research

presents mixed results on whether financial reporting failures lead to management turnover. Early studies do not document a positive relation between financial reporting problems and management turnover (Beneish, 1999; Agrawal, Jaffe and Karpoff, 1999). However, more recent empirical evidence suggests a significant association between management turnover and financial reporting failures captured by accounting restatements and internal control weaknesses (Desai, Hogan and Wilkins, 2006; Hennes, Leone, and Miller, 2008; and Li, Sun, and Ettredge, 2010). There are also several contemporaneous studies that expand the scope of the investigation to examine whether CFO turnover is related to their performance in other roles within the company such as capital and liquidity management, voluntary disclosure, and regulatory compliance (Brochet, Faurel, and McVay 2011, Engel et al 2015). We contribute to this line of research by investigating whether and how CFO career outcomes are associated with their management of the tax function, a key job responsibility of CFOs that has not received research attention until recently. In contrast to previous studies on CFO career consequences that focus only on CFO turnovers, we additionally examine CFO promotion decisions. The evidence of better career prospects as a result of effective tax management would provide more direct evidence on whether boards evaluate CFOs' performance in tax management function.

Second, a growing body of research is interested in the determinants and consequences of corporate tax planning, with a focus on tax avoidance (see Hanlon and Heitzman 2010 for a broad review of the literature). Most studies in this area have adopted the general tax avoidance definition in Dyreng, Hanlon, and Maydew (2008), which broadly includes anything that reduces the firm's taxes relative to its pretax accounting income. In practice, tax avoidance strategies range from benign activities such as investment in municipal bonds to the extreme case of tax sheltering that could be deemed illegal by the IRS.

Early research in this area has identified firm characteristics such as firm size, foreign operations, and other factors as significant determinants of tax avoidance (Hanlon and Heitzman 2010). Recent studies, however, focus on the role of managerial incentives and executive individual effects in tax avoidance. Phillips (2003) finds no evidence that CEOs with bonuses based on after-tax earnings are more effective at lowering their firms' effective tax rates using private survey data. Armstrong et al (2012) also find no relation between the level of executive compensation and tax avoidance. In contrast, Gaertner (2014) documents that the use of after-tax accounting earnings in CEO bonus compensation is associated with lower effective tax rates using more recent data from ExecuComp. Focusing on stock options, Rego and Wilson (2012) find stock option convexity is related to risky tax avoidance for both CEOs and CFOs. While the evidence regarding the incentives from executive compensation is mixed, it suggests that executives might play an important role in forming and executing a company's tax strategy. Consistent with this conjecture, Dyreng et al (2010) document robust evidence that individual executives have incremental effects on their firms' tax avoidance after controlling for firm characteristics, and the effects are both economically and statistically significant.

Our study extends research on the effects of managerial incentives and executives on tax avoidance by examining incentives from CFO turnover and promotion decisions, which likely reflect a broader set of concerns than executive compensation considerations. Thus, we are able to shed more light on how boards value different dimensions of the tax function, in particular on those more difficult to measure aspects such as tax risk and tax accrual quality.

Finally, there is an emerging empirical literature attempting to assess the economic consequences of corporate tax avoidance. Early research in this area focuses on shareholders, and finds mixed evidence. For example, Desai and Dharmapala (2009) document that the

average effect of tax avoidance on firm value is not significant; Hanlon and Slemrod (2009) find a negative market reactions to public revelation of tax shelters. A number of research papers document that corporate tax avoidance has implications for information risk (Balakrishnan et al 2012, Hope, Ma, and Thomas 2013), agency risk (Desai and Dharmapala 2009, Chen, Chen, Cheng, and Shevlin 2010, Chyz, Leung, Li, and Rui 2013, Khurana and Moser 2013), audit risk (Donohoe and Knechel 2014), and IRS audit risk (Mills 1998, Mills and Sansing 2000). Given the risk relevance of tax avoidance, the asymmetric payoff function of debt-holders might make them especially sensitive to the risk associated with tax avoidance. Recent research has also started to explore the effects of tax avoidance on debt contracting and credit rating processes. Bonsall, Koharki, and Watson (2015) document that tax avoidance is associated with rating agency disagreements. On the other hand, the empirical evidence concerning debt contracting is more mixed: some studies find that firms with greater tax avoidance tend to have increased cost of debt capital (see Hasan, Hoi, Wu, and Zhang 2014 for bank loans, Shevlin, Urcan, and Vasvari 2013 for public bonds), but Kim, Li and Li (2010) document that firms with a higher level of tax avoidance are associated with lower bank loan spreads. Our paper is closely related to extant research examining career consequences of top executives stemming from the tax function (Gallemore et al 2014, Chyz and Gaertner 2015). We contribute to this line of research by focusing on CFOs who are the top executives directly responsible for the tax management function, and widening the scope of analysis to consider multiple dimensions of the tax management function. Importantly, we provide the first evidence on how boards value tax risk and sustainable tax planning.

## **2.2 Empirical Predictions**

The objective of our paper is to investigate whether and how management of the tax function has career consequences for CFOs. In the past two decades, the role of CFOs has expanded greatly from traditional compliance, financial reporting, and cost control to active involvement in operational and strategic development and execution. Tax is a complicated function based on laws and regulation across multiple countries and regions, and is an integral part of the operational and strategic decision making process (CFO Research 2014). As such, CFOs are well suited to integrate tax considerations into operational and strategic decisions, and are directly in charge of the tax management function of the company.<sup>3</sup>

Effective tax planning creates value for the company. A recent survey of finance executives reports that the most valuable benefits of improving the tax function are lowering income tax rates (named by 47% of respondents), followed by better business decision making (30% of respondents, see CFO Research 2014). Lowering effective tax rates can generate tax savings, an important source of capital to run the business and invest in expansion projects. Moreover, given that tax expense is one of the largest expense items for most public companies, lowering effective tax rates can directly increase earnings per share. At the same time, tax issues affect every aspect of the business operations, and companies could benefit by considering the tax consequences in decision making across a range of business activities.

Therefore, we argue that there should be a greater probability of CFO departures in firms with poor management of the tax function. However, tax planning can entail significant risk. An aggressive tax avoidance strategy usually involves a trade-off between greater tax savings and

---

<sup>3</sup> Anecdotal evidence is consistent with CFOs being influential on tax planning. Cited also in Dyreng et al (2010) – David Bullington, Wal-Mart's vice president for tax policy, testified that he began feeling pressure to lower the company's effective tax rate after the current chief financial officer, Thomas Schoewe, was hired in 2000. Mr. Schoewe was familiar with “some very sophisticated and aggressive tax planning,” Mr. Bullington said, according to a transcript of the deposition. “And he ride herds on us all the time that we have the world's highest tax rate of any major company.”

heightened tax risk. In particular, prior research on the risk consequences of tax avoidance documents the following results: First, a higher level of tax avoidance is associated with reduced information quality due to the opaque nature of tax avoidance activities (Balakrishnan et al 2012, Hope et al 2013; Chen et al. 2015); second, a higher level of risky tax avoidance is also associated with increased audit risk and IRS audit risk (Donohoe and Knechel 2014, Mills 1998, Mills and Sansing 2000). Thus, tax management is multi-dimensional including reducing effective tax rates, managing tax risk, and engaging in sustainable tax planning. Related, executives also have reputation concerns in deciding whether or not to implement a tax planning strategy (Graham et al 2013).

