

The Effects of Managers on Corporate Tax Avoidance

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Abstract: This paper investigates whether individual top managers affect the extent of their firms' tax avoidance. We construct a dataset that tracks the movement of managers across firms over time to identify manager effects on firms' effective tax rates. The results indicate that individual managers play a significant role in determining the level of tax avoidance that firms undertake. The economic magnitude of the manager effects on tax avoidance is large. Moving between the top and bottom quartiles of managers results in a 10.3 percent swing in effective tax rates, which has a direct and proportionally larger effect on their firms' after-tax accounting earnings. We also examine what types of managers are successful at tax avoidance. The results indicate that managers with an MBA or law degree are more likely to be associated with a lower cash effective tax rate than managers without an MBA or law degree.

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1. Introduction

This paper investigates whether individual managers have an effect on their firms' tax avoidance. Despite decades of empirical research in corporate taxation, little attention has been focused on whether individual managers have an effect on their firm's tax avoidance. Most empirical tax research ignores the manager entirely and focuses instead on how tax incentives and firm characteristics influence specific decisions (for reviews see Shackelford and Shevlin, 2001, and Graham, 2003). Empirical tax research has made advances in documenting specific decisions in which tax incentives do or do not matter much, but it has done little to explain why there are such large differences across firms in overall tax avoidance (Dyreng, Hanlon, and Maydew, 2008).

While the role individual managers has been largely ignored in the empirical tax literature, recent research originating in the economics literature finds evidence of manager-specific effects on a wide range of corporate financial and operational strategies (e.g., Bertrand and Schoar, 2003; Chatterjee and Hambrick, 2006; Bennedsen, Perez-Gonzalez and Wolfenzon, 2007; Liu and Yermack, 2007; and Malmendier and Tate, 2007). The manager effects literature, as we call it, posits that managers have different "styles" that play a role in how managers make strategic and operational decisions in the firms that they manage. The approach to identifying manager-specific effects, pioneered by Bertrand and Schoar (2003), is to examine the fixed-effects of managers who served as top executives at more than one firm. The aim of this paper is to draw from these two literatures to consider whether managers appear to have different styles when it comes to tax avoidance.

At first thought, it might be hard to imagine a top manager having an individual effect on the firm's tax avoidance. Consider a typical CEO. The CEO will almost never be a tax expert and in many cases will not even have a financial background. As tax is an extremely technical area, CEOs are unlikely to have the depth of knowledge to understand the ins and outs of various tax strategies. In contrast, a CEO is more likely to have an understanding of the broad competitive landscape of the industry in which his firm operates, the potential for expansion to result in operational economies of scale, and the like. Along this line of thinking it would seem reasonable that a CEO could affect his firm's major operational and financing strategies but maybe less so his firm's tax avoidance activities.

However, it is possible that a CEO can affect tax avoidance by setting the "tone at the top." For example, some CEOs may change the relative emphasis of different functional areas of the firm (e.g., marketing, operations, treasury, tax) and different advisors both within and without the firm. These differences may be based in part on the CEO's prior experiences or the experiences of other companies with which he is familiar.

The extent to which firms achieve tax savings depends greatly on how much involvement the firm's internal and external tax advisors have in the firm's operational and financial decisions. By the time a transaction has been completed most doors for achieving tax savings are closed and tax becomes a compliance function. Anecdotal reports are that firms differ greatly in how involved tax advisors are structuring transactions.¹ At one end of the spectrum, tax experts may be embedded in major decision making teams or at least consulted in a timely manner. At the other end of the spectrum the firm's decisions are made

¹ For example, in a survey of 150 firms CFO Research Services in collaboration with Deloitte Tax LLP report that roughly 50 percent of the firms surveyed said that the tax department has a substantial role in major transactions and only around 25 percent responded that the tax department played a substantial role in making operating decisions.

without regards to tax considerations and tax is relegated to a mere compliance function.

While some of this difference across firms may be due to pre-determined factors such as the industry in which the firm operates (e.g., there are arguably larger opportunities for tax savings in pharmaceuticals than in retailing), Dyreng et al. (2008) find that industry explains little of the variation in tax avoidance across firms. Ultimately, whether top managers have individual effects on tax avoidance is an empirical question.

We begin by constructing a dataset of executives listed in the Execucomp database that were employed by more than one firm. The executives we track include the CEO, CFO and other top managers listed in the Execucomp database. We identify 594 managers that worked for at least two firms and were employed by each firm for at least three years between 1992 and 2006. The resulting dataset has 9,158 firm-years from 826 distinct firms.

Using this dataset, we regress the firm's effective tax rate (measured two different ways²) on firm fixed effects, year fixed effects and manager fixed effects. The results indicate that individual managers play a significant role in determining the level of tax avoidance that firms undertake.³ The effects of managers on both traditional effective tax rates and cash effective tax rates are significant at the 1% level or lower in each specification. While the results are strongest for managers that finished their careers as CEOs, the results also hold for CFOs and other executives covered by Execucomp.

² We employ two different definitions of effective tax rate. The first, which we simply call the effective tax rate, uses the traditional definition of total tax expense (current and deferred) divided by pretax income. The other definition, which we call the cash effective tax rate, is the ratio of cash tax paid to pretax income. We examine both measures to account for the possibility that some managers might care more about tax avoidance that increases reported income (i.e., lower the effective tax rate) while others might be more concerned with cash flow effects (i.e., would emphasize the cash effective tax rate).

³ We define tax avoidance broadly to include anything that reduces the firm's taxes relative to its pretax accounting income. In this paper we are not attempting to measure how "tax aggressive" the firm or manager is in their tax planning.