Choudhary et al. (2015) measure tax accrual quality as the extent to which the income tax accrual maps into income-tax related cash flows. They find that lower tax accrual quality is associated with more tax related internal control weaknesses and tax related restatements. Accounting for income taxes is one of the most complicated elements of financial accounting and involves significant managerial discretion. In addition to examining both tax avoidance and tax risk, we also test whether lower tax accrual quality is associated with greater turnover controlling for other measures of non-tax accrual quality.

CFOs have numerous other job responsibilities such as financial reporting, capital and liquidity management, and regulatory compliance, and they are held accountable for performance on the heterogeneous aspects of their role (Engel et al 2015). Therefore, it remains an empirical question whether management of the tax function influences CFOs career outcomes. In our empirical inquiry, we examine whether CFO turnover is associated with performance in multiple dimensions of the tax function that includes general tax avoidance, tax risk, and tax accrual quality.

Next, we explore the impact of the KPMG tax shelter scandal on the evaluation of tax management performance. Starting from the late 1990s, KPMG invested significant capital in developing and selling aggressive tax shelter products (Rostain 2006). These products were designed to help wealthy individuals and large companies to minimize income taxes paid. The Senate conducted hearings on the extensive tax shelter activities of KPMG in the fall of 2003.<sup>4</sup> KPMG was forced to enter into a deferred prosecution agreement with the Justice Department in August 2005, under which it admitted criminal wrongdoing and agreed to pay \$456 million in penalties. At the same time, eight former partners were indicted.

The KPMG tax shelter scandal is considered a landscape changing event in public accounting companies' provision of tax sheltering products (Brock and Russell 2015). In the period before the scandal, the Big Four devoted significant resources in designing novel tax avoidance schemes – generic tax shelter products – and selling them to large corporations and wealthy individuals. After the scandal, the Big Four are no longer developing and promoting generic tax shelters. For example, KPMG stated that they introduced stricter internal due diligence policies for tax advice service.

The high profile nature of the KPMG tax shelter scandal likely changed the way boards and managers view tax risk. More recent years following the KPMG scandal have also witnessed increased attention on tax risk and tax risk management. Boards of directors of public companies have recognized the importance of tax risk management and become more actively involved in monitoring tax risk management (PricewaterhouseCoopers 2004). We empirically investigate this possibility by comparing the role of tax related performance measures in CFO turnover decisions before and after the exposure of the KPMG tax shelter scandal. If boards

---

<sup>4</sup> Michael Hamersley, a tax lawyer who worked at KPMG for four years, was the whistle blower who finally exposed KPMG's shelter activities in 2003 (Rostain 2006).

have a preference for more prudent tax strategy and do not value risky tax planning particularly in the aftermath of the KPMG scandal, we expect tax management proxies capturing tax risk to be more positively related to CFO turnover likelihood in the post-KPMG period relative to the pre-KPMG period.

Finally, we investigate whether CFO promotion decisions are associated with performance in the tax management function. The focus on CFOs provides a rare opportunity to study whether CFOs are rewarded with better career outcomes in the form of promotions for effective tax management. Given that effective tax planning enhances firm value, we argue that there should be a greater probability of CFO promotion in firms with good performance of tax management. Furthermore, we separately examine internal and external promotions. If the management of tax function is a transferable skill, then we expect those CFOs who are better at managing their tax function to have more outside opportunities. Alternatively, if managing tax function is only an important task for CFOs but not for other higher level executives, then we will not observe an association of tax management and internal promotions.

### **III. Data and Sample**

Our sample consists of available observations from ExecuComp, Compustat, and CRSP. Our tax variables are measured over a five-year period, and we require that firms have non-negative cumulative pre-tax income over the five-year period. If a firm has a negative cumulative pre-tax income over the past five years, then there is not much a CFO could do to manage the firm's tax functions.<sup>5</sup>

---

<sup>5</sup> We impose this restriction because it is hard to know what a CFO could do in terms of manage their taxes when their firms have been incurring losses for the past five years. Our results are robust to remove this restriction.

Our forced CFO turnover and promotion samples are hand collected. First, we use the ExecuComp database to construct the CFO turnover sample from 1998 to 2008.<sup>6</sup> For the sample years before 2006, an executive is identified as a CFO if the annual title variable in ExecuComp indicates that the executive has financial responsibility such as chief financial officer or vice president of finance (Engel et al. 2014). For the sample years after 2006, we use the “CFOANN” variable to identify whether an executive is a CFO. For a firm-year observation, if the CFO for the current year is different than the CFO from the previous year then we determine a turnover has occurred. Using this as our base sample, we collect CFOs’ employment history from annual reports, proxy statements, and *Nexus* and *Factiva*. Particularly, we collect the reasons for the turnover, and identify whether a turnover is forced or due to promotion.

Table 1 Panel A reports the reasons of the 827 forced turnover events in the final sample. We categorize turnovers classified as “pursue other possibilities” (181 events), “pursue other interests” (137 events), “family or personal reasons” (39 events), “scandal” (21 events), “fired” (12 events) and “no reason” (74 events), and “retirement before age 62” (363 events).<sup>7</sup> To examine whether CFO turnover and forced turnover are related to the management of tax functions, we use firm-years with no CFO turnover as our control group. There are 8,725 firm-year observations with no changes in CFOs. We refer to this as the no CFO turnover sample.

For turnovers related to promotions, we further define external promotion as when the firm’s CFO is hired as the CFO or CEO of another public company, and internal promotion as when the firm’s CFO moves up to be CEO, president, COO or chairman within the same

---

<sup>6</sup> Because we need an extra year to determine whether a turnover has occurred or not, our turnover sample covers 1998 to 2007.

<sup>7</sup> Prior studies (Warner et al., 1988; DeFond and Park, 1999, Engel et al. 2014) indicate that forced turnovers are often presented as retirements in press releases. Thus, for CFO turnover that are identified as retirement before 62, and for CFO turnover that we cannot find any news but retire before 62, we categorize them as forced turnovers.

company. Our promotion sample consists of 179 internal promotions and 307 external promotions.

Table 2 present summary statistics for the forced turnover sample (Panel A) and the control sample (Panel B). The summary statistics include each of the tax performance metrics and control variables used in our multivariate analyses. The table shows that several tax performance metrics are significantly different across the two samples. Specifically, the long-term cash effective tax rate and tax risk are significantly higher for the forced turnover sample relative to the control sample. Further, the forced turnover firms have significantly lower earnings and returns performance than that of the no CFO turnover firms. Other notable and significant differences between the two samples exist for CFO tenure and CFO age -- the mean and median values of each of these variables are significantly higher for the forced turnover sample. The results from the descriptive statistics suggest that poor tax planning is positively associated with forced CFO turnover.

## IV. Research Design and Empirical Results

### 4.1 CFO Turnover and Management of the Tax Function

Our research designs are drawn from both the turnover literature and the tax literature. Our first test examines whether different aspects of tax performance measures are associated with CFO turnovers.

$$\begin{aligned}
 Prob(\text{Turn/Forced}=1) = & a_0 + a_1 \text{CASH\_ETR5}_{t-1} + a_2 \text{ETR5}_{t-1} + a_3 \text{Tax\_AQ}_{t-1} + a_4 \text{AQ}_{t-1} + \\
 & a_5 \text{Tax\_risk}_{t-1} + a_6 \text{MTB}_{t-1} + a_7 \text{Size}_{t-1} + a_8 \text{ROA}_{t-1} + a_9 \text{Leverage}_{t-1} + a_{10} \text{SG\&A}_{t-1} + a_{11} \\
 & \text{FOR\_EARN}_{t-1} + a_{12} \text{Age}_t + a_{12} \text{Tenure}_t + a_{12} \text{Ret}_{t-1} + a_{12} \text{Loss}_{t-1} + \varepsilon \quad (1)
 \end{aligned}$$

We run probit regressions for both CFO turnover and forced turnover. Turn is an indicator variable equals to one when there is a CFO turnover event, and zero if there is no CFO turnover.

Similarly, Forced equals to one if the CFO is forced to leave the company, and zero if there is no CFO turnover.

Our variables of interests are performance measures capturing different aspects of tax management function. We capitalize on the recent methodology development in the tax literature to measure different dimensions of the tax function including general tax avoidance, tax risk, and tax accrual quality. First, we use the five-year GAAP effective tax rate (*ETR5*) and the five-year cash effective tax rate (*CASH\_ETR5*) as two alternative measures of general tax avoidance (see, Hanlon and Heitzman 2010, for example). *ETR5* is defined as total income taxes divided by pretax income over the past five years, and *CASH\_ETR5* is defined as cash taxes paid divided by pretax income minus special items over the past five years. Second, we follow Guenther et al (2014), and measure tax risk as the standard deviation of annual cash effective tax rates (*Tax\_Risk*). Specifically, the indicator variable *Tax\_Risk* equals to one for observations with the standard deviation of annual cash ETR over the past five years in the top third of the distribution. Finally, we use as a proxy of sustainable tax planning the Choudhary et al (2015) measure of tax accrual quality based on the extent to which the tax expense maps into tax related cash flows (*Tax\_AQ*). *Tax\_AQ* is calculated as the standard deviation of the residuals from firm-specific estimates of tax accrual estimation equation over the past five years.

We also control for the impact of firm financial performance on turnover with ROA and Ret. Return on assets, ROA, is measured as operating income divided by total assets, and Ret is the annual buy-and-hold stock return, both measured for year t-1. Other control variables include firm size (Size), measured as the natural log of total assets; leverage (Leverage), measured as the ratio of total debt to total assets; the number of years the outgoing CFO has been in office (Tenure) and the age of the outgoing CFO (Age); *SG&A* measured as selling, general, and

administrative expenditures scaled by total assets; *FOR\_EARN* measured as total foreign earnings scaled by total assets; *AQ* which is accrual quality; and *Loss* measured as the number of occurrence of negative pre-tax income for the past five years.

The results for CFO turnover are reported in Table 3 and the results for forced CFO turnover are reported in Table 4. Out of the four proxies of tax management functions, *CASH\_ETR5* is positive and significantly associated with both CFO turnover and forced CFO turnover. The results indicate that average cash tax payment is positively associated with the likelihood of CFO turnover. In contrast, we do not observe a significant association between *ETR5* and CFO turnover. This result is surprising because prior studies find that tax director incentives lead to lower GAAP effective tax rates, and have a minimal impact on cash effective tax rates (Armstrong et al 2012; Robinson, Sikes, and Weaver 2010). These results hold when we limit our analysis to examine only cases of forced turnover. The overall finding that boards focus on the cash rather than GAAP effective tax rate indicates boards are not myopically focused on how the tax expense affects GAAP income.

On the other hand, we find that *Tax\_Risk* is positive and significantly associated with both CFO turnover and forced CFO turnover, suggesting that increased tax risk can negatively affect CFO careers. Further, there is a significant positive association between *Tax\_AQ* and CFO turnover, supporting the notion that board value sustainable tax planning. When we limit our analysis to examine forced CFO turnover, we continue to find a positive coefficient on *Tax\_AQ*, but it is no longer statistically significant.

The results on the control variables are largely consistent with those in the prior literature. We find that CFO turnover and forced turnover is more likely when firms have poor

stock and earnings performance (*Ret* and *ROA*) and high growth opportunity (*MTB*), and when the outgoing CFO is older and with longer tenure at the firm (*Age* and *Tenure*).

We conduct a similar analysis using CEO turnover as the dependent variable. We do not have a strong prior concerning the role of CEO in corporate tax policy because it is acknowledged that CEOs are almost never tax experts (Dyreng, Hanlon, and Maydew 2010). In contrast, we believe that the tax management function is the key job responsibility of CFOs, and should impact the career outcome of CFOs. Therefore, the CEO turnover test is designed as a falsification test supporting the notion that CFOs rather than CEOs are uniquely accountable for different dimensions of the tax management function. The results of CEO turnover analysis are not tabulated for brevity, but are available upon request. We find a weak association between CEO turnover and the cash effective tax rate ( $p\text{-value}=0.08$ ), but not other dimensions of the tax management function. This result contrasts with our findings in the CFO turnover regressions, suggesting that CFOs are uniquely accountable for multiple dimensions of tax management. Another important feature of this analysis is that it mitigates concerns that the documented associations between the proxies of tax management function and CFO turnover may be driven by other factors such as poor operating performance. If the departure of CFO reflects the overall poor performance, then one would not expect the results on CEOs and CFOs to be significantly different.

#### **4.2 The Impact of the KPMG Tax Shelter Scandal**

Next, we investigate the impact of KPMG tax shelter scandal on the evaluation of tax management performance. The KPMG tax shelter frauds were exposed at the beginning of 2003. This revelation brought aggressive tax planning and its associated tax risk under the spot light. In

our empirical test, we run equation (1) separately for sample periods before and after KPMG scandal. The results for CFO turnover are reported in Table 5, and the results for forced turnovers are reported in Table 6. Panel A of both tables report the regression coefficients and p-values for the two periods, while Panel B of both tables report the p-values for the comparison of tax performance metrics before and after the KPMG scandal. *CASH\_ETR5* is significant for both periods in Panel A of both tables. Furthermore, the difference in the coefficient of *CASH\_ETR5* is not significantly different across the pre- and post-revelation of KPMG scandal periods for both regular and forced CFO turnovers. This result suggests that cash tax management is an important consideration in CFO retention and turnover decisions that are not altered by the exposure of the KPMG tax scandal.