The economic magnitude of the effects managers have on their firms' tax avoidance appears to be large. Across all managers in our sample, those at the bottom quartile are associated with a reduction in their firms' traditional (cash) effective tax rates of 5.6 (8.0) percent, while those at the top quartile are associated with an increase in their firms' traditional (cash) effective tax rates of 4.7 (6.9) percent. Since reductions in traditional effective tax rates translate directly into increased reported earnings, managers effective at promoting tax avoidance have a significant effect on their firms' reported earnings that is proportionally larger than their impact on the effective tax rate. For example, consider a firm that absent a manager specific effect would have an effective tax rate of 40 percent. A manager that could reduce the effective tax rate by 5 percent would result in an 8.3 percent increase in after-tax earnings.⁴

Finally, we provide preliminary evidence on what types of managers are associated with lower effective tax rates. We begin by collecting biographical information about each of the executives in our sample from Capital IQ, Who's Who, Hoovers, and NNDB.com (Notable Names Database). We supplement these data by hand collecting biographical information from Internet searches of each executive. The biographical data that we obtain include age and educational background. Prior research has found some evidence that managers with different backgrounds have predictable differences in managerial style (for example, Bertrand and Schoar, 2003). In the setting of tax avoidance that we examine, we find that managers with an MBA or a law degree are more adept at reducing their cash effective tax rates.

⁴ $(t - t') / (1 - t)$ where t is the effective tax rate with no manager effect and t' is the effective tax rate after the manager effect.

We also examine whether tax avoidance tends to be associated with other managerial styles documented in prior research. To do this, we estimate manager fixed effects on a variety of other corporate outcomes studied by Bertrand and Schoar (2003). We then examine whether managerial impact on effective tax rates is associated with manager impact on other corporate outcomes. We find consistent evidence that managers adept at reporting higher income also report higher book effective tax rates. However, the same relation does not hold for cash effective tax rates. These results suggest that managers are able to report higher book income in a way that doesn't result in immediate cash tax outlays (e.g., by reporting temporary differences or large tax reserves). We also report evidence (marginally) consistent with managers that report high levels of research and development also being skilled at reducing cash effective tax rates. This result is consistent with the idea that research-intensive firms are able to shift intellectual property rights to locations that reduce tax expense (Gruber and Slemrod, 1998).

The paper proceeds as follows. In the next section we review the prior literature, specifically the prior on manager effects and the literature on tax avoidance. In section 3 we discuss our sample selection and present descriptive statistics. Section 4 presents our empirical analysis and section 5 concludes.

2. Prior Literature

2.1 Prior literature on tax avoidance

There is a growing literature that investigates the overall level of firm tax avoidance. In one of the earliest studies of firms' overall tax avoidance, Zimmerman (1983) examines whether firm size (as a component/proxy for a firm's political cost) is related to effective tax

rates. Later, Gupta and Newberry (1992) investigate the determinants of annual effective tax rates more generally (including size) to try to explain overall variation in these rates and Mills, Erickson and Maydew (1998) examine whether investments in tax planning result in lower effective tax rates.⁵ Rego (2003) investigates whether economies of scale are associated with the tax avoidance activities of U.S. multinational corporations. Using survey data, Phillips (2003) examines whether compensating managers based on pre-tax or after-tax earnings affects their tax planning, finding that it appears to matter for managers of business units but not for CEOs. In studies of tax shelter firms, Graham and Tucker (2006) examine whether these firms carry less debt (i.e., whether the shelters are non-debt tax shields), while Wilson (2007) provides evidence that sheltering firms have higher returns as long as the firm's governance is good (measured by the Gompers et al. (2003) index).⁶ Finally, Dyreng, Hanlon and Maydew (2008) investigate whether there is variation in tax avoidance over the long run and find that there is substantial variation across firms in how well they can avoid taxes even over long time periods such as five or ten years.

In sum, prior research has investigated how to measure tax avoidance and there has been some work in the area of correlating firm characteristics with tax avoidance (and even tax sheltering) in an effort to determine why or how some firms can avoid taxes. We extend this line of research by examining whether individual managers affect corporate tax avoidance. While the effect of the CEO or other top management has recently been investigated with other performance outcomes of the firm (discussed in the next section), little attention has been given to whether individual managers have an impact on how much tax the

⁵ See also Siegfried 1972; Porcano 1986; Stickney and McGee 1982; Shevlin and Porter 1992 for tests of size and effective tax rates. In addition, see Callihan 1994 for a summary of annual effective tax rate research.

⁶ This result is similar to the results in Desai and Dharmapala (2006).

firm avoids. We address this question in our paper. This is an important step in identifying factors that make some firms more able to avoid tax than others.

2.2 The effects of CEOs and other top executives on firm performance

As discussed above, much prior literature deals with firm or industry-level characteristics to explain corporate behavior (in our case in terms of corporate tax avoidance) but does not take into account the effect that individual managers may have on the final outcomes. How much of an effect the top managers and the ‘tone at the top’ these managers set has on various aspects of firm performance and shareholder value is a question that is attracting increased attention.

For example, Hayes and Shaefer (1999) estimate how much managers are worth to shareholders by identifying firm/manager separations and computing the abnormal returns to the events. The authors use a clever research design and compare cases where a manager dies and cases where managers are ‘raided’ by other firms to infer the value for managerial talent. The authors assume talent is randomly dispersed among the managers who die but that managers that are raided have, on average, higher talent levels which if valued should be reflected in stock price changes. The authors report that the stock return for companies where the manager is raided is negative 1.51% as compared to a positive 3.82% return upon the death of a manager. By comparing the abnormal returns across the two groups the authors obtain a measure of the value of differences in manager ability.⁷

Bertrand and Schoar (2003) examine whether top executives affect firm performance and decisions by constructing a sample of managers who have moved across at least two firms

⁷ See also Johnson, Magee, Nagarajan, and Newman (1985), which examines the market reaction to the sudden deaths of executives (53 events). The authors find the market reaction is associated with founder status, decision-making responsibilities, and estimates of transaction costs for negotiating employment agreements.

and investigating the managers' effects on these firms. By tracking managers that move the authors can separate the firm effect from the manager effect on corporate behavior and performance. In sum, the authors report that managers matter to corporate decision making and that a significant portion of the variation in investment, financial, and organizational practices can be explained by manager effects over and above firm effects. In another set of tests, the authors document that older executives appear to be more conservative, while executives with an MBA appear to be more aggressive.

Several other papers examine the relation between CEO characteristics or CEO personal events to company performance. For example, Chatterjee and Hambrick (2006) examine narcissistic CEOs and company performance. The authors construct a "narcissism index" based on 1) how large the CEO's photograph is in the annual report, 2) the prominence of the CEO in company press releases, 3) the length of the CEO's entry in *Who's Who in Finance and Industry* volumes, 4) the use of first person singular pronouns in personal interviews and 5) CEO pay measures (under the argument that CEOs have considerable influence over their own pay). The authors examine a sample of 111 CEOs in the computer and software industries and find that differences across CEOs as measured by their narcissism index affect organizational outcomes.

Liu and Yermack (2007) investigate whether the size of house the CEO builds affects firm performance. The competing hypotheses the authors cite are that the large home investment might indicate the executive's commitment to the company or it may alternatively signal entrenchment. The authors condition the home purchase on whether company stock was liquidated to fund the purchase. Their research indicates that future firm performance is inversely related to the CEO's liquidation of firm equity to finance the home purchase. The

authors find that many of these executives could fund the purchases from other sources of wealth and thus the sale of the equity signals lower future firm performance (even though the executives argue liquidity needs for the home at the time of the sale of shares). The authors also find that regardless of the source of financing for the home, future company performance deteriorates when CEOs acquire very large homes or estates. Thus, the authors interpret this evidence as indicating that the purchase of these large homes signals entrenchment rather than a bonding or commitment to the company.

In further investigations of CEOs and company performance, Malmendier and Tate (2007) report evidence that CEOs who win awards from the business press (e.g., being named to Business Week's "Best Managers" list) underperform relative to their peer group after winning the award (similar to the Sports Illustrated Jinx). These same executives, however, extract significantly higher levels of pay and exhibit higher levels of earnings management in their company reports. A final example of the CEO line of research is Bennedsen, Perez-Gonzalez, and Wolfenzon (2007) who investigate firm performance following the death of the CEO or the death of a family member of the CEO. The authors reference Becker (1965, 1981) recognizing that individuals' market and non-market activities are closely related and that individuals allocate time to maximize both professional and personal objectives. Bennedsen et al., (2007) use data from Denmark and report that CEO (but not board members') own and family deaths are strongly correlated with declines in firm operating performance. The most meaningful deaths for the CEOs, as might be expected, are the death of a child or a spouse, whereas the death of a mother-in-law has very little impact upon performance. The effects appear to be larger for CEOs with longer tenure and for those at firms with investment opportunities.

The sum of the evidence is that CEOs and other executives matter for firm performance. We draw on this research to examine whether top management matters in terms of tax avoidance; do individual managers impact the level of tax avoidance or is tax avoidance strictly a firm effect?

3. Sample and Descriptive Statistics

The sample begins with all managers listed in the Execucomp database for the years 1992 to 2006. We then track managers across firms and retain those managers who were employed for at least three years in at least two firms. We then impose minimal data requirements, requiring that the firm-year be listed on Compustat with total assets available. The resulting sample includes 9,158 firm-years of data, corresponding to 826 distinct firms, and 594 distinct executives.

Table 1 shows the breakdown of managers by their current title (i.e., the last title listed for the executive on Execucomp) and their prior title. Overall, the sample contains 262 managers whose current title is CEO, 108 whose current title is CFO, and 224 whose current title is something else (e.g., president, vice-president, etc.). There are 85 instances where a manager was CEO of one firm listed in Execucomp and moved to become CEO of another firm. There are few instances of a CEO of one firm going to take a lower title at another firm -- in only one case did a CEO later take on the title of CFO and in 41 cases a CEO later took on a non-CEO, non-CFO title. Being a CFO, on the other hand, is sometimes a stepping-stone to becoming CEO at another firm. This transition occurs 24 times in our sample, while 94 times a CFO makes a move to another firm but retains the same title. Finally, there are 153 instances of managers with titles other than CEO and CFO going on to become CEOs. In

13 cases a non-CEO, non-CFO moves to become a CFO and 172 cases moves to another non-CEO, non-CFO position.

Table 2 presents descriptive statistics for the 9,158 firm-years in our sample. The effective tax rate variable (*ETR*) is measured as the total tax expense (current and deferred) divided by pre-tax income.⁸ The mean *ETR* in the sample is 30.7 percent, with a median of 33.5 percent. We also measure firms' cash effective tax rates (*CASH ETR*) as the ratio of cash taxes paid to pretax income. The sample has a mean *CASH ETR* of 26.0 percent and a median of 24.5 percent.⁹ The observation that the cash tax rate is lower than the traditional effective tax rate is consistent with firms on average having lower taxable income than pretax accounting income, probably due to temporary differences such as depreciation.