Similar to our finding for the overall sample period, we find that *ETR5* is not significant in any periods for either regular or forced turnovers, and it is not significantly different before and after the KPMG scandal. On the other hand, *Tax\_AQ* is significant for both periods when the dependent variable is CFO turnover, but it is not significant when the dependent variable is CFO forced turnover, again consistent with our finding for the overall sample period. However, we note that the results on *Tax\_Risk* show a difference across the pre- and post-KPMG periods. For both the CFO turnover and forced turnover, *Tax\_Risk* is not statistically significant in the period before the KPMG scandal but it is positive and statistically significant in the period after the KPMG scandal. Furthermore, the difference in the coefficient *Tax\_Risk* across the pre- and post-periods is significantly different. This evidence suggests that boards have a preference for more prudent tax strategy and do not value aggressive tax avoidance particularly in the aftermath of the KPMG scandal.

### 4.3 CFO Promotion and Management of the Tax Function

In our last set of tests, we investigate whether CFO promotions are associated with their performance in the tax management function. We separately examine internal and external promotions using the following specifications:

$$\text{Prob}(\text{Internal /external promotion}=1) = a_0 + a_1 \text{CASH\_ETR5}_{t-1} + a_2 \text{ETR5}_{t-1} + a_3 \text{Tax\_AQ}_{t-1} + a_4 \text{AQ}_{t-1} + a_5 \text{Tax\_risk}_{t-1} + a_6 \text{MTB}_{t-1} + a_7 \text{Size}_{t-1} + a_8 \text{ROA}_{t-1} + a_9 \text{Leverage}_{t-1} + a_{10} \text{SG\&A}_{t-1} + a_{11} \text{FOR\_EARN}_{t-1} + a_{12} \text{Age}_t + a_{12} \text{Tenure}_t + a_{12} \text{Ret}_{t-1} + a_{12} \text{Loss}_{t-1} + \varepsilon \quad (2)$$

We define internal promotion as an indicator variable that equals to one when a CFO is promoted internally to be CEO/ or president/ or COO/ or chairman of the company. External promotion is an indicator equals to one when a CFO becomes the CFO / or CEO of another public company. All testing variables and controls variables in equation (2) are the same as equation (1).

We run probit regressions for both internal and external promotions, and the results are reported in Table 7. *CASH\_ETR5* is negative and significantly associated with external promotion, but not with internal promotion. This result indicates that external promotions of CFOs are associated with lower five-year cash effective tax rates, suggesting that cash tax planning could be a transferable skill. CFOs who are good at managing cash tax rates are more likely to have better outside career opportunities. *Tax\_Risk* is positive and significantly associated with both internal and external promotions. These results are unexpected.

## V. Conclusion

In this study we use turnovers and promotions as a more powerful setting to examine whether and how boards factor management of the tax function into their evaluation of the CFO. While both outcomes are relatively extreme, they have the advantage of being a direct reflection

of the board's assessment of the CFOs' performance rather than a change in the value of CFO compensation which is heavily influenced by changes in the firm's stock price. In addition, turnover and promotion decisions can reflect elements of management of the tax function, such as tax risk and tax accrual quality that may be difficult to contract on directly.

We document a significant negative association between firms' cash effective tax rates and the likelihood of CFO turnover and forced turnover. This finding suggests boards do consider CFOs ability to minimize the tax burden associated with taxes as part of their performance assessment. However, we also find that CFO turnover and forced turnover is increasing in the level of tax risk. In other words, boards appear to penalize CFOs if the firm is engaged in more risky tax avoidance activity. This result suggests CFOs cannot myopically focus on tax minimization as the only important part of managing the tax function. Interestingly, we find tax risk is only positively associated with CFO turnover in the period after the KPMG tax shelter scandal of 2003. This finding suggests boards may have changed their view of tax risk following this high profile scandal that crystalized the potential reputational costs associated with overly aggressive tax planning. We further find some evidence that boards consider tax accrual quality as another important element of the CFOs' management of the tax function. After controlling for the quality of pretax accruals, we find lower quality tax accruals are incrementally associated with CFO turnover. Finally, we examine whether the tax avoidance, tax risk, and tax accrual quality measures are associated with the likelihood of CFO internal and external promotion. We find that only increased tax avoidance is significantly associated with external CFO promotions. This result is consistent with management of the tax function being a skill that can translate across firms.

## References

- Agrawal, A., Jaffe, J., Karpoff, J.M., 1999. Management turnover and corporate governance changes following the revelation of criminal fraud. *Journal of Law and Economics* 62, 309-342.
- Armstrong, C., Blouin, J., Larcker, D., 2012. The incentives for tax planning. *Journal of Accounting and Economics* 53, 391-411.
- Armstrong, C., Blouin, J., Jagolinzer, A., Larcker, D., 2015. Corporate governance, incentives, and tax avoidance. *Journal of Accounting and Economics* 60, 1-17.
- Austin, C., Wilson, R., 2015. Are reputational costs a determinant of tax avoidance? Working Paper. University of South Carolina and University of Oregon.
- Balakrishnan, K., Blouin, J., Guay, W., 2012. Does tax aggressiveness reduce financial reporting transparency? Working paper. University of Pennsylvania.
- Bauer, A., Klassen, K., 2013. Tax risk as the likelihood of an unfavorable settlement with tax authorities. Working paper. University of Illinois at Urbana-Champaign.
- Beneish, M.D., 1999. Incentives and penalties related to earnings overstatements that violate GAAP. *The Accounting Review* 74, 425-457.
- Bonsall S., Koharki K., Watson, L., 2015. Deciphering tax avoidance: evidence from credit rating disagreements. *Contemporary Accounting Research*, forthcoming.
- Brochet F., Faurel L., McVay, S., 2011. Manager-specific effects on earnings guidance: an analysis of top executive turnovers. *Journal of Accounting Research* 49, 1123-1162.
- Brock, G., Russell, H., 2015. Abusive tax avoidance and institutional corruption: the responsibilities of tax professionals. Working paper. Harvard University Edmond J. Safra Center for Ethics.
- CFO Research, 2014. Finance views on the tax dimension of strategic decision making. Boston, MA: CFO Publishing LLC.
- Chen, S., Chen, X., Cheng, Q., Shevlin, T., 2010. Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics* 95, 41–61.
- Choudhary P., Koester A., Shevlin, T., 2015. Measuring income tax accrual quality. *Review of Accounting Studies*, forthcoming
- Chyz, J., Gaertner, F., 2015. Can paying “too much” tax contribute to forced CEO turnover? Working paper. University of Tennessee.
- Chyz, J., Leung, W., Li, O., Rui, O., 2013. Labor unions and tax aggressive-ness. *Journal of Financial Economics* 108, 675–698.