We also present a number of other variables that are used later in the paper. Mainly these are variables used in prior research that examines whether managers affect firms' operational and financial policies and variables we expect might be associated with managers' tax avoidance actions. Later in the paper we examine if managers' tax avoidance effects are associated with their effects on these variables. These other non-tax variables are all defined in table 2 and include earnings measures such as *EBITDA* and *EARNINGS BEFORE TAX*. The mean *EBITDA* in the sample is 0.155 and the mean *EARNINGS BEFORE TAX* in the sample is 0.092. Relative to all the firms on Compustat over the same years (and restricted to those that exist on Compustat for at least 6 years as in the sample) the sample firms are more

⁸ Pretax income is measured as income before discontinued operations and extraordinary items and excludes special items. ETRs with negative pretax income are set to missing. The remaining non-missing ETRs are winsorized (reset) so that the largest observation is one and the smallest is zero. While we would like to measure long-run cash effective tax rates as in Dyreng, Hanlon and Maydew (2008) it is not possible for us to examine both manager changes and estimate tax rates over a ten-year span. We do, however, report both traditional effective tax rates and cash effective tax rates.

⁹ The annual cash tax rates are similar to the rates in Dyreng, Hanlon, and Maydew (2008) which used a larger sample but required firms to have positive income summed over a ten year period. The mean annual cash tax rate (measured similarly) in Dyreng, Hanlon, and Maydew (2008) is 27 percent and the median is 25.6 percent.

profitable as the average Compustat firm has *EBITDA* of 0.082 and average *EARNINGS BEFORE TAX* of 0.02 (not reported in the tables). The sample firms invest much less in *R&D* (0.052 versus 0.160, although the medians for both samples is zero) and spend almost identical amounts on *ADVERTISING*. The sample firms report less *SG&A* (0.316 versus 0.441) and more *CASH FLOW FROM OPERATIONS* (0.137 versus 0.094). In terms of *LEVERAGE*, *DIVIDENDS*, *SALES GROWTH* and *CASH HOLDINGS* the sample firms are very similar to the general Compustat population. We next turn to the primary empirical analysis.

4. Empirical Analysis

4.1. Do Managers Affect Firm's Tax Avoidance?

Our primary question in this paper is whether individual managers matter for firm tax avoidance. As discussed in Bertrand and Schoar (2003) much prior literature has either assumed that all managers are homogeneous and selfless inputs into the firm's processes or that even if managers are heterogeneous they cannot easily affect firm policies. An opposing view from standard agency models is that managers have discretion within their own firm and use this discretion to affect corporate decision making and possibly to advance their own objectives. We recognize that in our tests if we find that managers do matter (consistent with the second view), it could be that managers have different styles that they impose on the firm or it could be that the firm hired the manager because of their style. We control for the firm effect, however, so only if the firm changed objectives and hired managers with different styles through time could our results be because of matching between the firm and managers;

otherwise the new manager's style would be the same as the old manager's and the effect would be captured by the firm variable.

The identification strategy that we use is based on Bertrand and Schoar (2003):

$$ETR_{it} = \alpha_0 + \sum_k \alpha_k X_{kit} + \sum_t \alpha_t YEAR_t + \sum_i \alpha_i FIRM_i + \sum_m \alpha_m EXEC_m + \varepsilon_{it} \quad (1)$$

where ETR_{it} is the effective tax rate (both traditional effective tax rates and cash effective tax rates are tested separately). $FIRM_i$ is a separate indicator variable for each firm i (firm fixed effects), $YEAR_t$ is a separate indicator variable for each year, t (year fixed effects) and ε_{it} is the error term. $EXEC_m$ is a separate indicator for each executive, m (the manager fixed effects) and is our main variable of interest. The specification above is what we refer to as the full model and the statistical test of the manager effects on the ETR is a test of whether all the managers' (of every title) coefficients are jointly significant in the presence of the firm and year fixed effects as well as the time varying control variables. Within the title EXEC we also identify which executives are last listed on Execucomp as CEOs, CFOs, or some non-CEO, non-CFO title (and they are then coded as their last title in every observation we have for them) and can test each group of executives separately while also including the effects of the other types of managers. In other words, we can test the effect of the CEOs after controlling for the effects of CFOs, other management members, and firm and year fixed effects (by simply testing the joint significance of the set of coefficients for the executives who we have identified as CEOs). We also present other results, from models that only include a subset of the effects shown in Eq. (1) above such as only firm fixed effects, only year fixed effects, or only CEO (or CFO) fixed effects, for example. We discuss the results of these tests below.

The vector of time-varying firm controls (X in Eq. (1)) that we employ includes whether the firm has a net operating loss carryforward (NOL) and firm size, measured as the

log of total assets. We include these variables to avoid attributing the effect of, for example, the NOL deduction to the manager when the manager could have just inherited the NOL. However, we recognize that if manager choices affect size and the presence of firm NOLs and these items in turn affect ETRs then including these controls could bias the manager fixed effect coefficients toward zero. In sensitivity analyses we estimate the regressions without the controls and find that the controls have very little effect on the interpretation of managerial impact on tax avoidance.

Our sample consists of manager changes. If a firm had the same managerial team over time, the firm fixed effects and manager effects would be perfectly collinear and one could not separate the effects that are specific to a manager from that of the firm. With variation in managers over time it is possible to separate manager effects from firm effects.¹⁰ Moreover, by observing the performance of the same manager across two firms, say X and Y, we reduce the likelihood that the results are due to coincidental time-varying performance in one of the firms. Accordingly, we impose the same requirement on our sample as did Bertrand and

¹⁰ It would be possible to estimate Eq. (1) on a large sample of firms provided that there was variation in the management team over time without requiring that the managers move across firms. For example, firm X might employ A as CEO and later employ B as CEO. One could identify fixed effects for A, B and X. However, the risk in that approach is that if one only observes A and B's performance at a single firm, it is possible that the fixed effects for A and B would reflect time-varying performance in X that is unrelated to A and B's actual performance as a manager. The broad sample approach would make it important to control for time varying performance in X in a way that was not due to A or B's policies. One way to counter this limitation would be to control for the contemporaneous performance of other firms in the same industry. We are considering this approach for future revisions. A benefit of using the broad sample would be that it would avoid concerns about generalizability from using only managers that change firms. For example, prior literature provides evidence consistent with earnings management activities and opportunistic behaviors on the part of both incoming and outgoing managers (see for example, DeAngelo (1988), Pourciau (1993), Elliot and Shaw (1988), Stong and Meyer (1987), Moore (1973) and others). While we do not think these earnings management activities affect our results with respect to our cash taxes paid measure, it could affect our traditional *ETR* measure results since the tax expense on a firm's income statement affects bottom line net income.

Schoar (2003) by requiring managers in our sample to have been employed by at least two firms in the sample, with at least three years of employment at each firm.¹¹

Table 3 reports the results from estimation of (1) across the sample of 9,158 firm-years. Panel A presents the results where *ETR* is the dependent variable and Panel B where *CASH ETR* is the dependent variable. The first column is a baseline regression that includes only an intercept and the vector of time-varying firm controls. Moving to the right we present the results from a model that includes the vector of time varying controls and a) only year effects (Model 2), b) only firm effects (Model 3), c) only CEO effects (Model 4), d) only CFO effects (Model 5), and e) only other (non-CEO, non-CFO) executive effects (Model 6). In column 7 (Model 7) we present results of a model that only includes the time varying controls and only the executive fixed effects. In this model, we include an indicator variable for all executives in the sample and test them jointly, regardless of specific title (i.e., CEO, CFO, Other). In column 8 (Model 8), we estimate the full model specified in Eq. (1). Here we include the manager fixed effect (indicator variable) for every executive as well as the firm fixed effect and year fixed effect and the time varying controls. As described above, when specified in this manner we can statistically test the significance of any subset of indicator variables. We report tests of each subset in Model 8. The difference then in Model 8 when looking at the F-statistic for CEOs is that in Model 8 that F-statistic tests the joint significance of the all the CEOs after controlling for the firm effect, year effect, and effects of managers with other titles. We conduct this statistical test for each subset of executives as well as for the entire group of executives regardless of title.

¹¹ We re-run the analysis aggregating the variables across each manager's tenure at each firm to control for dependence in the error term within firms and find statistically similar results.

The results indicate that both firm and year fixed effects are significant when included on their own in both the *ETR* and the *CASH ETR* regressions (Models 2 and 3). All three sets of manager coefficients are significant at the 1% level when considered individually (Models 4-6) and collectively (Model 7). Model 8, again, presents the results for the full model from Eq. (1) that includes fixed effects for the firm, the year, and each executive. Each type of manager has a fixed effect that is significant in the full model in both the *ETR* and the *CASH ETR* regressions (i.e., after controlling for the effect of other managers and firm and year effects, each type of manager still has a significant fixed effect, on average). The F-statistics are the largest for CEO fixed effects, both in the full model and when each manager group is tested individually, which might be expected if CEOs (and future CEOs) have the most influence on the firm's policies. Now that we have found that manager effects are statistically significant, in the next section we turn to examining the economic significance of manager effects.

4.2. *The Economic Magnitude of Manager Effects on Tax Avoidance*

An appealing aspect of the empirical design (i.e., estimating a regression of *ETR* on manager fixed effects) is that it results in a manager fixed effect coefficient for each manager in the sample. Thus, the coefficient on manager A's fixed effect is an estimate of manager A's influence on the effective tax rates of the firms where he has been employed.¹² In table 4 we present the distribution of the manager fixed effect coefficients. Panel A presents the distribution of the full set of manager fixed effect coefficients while Panel B presents the

¹² Naturally, these are simply estimates and are measured with error as indicated by the standard errors of the respective coefficients.

distributions for only those managers whose fixed effect is statistically significant. In the table we include all manager fixed effect coefficients be they CEO, CFO or other managers.

The results indicate that managers can have economically large effects on their firm's effective tax rates, in both directions. Among the entire set of managers, those at the 25th percentile showed an *ETR* reduction of 5.6 percent, while those at the 75th percentile were associated with an *ETR* increase of 4.7 percent. The mean manager showed smaller magnitude effects on *ETR* of -0.3 percent, while the median effect is zero. Since reductions in effective tax rates translate directly into increased reported earnings, managers effective at promoting tax avoidance have a significant effect on their firms' reported earnings that is proportionally larger than their impact on the effective tax rate. For example, consider a firm that given a certain level of pre-tax earnings and absent a manager specific effect would have an effective tax rate of 40 percent. A manager in the 25th percentile that could reduce the effective tax rate by 5.6 percent would increase after-tax earnings by about 9.3 percent, as given by $(t - t') / (1 - t)$ where t is the effective tax rate with no manager effect and t' is the effective tax rate after the manager effect. Thus, the results indicate that the effects that managers appear to have on *ETRs* can be large economically.

The effects on *CASH ETR* are similar though somewhat larger in magnitude than the effects on *ETR*. Managers at the 25th percentile led to a reduction in their firms' *CASH ETR* of 8.0 percent, while those at the 75th percentile led to an increase in their firms' *CASH ETR* of 6.9 percent.