- Coughlin, A.T., Schmidt, R.M, 1985. Executive compensation, management turnover and firm performance. *Journal of Accounting and Economics* 7, 43-66.
- DeFond, M.L., Park, C.W., 1999. The effect of competition on CEO turnover. *Journal of Accounting and Economics* 27, 35-56.
- Desai, H., Hogan, S.C, Wilkins, M.S, 2006. The reputational penalty for aggressive accounting: earnings restatements and management turnover. *The Accounting Review* 81, 83-112.
- Desai, M., Dharmapala, D., 2006. Corporate tax avoidance and high- powered incentives. *Journal of Financial Economics* 79, 145–179.
- Desai, M., Dharmapala, D., 2009. Corporate tax avoidance and firm value. *Review of Economics and Statistics* 91, 537–546.
- Donohoe M., Knechel, W., 2014. Does corporate tax aggressiveness influence audit pricing. *Contemporary Accounting Research* 31, 284-308.
- Dyreng, S., Hanlon, M., Maydew, E., 2008. Long-run corporate tax avoidance. *The Accounting Review* 83, 61–82.
- Dyreng, S., Hanlon, M., Maydew, E., 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85, 1163–1189.
- Engel, E., Gao, F., Wang, X., 2003. CFO succession and corporate financial practices. Working paper. The Ohio State University.
- Engel, E., Hayes, R., Wang, X., 2003. CEO turnover and properties of accounting information. *Journal of Accounting and Economics* 36, 197-226.
- Feng, M., Ge, W., Luo, S., Shevlin, T., 2011. Why do CFOs become involved in material accounting manipulations? *Journal of Accounting and Economics* 51, 21-36.
- Gaertner, F., 2014. CEO after-tax compensation incentives and corporate tax avoidance. *Contemporary Accounting Research* 31, 1077-1102.
- Gallemore J., Maydew E., Thornock, J., 2014. The reputational costs of tax avoidance. *Contemporary Accounting Research* 31, 1103-1133.
- Graham, J., Hanlon, M., Shevlin, T., Shroff, N., 2013. Incentives for tax planning and tax avoidance: evidence from the field. *The Accounting Review* 89: 991-1023.
- Graham, J., Tucker, A., 2006. Tax shelters and corporate debt policy. *Journal of Financial Economics* 81, 563–594.
- Guenther, D., Matsunaga, S., Williams, B., 2014. Tax avoidance, tax aggressiveness and firm risk. Working paper. University of Oregon.
- Hanlon, M., Heitzman, S., 2010. A review of tax research. *Journal of Accounting and Economics* 50, 127–178.

- Hanlon, M., Slemrod, J., 2009. What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics* 93, 126–141.
- Hasan, I., Hoi, C., Wu, Q., Zhang, H., 2014. Beauty is in the eye of the beholder: the effect of corporate tax avoidance on the cost of bank loans. *Journal of Financial Economics* 113, 109–130.
- Hennes, K., Leone, A., Miller, B., 2008. The importance of distinguishing errors from irregularities in restatement research: The cast of restatements and CEO/CFO turnover. *The Accounting Review* 83, 1487-1519.
- Henry, E., Sansing, R., 2015. Data truncation bias and the mismeasurement of corporate tax avoidance. Working Paper. University of Tennessee and Dartmouth College.
- Hope, O., Ma, M., Thomas, W., 2013. Tax avoidance and geographic earnings disclosure. *Journal of Accounting and Economics* 56, 170–189.
- Hutchens, M., Rego, S., 2014. Tax risk and the cost of equity capital. Working paper. Indiana University.
- Jiang, J., Petroni, K.R., Wang, I.Y., 2010. CEOs and CFOs: Who have the most influence on earnings management. *Journal of Financial Economics* 96, 513-526.
- Khurana, I., Moser, W., 2013. Institutional shareholders' investment horizons and tax avoidance. *Journal of the American Taxation Association* 35, 111–134.
- Kim, J., Li, O., Li, Y., 2010. Corporate tax avoidance and bank loan contracting. Working paper. City University of Hong Kong, Pokfulam, Hong Kong.
- Kim, J., Li, Y., Zhang, L., 2011. Corporate tax avoidance and stock price crash risk: firm-year level analysis. *Journal of Financial Economics* 100, 639–662.
- Li, C., Sun, L., Ettredge, M., 2010. Financial Executive Quality, Financial Executive Turnover, and Adverse SOX 404 Opinions. *Journal of Accounting and Economics* 50, 93-110.
- Lisowsky, P., 2010. Seeking shelter: empirically modeling tax shelters using financial statement information. *The Accounting Review* 85, 1693-1720.
- Lennox, C., Lisowsky, P., Pittman, J., 2013. Tax aggressiveness and accounting fraud. *Journal of Accounting Research* 51, 739–778.
- Mian, S., 2001. On the choice and replacement of chief financial officers. *Journal of Financial Economics* 60, 143-175.
- Mills, L., 1998. Book-tax differences and Internal Revenue Service adjustments. *Journal of Accounting Research* 36, 343–356.
- Mills, L., Sansing, R., 2000. Strategic tax and financial reporting decisions: theory and evidence. *Contemporary Accounting Research* 17, 85–106.

- Phillips, J., 2003. Corporate tax-planning effectiveness: the role of compensation-based incentives. *The Accounting Review* 78, 847-874.
- PricewaterhouseCoopers, 2004. Tax risk management. London: PWC.
- Robinson, J., Sikes, S., Weaver, C., 2010. The impact of evaluating the tax function as a profit center on effective tax rates. *The Accounting Review* 85, 1035–1064.
- Rego, S., Wilson, R., 2012. Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research* 50, 775–810.
- Rostain, T., 2006. Travails in tax: KPMG and the tax-shelter controversy, in D. Rholde and D. Luban (eds), *Legal Ethics: Law Stories*, Foundations Press, Perry, MI.
- Shevlin, T., Urcan, O., Vasvari, F., 2013. Corporate tax avoidance and public debt costs. Working paper. University of California, Irvine, CA.
- Warner, J., Watts, R., Wruck, K., 1988. Stock prices and top management changes. *Journal of Financial Economics* 20, 461-92.
- Wilson, R., 2009. An examination of corporate tax shelter participants. *The Accounting Review* 84, 969–999.