In Panel B we examine just those managers whose fixed effect coefficients are significantly different from zero. While this obviously introduces a bias in terms of the magnitudes of the effects, it also tends to remove those estimated fixed effects that are

measured with error relative to the size of their coefficient, as coefficients with large standard errors are driven towards insignificance. Among those managers with significant fixed effect coefficients, the mean and median coefficients in the *ETR (CASH ETR)* model are 0.7 percent (-1.3 percent) and 11.4 percent (-12.8 percent), respectively. Thus, the evidence suggests that managers have individual effects in influencing their firm's tax level of avoidance and that the effects are economically significant. Below, we provide some initial evidence about whether managers that are effective at influencing tax avoidance have particular attributes and / or also tend to have predictable managerial styles. We turn to these issues in the next two sections.

4.3. *Manager Characteristics and Tax Avoidance*

Prior research has found some evidence that managers with different backgrounds have predictable differences in managerial style. Accordingly, for each of the managers in our sample, we attempt to obtain biographical information about the manager's age and educational background. Frequently these data are missing from Execucomp. Thus, for each manager with missing information, we also conduct a search of the Internet for biographical information. Often, we could obtain additional information about the managers using this approach.

Table 5 presents biographical information for the 594 managers in the sample. Most of the managers in the sample, 580, were employed at an executive level at only two firms over the sample period. However, 13 managers were employed as executives by three firms during the sample period and one manager held an executive position at four firms. Of the managers, 344 held the same title across all of the firms that they were employed at while 250 held two different titles. Of the 594 executives in the sample, we obtain educational

information for 271 of them. Among these 271 managers 131 hold an MBA degree, 28 a JD, 30 have an accounting degree or majored in accounting, and 82 have some other degree. We focus on MBA, JD and accounting degrees because one might expect that managers with financial or legal training might be more likely to emphasize tax avoidance. Finally, for 285 managers we have their year of birth. Of these, the largest cohort was born in the 1940s (134 managers) with the second largest in the 1950s (91 managers). The smallest cohort was born in the 1920s (2 managers). We next examine whether these manager characteristics are associated with the manager's proclivity towards tax avoidance.

Table 6 presents the results of regressions of manager fixed effect coefficients obtained from the empirical estimation of Eq. (1) on variables that capture the biographical characteristics from table 5. Columns two through four present the results using manager fixed effect coefficients from the *ETR* model of Eq. (1) as the dependent variable. The fifth through seventh columns present the results using the manager fixed effects coefficients from the *CASH ETR* model of Eq. (1) as the dependent variable. Fixed effect coefficients from the *ETR* specification of Eq. (1) are difficult to explain with manager backgrounds. The only variable that is statistically significant (at the 10% level) is the manager's average tenure, which is only significant when considering CEO and CFO effects (the inference is that the longer the CEO and CFO tenure, the less the manager's effect on the firm's *ETR*). Thus, we find little evidence that biographical data are useful at explaining managers' proclivity to plan or manage the traditional *ETR*.

However, there do seem to be identifiable differences in manager characteristics with respect to the manager's effect on the *CASH ETR*. It appears that managers with an MBA or law degree are more adept at saving cash taxes. Having an MBA is associated with a 3.1

percent reduction in *CASH ETR*, while having a law degree is associated with a 5.8 percent reduction in *CASH ETR*. There is also evidence that CEOs with accounting degrees are associated with lower *CASH ETRs*, however, note this relation is significant for CEOs with an accounting degree but not for executives in general.

The next section examines whether managers' proclivity towards tax avoidance is associated with other managerial styles.

4.4. *Management Styles and Tax Avoidance*

Prior research has found evidence that managers have different "styles." For example, some managers may emphasize growth strategies. In this section we examine whether managers' tendencies towards tax avoidance are associated with other individual specific effects that the managers have on their firm's operational and financial decisions and outcomes. We begin by estimating Eq. (1) for a variety of dependent variables other than *ETR* and *CASH ETR*. We follow prior research and use the following operational and financial variables as dependent variables in Eq. (1): *EBITDA*, *EARNINGS BEFORE TAX*, *R&D*, *ADVERTISING*, *SG&A*, *CASH FROM OPERATIONS*, *INTEREST COVERAGE*, *CAPITAL EXPENDITURES*, *PERCENT CHANGE IN SALES*, *LEVERAGE*, *CASH HOLDINGS*, and *DIVIDENDS* (all of which are defined in table 2). For example, we regress *CAPITAL EXPENDITURES* on a vector of time varying controls, firm, year, and manager fixed effects.¹³ We then test whether the managerial fixed effect coefficients that we estimate from these regressions are associated with the manager fixed effect coefficients from the tax

¹³ We do not report the regression results from each of these separate regressions in the interest of space. However, we note that, as one might expect, the effect of a manager on such items as R&D spending and leverage is greater than the manager's effect on the effective tax rate measures. For example, F-statistics on the manager fixed effects in the R&D regression ranges (over executive ranks) from 1.0 – 5.0 and for leverage the range is 2.35 – 3.74. In comparison, the range for the tax regressions (from table 3) is 1.30 – 2.35.

regressions discussed earlier in the manuscript. We estimate univariate regressions of the following form:

$$\hat{\alpha}_m^Y = \beta_0 + \beta_1 \hat{\alpha}_m^Z + u, \quad (2)$$

where $\hat{\alpha}_m^Y$ is the estimated fixed effect coefficient for executive m estimated in Eq.(1) when Y (which represents either *ETR* or *CASH ETR*) is the dependent variable in Eq. (1), and $\hat{\alpha}_m^Z$ is the estimated fixed effect coefficient for executive m in Eq.(1) when Z (which represents the non-tax variables listed above) is the dependent variable in Eq. (1). The independent variable of interest in the regression is an estimated coefficient, which is noisy by definition. The noise, in a univariate regression, will lead to downward bias in an OLS estimation of β . We attempt to mitigate this problem by using a GLS estimation technique -- weighting the observation by the inverse of the standard error of the independent variable (Bertrand and Schoar 2003). Table 7 presents the results. Note that each entry in the table represents the coefficient from a *separate* univariate weighted least squares regression.