## Appendix: Variable definitions

Variable Name	Variable Definition
<b><u>CFO Turnover</u></b>	
<i>Forced</i>	Equals one if year $t$ is the last year of the tenure of a CFO being forced out, and zero if there is no CFO turnover. The reason for forced turnover is classified as being “fired”, “demoted”, “pursue other interests”, leaving for “family or personal reasons”, “accounting irregularity or scandal”, “policy difference”, and “no reason”, and retiring before the age of 62.
<i>Internal promotion</i>	Equals one when CFO is promoted internally to be CEO/ or president/ or COO/ or chairman of the company.
<i>External promotion</i>	Equals one when CFO becomes the CFO / or CEO of another public company.
<b><u>Various tax performance metrics</u></b>	
<i>CASH_ETR5</i>	Cash taxes paid (TXPD) divided by pretax income (PI) minus special items  (SPI) calculated over five-year period ending in beginning of year $t$ .
<i>ETR5</i>	Total income taxes (TXT) divided by pretax income over five-year period ending in beginning of year $t$ .
<i>Tax_AQ</i>	Standard deviation of the residuals from firm-specific estimates of Equation $(TaxACC_t = \beta_0 + \beta_1 CTP_{t-1} + \beta_2 CTP_t + \beta_3 CTP_{t+1} + \beta_4 \Delta DTL\_LT_t + \beta_5 \Delta DTA\_LT_t + \epsilon_t)$ for the past five years.  TaxACC=total tax accrual, defined as tax expense (TXT) - cash taxes paid (TXPD), scaled by total assets (AT). CTP = Cash taxes paid related to income taxes (TXPD), scaled by total assets (AT) $\Delta DTL\_LT$ = Change in the long-term portion of the deferred tax liability (TXDB), scaled by total assets (AT). If TXDB is missing and TXDBA is not missing, TXDB is reset to zero $\Delta DTA\_LT$ = Change in the long-term portion of the deferred tax asset (TXDBA) scaled by total assets (AT). If TXDBA is missing and TXDB is not missing, TXDBA is reset to zero
<i>Tax_Risk</i>	Equal one for the top third of the observations with their standard deviation of annual cash ETR for the past five years.
<b><u>Control variables</u></b>	
<i>ROA</i>	The return on assets, measured as the operating income divided by total assets at beginning of year $t$ .

<i>Ret</i>	The annual buy-and-hold stock return measured from year t-1 to beginning of year t.
<i>Size</i>	The natural logarithm of the total assets at beginning of year t.
<i>Leverage</i>	Total liability (DLTT+DLC) scaled by total assets at beginning of year t.
<i>MTB</i>	Market to book ratio at beginning of year t.
<i>SG&amp;A</i>	XSGA scaled by total assets at beginning of year t.
<i>FOR_EARN</i>	Foreign earnings scaled by total assets at beginning of year t.
<i>Tenure</i>	The number of years a CFO has held the position measured at year t.
<i>Age</i>	The age of a CFO measured at year t.
<i>AQ</i>	Standard deviation of the residuals from firm-specific estimates of $\Delta WC_t = \alpha + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta REV_t + \beta_5 PPE_t + \epsilon_t$ for the past five years. $\Delta WC_t$ is the change in working capital accruals ( $\Delta$ current assets ( $ACT_t - ACT_{t-1}$ ) – $\Delta$ current liabilities ( $LCT_t - LCT_{t-1}$ ) – $\Delta$ cash ( $CHET - CHET_{t-1}$ ) + $\Delta$ current portion of long-term debt ( $DLC_t - DLC_{t-1}$ ). $CFO_t$ is cash flows from operations ( $OANCF_t$ ), $\Delta REV_t$ is – $\Delta$ revenue ( $REVT_t - REVT_{t-1}$ ), and $PPE_t$ is gross plant, property, and equipment ( $PPEGT_t$ ). All variables are scaled by average total assets ( $(AT_t + AT_{t-1}) \div 2$ ).
<i>Loss</i>	Occurrence of negative pre-tax income for the past five years.

---

**Table 1. Reasons for forced CFO turnover**

This table summarizes the reasons for forced CFO turnovers from 1998 to 2007:

<i>Reason for forced turnover</i>	Frequency
Pursue other possibilities	181
Pursue other interests	137
Family or personal reasons	39
Scandal	21
Fired	12
No reason provided	74
Retirement before age 62	363
Total	827

**Table 2. Summary statistics**

Panel A: descriptive statistics for the forced CFO turnover sample

Variable	N	Mean	Median	Std Dev	Lower Quartile	Upper Quartile
<i>CASH_ETR5</i>	827	0.26**	0.27**	0.14	0.18	0.34
<i>ETR5</i>	827	0.38	0.37	0.15	0.32	0.40
<i>Tax_AQ</i>	827	0.01	0.01*	0.01	0.00	0.01
<i>AQ</i>	827	0.03***	0.03***	0.02	0.02	0.04
<i>Tax_Risk</i>	827	0.45***	0.00**	0.50	0.00	1.00
<i>MTB</i>	827	3.29	2.56	2.47	1.58	4.12
<i>Size</i>	827	7.20	6.98	1.61	6.00	8.18
<i>ROA</i>	827	0.06*	0.06*	0.07	0.03	0.10
<i>Leverage</i>	827	0.22*	0.22*	0.17	0.05	0.33
<i>SG&amp;A</i>	827	0.25	0.20	0.21	0.10	0.35
<i>FOR_EARN</i>	827	0.02	0.00	0.03	0.00	0.02
<i>Age</i>	827	51.43***	52.00***	6.55	46.00	57.00
<i>Tenure</i>	827	6.67***	6.00***	4.36	3.00	8.00
<i>Ret</i>	827	0.07***	-0.02***	0.59	-0.23	0.25
<i>Loss</i>	827	0.09*	0.00	0.15	0.00	0.20

Panel B: descriptive statistics for the control sample with no CFO turnover

Variable	N	Mean	Median	Std Dev	Lower Quartile	Upper Quartile
<i>CASH_ETR5</i>	8725	0.25	0.26	0.15	0.16	0.34
<i>ETR5</i>	8725	0.37	0.37	0.14	0.32	0.40
<i>Tax_AQ</i>	8725	0.01	0.01	0.01	0.00	0.01
<i>AQ</i>	8725	0.03	0.02	0.02	0.02	0.04
<i>Tax_Risk</i>	8725	0.41	0.00	0.49	0.00	1.00
<i>MTB</i>	8725	3.21	2.50	2.32	1.63	4.01
<i>Size</i>	8725	7.18	7.01	1.55	6.07	8.14
<i>ROA</i>	8725	0.06	0.06	0.07	0.03	0.10
<i>Leverage</i>	8725	0.21	0.20	0.17	0.05	0.32
<i>SG&amp;A</i>	8725	0.25	0.21	0.21	0.10	0.35
<i>FOR_EARN</i>	8725	0.02	0.00	0.03	0.00	0.02
<i>Age</i>	8725	49.02	49.00	6.52	44.00	54.00
<i>Tenure</i>	8725	5.46	4.00	4.52	2.00	8.00
<i>Ret</i>	8725	0.13	0.02	0.66	-0.19	0.29
<i>Loss</i>	8725	0.08	0.00	0.14	0.00	0.20

This table reports descriptive statistics for the sample of forced CFO turnover and the control sample with no CFO turnover. Information on the CFOs' background data are collected from annual reports, proxy statements, and web searches. Asterisks in Panel A denote variables that

are statistically different for between the forced sample and the control sample based on t-tests for mean comparison and Wilcoxon tests for median comparison. Statistical significance is denoted by \*, \*\*, and \*\*\* for the 0.10, 0.05, and 0.01 levels, respectively. Variables are defined in the Appendix.