In general, the data are consistent with manager effects on the effective tax rates being positively associated with manager effects on accounting income and cash flow. However, managerial effects on accounting income and cash flow are not associated with manager effects on *CASH ETRs*. This suggests that on average, the managers that can affect earnings are able to do so in a way that increases book tax expense but does not result in immediate cash payments of taxes. This type of relation could be observed if managers increase earnings and effective tax rates in ways that increase temporary differences or engage in aggressive tax planning strategies while recording a tax contingency reserve, both of which can cause tax expense to exceed cash tax paid. Table 7 also suggests that managers that appear to increase financial leverage also appear to be able to have a negative influence on *ETRs* (and *CASH*

ETRs, although not significantly so). This is consistent with the notion that financially savvy executives are more likely to take on debt and are also adept at managing reported tax expense.¹⁴

Increased spending on *R&D* by a manager appears to be associated with the manager's ability to reduce cash taxes, at least marginally. This result is consistent with the notion that firms with high levels of *R&D* (intangibles) have a greater ability and/or propensity to shift income related to intangible assets to subsidiaries located in tax havens (Gruber and Slemrod 1998).

5. Conclusions and Future Research

This paper investigates whether individual managers have an effect on their firm's tax avoidance. While the role of individual managers has been largely ignored in the empirical tax literature, we draw from recent research originating in the economics literature that finds evidence of manager-specific effects on a wide range of corporate financial and operational strategies. We believe that our paper is among the first to examine the role of individual managers on firms' tax avoidance.

We construct a dataset of manager-firm years and track the movement of 594 CEOs, CFOs and other executives across firms across the period 1992 to 2006. Examining managers who switch firms is important in helping to control for firm fixed-effects and identify manager-specific effects. The results indicate that individual managers play a significant role

¹⁴ It is somewhat puzzling, however, that we do not find evidence of managers associated with higher leverage being associated with lower cash effective rates. There is evidence of financial engineering using debt to reduce taxes. For example, a recent Ernst & Young publication reports that highly engineered financing arrangements are a "red flag" for Internal Revenue Service audits and that "tax authorities worldwide have become increasingly concerned that such arrangements can be used to shift or duplicate interest deductions" (Ernst and Young, 2007 (p. 7)).

in determining the level of tax avoidance that firms undertake. The economic magnitude of the effects managers have on their firms' tax avoidance appears to be large. Across all managers in our sample, including those whose manager fixed effects were not significantly different from zero, those at the bottom quartile are associated with a reduction in their firms' effective tax rates of 5.6 percent, while those at the top quartile are associated with an average increase in their firms' effective tax rates of 4.7 percent. Since reductions in effective tax rates translate directly into increased reported earnings, managers effective at promoting tax avoidance reflected in the *ETR* have a significant effect on their firms' reported earnings. When we examine *CASH ETRs* the evidence is consistent with similar levels of manager effects on the cash taxes paid.

Finally, we provide preliminary evidence on whether it is possible to explain what types of managers are successful at tax avoidance. We collect biographical information about each of the managers in our sample and supplement these data by hand collecting biographical information from Internet searches of each executive. Prior research has found some evidence that managers with different backgrounds have predictable differences in managerial style. In the setting of tax avoidance that we examine, we find a positive association between managers' proclivity towards tax avoidance and their having an MBA degree or a law degree.

We also examine whether tax avoidance tends to be associated with other managerial styles documented in prior research. The evidence indicates that managers that are skilled at increasing accounting earnings also report higher effective tax rates but these same managers are not associated with higher cash tax rates.

Overall, our paper documents that individual managers matter when it comes to a firm's proclivity to avoid taxes. Indeed, our evidence indicates that these manager effects can be economically large. We also provide preliminary evidence that manager characteristics and styles bear some association with their ability to avoid taxes. It appears that managers trained in an MBA program or in law school are more aggressive in avoiding taxes.

References

- Bennedsen, M., F. Perez-Gonzalez, D. Wolfson. 2007. Do CEOs matter? Working paper, University of Texas, Austin.
- Bertrand, M. and A. Schoar. 2003. Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics* 68 (4): 1169-1208.
- CFO Research Services and Deloitte Tax LLP. 2006. What do companies want from the corporate tax function? CFO and tax executives' perspectives on corporate tax. Published by CFO Publishing Corp. 253 Summer Street, Boston, MA 02210.
- Callihan, D. 1994. Corporate effective tax rates: A synthesis of the literature. *Journal of Accounting Literature* (13): 1-43.
- Chatterjee, A. and D. Hambrick. 2006. It's all about me: Narcissistic CEOs and their effects on company strategy and performance. Working paper, Pennsylvania State University.
- Desai, M. 2005. The Degradation of Corporation Profits. *Journal of Economic Perspectives* 19 (Fall): 171-192.
- Desai, M. and D. Dharmapala. 2005. Corporate tax avoidance and firm value." NBER Working Paper No. 11241.
- Dyreng, S., M. Hanlon, and E. Maydew. 2008. Long run corporate tax avoidance. *The Accounting Review* (forthcoming).
- Ernst & Young, LLP. 2007. Tax administration goes global: Corporate tax departments confront complexity, risks, and opportunities.
- Gompers, P. A., J. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. *Quarterly Journal of Economics*, 118: 107-155.
- Graham, J. 2003. Taxes and corporate finance: A review. *Review of Financial Studies* (16): 1074-1128.
- Graham, J. and A. Tucker. Tax shelters and corporate debt policy. *Journal of Financial Economics* 81, 563-594.
- Grubert, H. and J. Slemrod. 1998. The effect of taxes on investment and income shifting to Puerto Rico. *The Review of Economics and Statistics* 80 (3): 365-373.
- Gupta, S., and K. Newberry. 1997. Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16 (1): 1-34.