**Table 3. Association of CFO turnover and difference tax performance metrics**

Parameter	Estimate	P-value								
Intercept	-2.321	<.0001	-2.179	<.0001	-2.376	<.0001	-2.242	<.0001	-2.597	<.0001
<i>CASH_ETR5</i>	0.200	0.031							0.220	0.021
<i>ETR5</i>			0.025	0.823					0.044	0.697
<i>Tax_AQ</i>					5.174	0.003			4.111	0.022
<i>AQ</i>					2.437	0.000			2.306	0.001
<i>Tax_Risk</i>							0.117	0.000	0.102	0.002
<i>MTB</i>	0.029	0.000	0.030	<.0001	0.029	0.000	0.033	<.0001	0.030	<.0001
<i>Size</i>	0.007	0.542	0.007	0.512	0.016	0.166	0.010	0.380	0.016	0.156
<i>ROA</i>	-0.676	0.005	-0.670	0.007	-0.679	0.005	-0.594	0.015	-0.581	0.018
<i>Leverage</i>	0.049	0.612	0.045	0.641	0.055	0.568	0.052	0.590	0.060	0.535
<i>SG&amp;A</i>	0.062	0.423	0.043	0.582	0.031	0.685	0.041	0.596	0.046	0.556
<i>FOR_EARN</i>	-1.089	0.028	-1.024	0.039	-1.053	0.033	-1.009	0.042	-1.081	0.029
<i>Age</i>	0.018	<.0001	0.018	<.0001	0.018	<.0001	0.018	<.0001	0.018	<.0001
<i>Tenure</i>	0.020	<.0001	0.019	<.0001	0.020	<.0001	0.020	<.0001	0.021	<.0001
<i>Ret</i>	-0.071	0.010	-0.071	0.010	-0.073	0.008	-0.073	0.008	-0.075	0.006
<i>Loss</i>	0.332	0.003	0.315	0.005	0.176	0.130	0.247	0.029	0.139	0.242
Pseudo_R2	0.029		0.028		0.032		0.030		0.035	
N	10267		10267		10267		10267		10267	

This table reports the coefficients and p-value from the following probit regression:

$$\begin{aligned}
 Prob(Turn=1) = & a_0 + a_1 CASH\_ETR5_{t-1} + a_2 ETR5_{t-1} + a_3 Tax\_AQ_{t-1} + a_4 AQ_{t-1} + a_5 Tax\_risk_{t-1} + a_6 MTB_{t-1} + a_7 Size_{t-1} + a_8 ROA_{t-1} + a_9 Leverage_{t-1} \\
 & + a_{10} SG\&A_{t-1} + a_{11} FOR\_EARN_{t-1} + a_{12} Age_t + a_{13} Tenure_t + a_{14} Ret_{t-1} + a_{15} Loss_{t-1} + \varepsilon
 \end{aligned}$$

Standard errors are cluster at firm level. Variables are defined in the Appendix.

**Table 4. Association of forced CFO turnover and difference tax performance metrics**

Parameter	Estimate	P-value								
Intercept	-2.857	<.0001	-2.732	<.0001	-2.860	<.0001	-2.7447	<.0001	-3.149	<.0001
<i>CASH_ETR5</i>	0.223	0.041							0.259	0.027
<i>ETR5</i>			0.131	0.331					0.153	0.264
<i>Tax_AQ</i>					2.376	0.272			1.353	0.538
<i>AQ</i>					2.782	0.001			2.663	0.001
<i>Tax_Risk</i>							0.102	0.011	0.091	0.025
<i>MTB</i>	0.033	0.000	0.033	0.000	0.034	0.000	0.037	<.0001	0.035	0.000
<i>Size</i>	-0.024	0.080	-0.024	0.086	-0.016	0.243	-0.021	0.126	-0.016	0.251
<i>ROA</i>	-0.494	0.094	-0.446	0.135	-0.501	0.084	-0.427	0.148	-0.372	0.211
<i>Leverage</i>	0.179	0.122	0.173	0.134	0.171	0.140	0.181	0.118	0.173	0.137
<i>SG&amp;A</i>	-0.009	0.921	-0.039	0.679	-0.037	0.691	-0.034	0.718	-0.025	0.796
<i>FOR_EARN</i>	-0.472	0.423	-0.364	0.535	-0.422	0.471	-0.383	0.515	-0.456	0.439
<i>Age</i>	0.026	<.0001	0.026	<.0001	0.026	<.0001	0.025	<.0001	0.026	<.0001
<i>Tenure</i>	0.017	<.0001	0.017	<.0001	0.018	<.0001	0.018	<.0001	0.019	<.0001
<i>Ret</i>	-0.108	0.003	-0.107	0.003	-0.109	0.003	-0.110	0.003	-0.114	0.002
<i>Loss</i>	0.302	0.025	0.266	0.052	0.181	0.196	0.225	0.101	0.126	0.383
Pseudo_R2	0.035		0.034		0.037		0.036		0.040	
N	9552		9552		9552		9552		9552	

This table reports the coefficients and p-value from the following probit regression:

$$Prob(Forced=1) = a_0 + a_1 CASH\_ETR5_{t-1} + a_2 ETR5_{t-1} + a_3 Tax\_AQ_{t-1} + a_4 AQ_{t-1} + a_5 Tax\_risk_{t-1} + a_6 MTB_{t-1} + a_7 Size_{t-1} + a_8 ROA_{t-1} + a_9 Leverage_{t-1} + a_{10} SG\&A_{t-1} + a_{11} FOR\_EARN_{t-1} + a_{12} Age_t + a_{13} Tenure_t + a_{14} Ret_{t-1} + a_{15} Loss_{t-1} + \epsilon$$

Standard errors are cluster at firm level. Variables are defined in the Appendix

**Table 5. Association of CFO turnover and difference tax performance metrics before and after the KPMG scandal**

Panel A: Regression estimation

Parameter	Before KPMG scandal		After KPMG scandal	
	Estimate	P-value	Estimate	P-value
Intercept	-2.586	<.0001	-2.540	<.0001
<i>CASH_ETR5</i>	0.251	0.085	0.223	0.082
<i>ETR5</i>	-0.056	0.743	0.153	0.315
<i>Tax_AQ</i>	4.092	0.099	5.089	0.051
<i>AQ</i>	2.127	0.023	2.353	0.022
<i>Tax_Risk</i>	0.066	0.166	0.118	0.012
<i>MTB</i>	0.004	0.160	0.000	0.863
<i>Size</i>	0.022	0.174	0.021	0.194
<i>ROA</i>	-0.637	0.061	0.054	0.871
<i>Leverage</i>	-0.011	0.936	0.123	0.388
<i>SG&amp;A</i>	0.113	0.302	0.062	0.565
<i>FOR_EARN</i>	-0.716	0.335	-0.895	0.179
<i>Age</i>	0.020	<.0001	0.016	<.0001
<i>Tenure</i>	0.020	0.000	0.022	<.0001
<i>Ret</i>	-0.037	0.217	-0.122	0.032
<i>Loss</i>	0.203	0.251	0.068	0.678
Pseudo R2	0.033		0.038	
N	5066		5201	

Panel B: Comparison of coefficients between before and after the KPMG scandal

Tax performance metrics	P-value for coefficient differences
<i>CASH_ETR5</i>	0.557
<i>ETR5</i>	0.513
<i>Tax_AQ</i>	0.746
<i>Tax_Risk</i>	0.098

This table reports the coefficients and p-value from the following probit regression:

$$Prob(Turn=1) = a_0 + a_1 CASH\_ETR5_{t-1} + a_2 ETR5_{t-1} + a_3 Tax\_AQ_{t-1} + a_4 AQ_{t-1} + a_5 Tax\_risk_{t-1} + a_6 MTB_{t-1} + a_7 Size_{t-1} + a_8 ROA_{t-1} + a_9 Leverage_{t-1} + a_{10} SG\&A_{t-1} + a_{11} FOR\_EARN_{t-1} + a_{12} Age_t + a_{12} Tenure_t + a_{12} Ret_{t-1} + a_{12} Loss_{t-1} + \varepsilon$$

Standard errors are cluster at firm level. Variables are defined in the Appendix.

**Table 6. Association of Forced CFO turnover and difference tax performance metrics before and after the KPMG scandal**

Panel A: Regression estimation

Parameter	Before KPMG scandal		After KPMG scandal	
	Estimate	P-value	Estimate	P-value
Intercept	-3.108	<.0001	-3.169	<.0001
<i>CASH_ETR5</i>	0.355	0.084	0.271	0.068
<i>ETR5</i>	0.107	0.643	0.167	0.331
<i>Tax_AQ</i>	1.176	0.729	1.914	0.511
<i>AQ</i>	1.189	0.349	3.537	0.002
<i>Tax_Risk</i>	0.062	0.335	0.143	0.008
<i>MTB</i>	0.041	0.002	0.023	0.086
<i>Size</i>	-0.046	0.037	0.019	0.313
<i>ROA</i>	-0.906	0.057	-0.008	0.985
<i>Leverage</i>	0.037	0.842	0.224	0.151
<i>SG&amp;A</i>	0.004	0.976	-0.033	0.799
<i>FOR_EARN</i>	0.677	0.453	-1.037	0.186
<i>Age</i>	0.031	<.0001	0.019	<.0001
<i>Tenure</i>	0.018	0.009	0.022	<.0001
<i>Ret</i>	-0.112	0.024	-0.107	0.056
<i>Loss</i>	-0.030	0.904	0.213	0.240
Pseudo R2	0.037		0.048	
N	4732		4820	

Panel B: Comparison of coefficients between before and after the KPMG scandal

Tax performance metrics	P-value for coefficient differences
<i>CASH_ETR5</i>	0.9886
<i>ETR5</i>	0.415
<i>Tax_AQ</i>	0.998
<i>Tax_Risk</i>	0.038

This table reports the coefficients and p-value from the following probit regression:

$$\begin{aligned}
 \text{Prob}(\text{Forced}=1) = & a_0 + a_1 \text{CASH\_ETR5}_{t-1} + a_2 \text{ETR5}_{t-1} + a_3 \text{Tax\_AQ}_{t-1} + a_4 \text{AQ}_{t-1} + a_5 \text{Tax\_risk}_{t-1} + a_6 \\
 & \text{MTB}_{t-1} + a_7 \text{Size}_{t-1} + a_8 \text{ROA}_{t-1} + a_9 \text{Leverage}_{t-1} + a_{10} \text{SG\&A}_{t-1} + a_{11} \text{FOR\_EARN}_{t-1} + a_{12} \text{Age}_t + a_{12} \text{Tenure}_t \\
 & + a_{12} \text{Ret}_{t-1} + a_{12} \text{Loss}_{t-1} + \varepsilon
 \end{aligned}$$

Standard errors are cluster at firm level. Variables are defined in the Appendix.

**Table 7. Association of CFO promotion and difference tax performance metrics**

Parameter	External Promotion		Internal promotion	
	Estimate	P-value	Estimate	P-value
Intercept	-0.879	0.001	-2.039	<.0001
<i>CASH_ETR5</i>	-0.468	0.020	-0.130	0.627
<i>ETR5</i>	0.152	0.628	0.101	0.779
<i>Tax_AQ</i>	0.361	0.178	-0.184	0.688
<i>AQ</i>	0.541	0.467	-0.192	0.858
<i>Tax_Risk</i>	0.114	0.033	0.202	0.003
<i>MTB</i>	0.001	0.767	-0.001	0.832
<i>Size</i>	0.022	0.233	0.093	<.0001
<i>ROA</i>	-1.003	0.022	1.034	0.051
<i>Leverage</i>	-0.187	0.257	0.135	0.489
<i>SG&amp;A</i>	0.174	0.160	0.180	0.240
<i>FOR_EARN</i>	-1.448	0.096	-0.533	0.587
<i>Age</i>	-0.017	<.0001	-0.019	0.001
<i>Tenure</i>	-0.011	0.091	0.034	<.0001
<i>Ret</i>	0.010	0.773	0.025	0.585
<i>Loss</i>	-0.016	0.936	-0.466	0.119
Pseudo R2	0.035		0.031	
N	9194		9057	

This table reports the coefficients and p-value from the following probit regression:

$$Prob(\text{Internal /external promotion}=1) = a_0 + a_1 \text{CASH\_ETR5}_{t-1} + a_2 \text{ETR5}_{t-1} + a_3 \text{Tax\_AQ}_{t-1} + a_4 \text{AQ}_{t-1} + a_5 \text{Tax\_risk}_{t-1} + a_6 \text{MTB}_{t-1} + a_7 \text{Size}_{t-1} + a_8 \text{ROA}_{t-1} + a_9 \text{Leverage}_{t-1} + a_{10} \text{SG\&A}_{t-1} + a_{11} \text{FOR\_EARN}_{t-1} + a_{12} \text{Age}_t + a_{12} \text{Tenure}_t + a_{12} \text{Ret}_{t-1} + a_{12} \text{Loss}_{t-1} + \varepsilon$$

Standard errors are cluster at firm level. Variables are defined in the Appendix.