- Hayes, R. and S. Schaefer. 1999. How much are differences in managerial ability worth? *Journal of Accounting and Economics* 27 (2): 125-148.
- Liu, C. and D. Yermack. 2007. Where are the shareholders' mansions? CEOs home purchases, stock sales, and subsequent company performance. Working paper, Arizona State University.
- Malmendier, U. and G. Tate. 2007. Superstar CEOs. Working paper, UC-Berkeley and NBER.
- Mills, L., M. M. Erickson and E. L. Maydew. 1998. Investments in tax planning. *Journal of the American Taxation Association* 20(1):1.
- Murphy, K.J. and J.L. Zimmerman. 1993. Financial performance surrounding CEO turnover. *Journal of Accounting and Economics* 16 (1-3): 273-316.
- Murray, A. 2002. Narrowing tax gap should be a priority of next congress. *Wall Street Journal*, October 8: A4.
- Phillips, J. 2003. Corporate tax planning effectiveness: The role of compensation-based incentives. *The Accounting Review* 78 (July): 847-874.
- Porcano, T. 1986. Corporate tax rates: Progressive, proportional, or regressive. *Journal of the American Taxation Association* 7, 17-31.
- Pourciau, S. 1993. Earnings management and nonroutine executive changes. *Journal of Accounting and Economics* 16 (1-3): 317-336.
- Rego, S. O. 2003. Tax-avoidance activities of U.S. multinational corporations. *Contemporary Accounting Research* 20(4):805-833.
- Scholes, M., P. Wilson and M. Wolfson. 1992. Firms responses to anticipated reductions in tax rates: The Tax Reform Act of 1986. *Journal of Accounting Research* (Supplement): 161-191.
- Scholes, M., M. Wolfson, M. Erickson, E. Maydew and T. Shevlin. 2005. Taxes and business strategy: A planning approach, Pearson Prentice Hall, Upper Saddle River, NJ 07458.
- Shackelford, D., and T. Shevlin. 2001. Empirical tax research in accounting. *Journal of Accounting and Economics*, (31): 321-387.
- Shevlin, T., and S. Porter 1992. The corporate tax comeback in 1987 some further evidence. *Journal of the American Taxation Association* 14: 58.
- Siegfried, J. J., 1974. Effective average U.S. corporation income tax rates. *National Tax Journal* (27): 245-259.

Stickney, C., and V. McGee. 1982. Effective corporate tax rates the effect of size, capital intensity, leverage and other factors. *Journal of Accounting and Public Policy* (1): 23-45.

Wilson, R. 2007. An Examination of Corporate Tax Shelter Participants. Working paper, University of Iowa.

Zimmerman, J.L. 1983. Taxes and firm size. *Journal of Accounting and Economics* (5): 119-149.

Table 1
Executive Changes

Prior Title	Current Title		
	CEO	CFO	Other
CEO	85	1	41
CFO	24	94	11
Other	153	13	172

This table describes title changes as executives move from one company to another. The sample is a total of 594 executives (262 CEOs, 108 CFOs, and 224 other executives). Each executive is required to be employed by at least two different firms, for at least three years at each firm. The columns across the top describe the executive's title in the last firm in which the executive was observed (current title), while the rows describe the title at the firm in which the executive was employed before the last firm. For example, the cell in the first column and first row describes CEOs that are CEO in their current firm (last firm listed in Execucomp) and were CEO at the firm where they were previously employed. In the case of executives who were employed by more than two firms for at least three years, the table represents their last change only.

Table 2
Descriptive Statistics

Variable	MEAN	STD	P25	P50	P75
<i>ETR</i>	0.307	0.149	0.253	0.335	0.380
<i>CASH ETR</i>	0.260	0.195	0.126	0.245	0.347
<i>EBITDA</i>	0.155	0.126	0.088	0.142	0.211
<i>EARNINGS BEFORE TAX</i>	0.092	0.125	0.031	0.076	0.141
<i>R&D</i>	0.052	0.146	0.000	0.000	0.035
<i>ADVERTISING</i>	0.009	0.025	0.000	0.000	0.003
<i>SG&A</i>	0.316	0.678	0.130	0.237	0.373
<i>CASH FLOW FROM OPERATIONS</i>	0.137	0.119	0.067	0.122	0.189
<i>INTEREST COVERAGE</i>	27.811	112.180	4.051	7.102	14.585
<i>CAPITAL EXPENDITURES</i>	0.297	0.380	0.124	0.199	0.330
<i>PERCENTAGE CHANGE IN SALES</i>	0.165	0.398	0.004	0.087	0.215
<i>LEVERAGE</i>	0.250	0.182	0.106	0.243	0.358
<i>CASH HOLDINGS</i>	0.164	0.316	0.017	0.054	0.181
<i>DIVIDENDS</i>	0.013	0.018	0.000	0.006	0.020

This table describes the variables used in the study. *ETR* is the effective tax rate, defined as income tax expense (data16) divided by pre-tax book income before special items (data170-data17). *CASH ETR* is the cash effective tax rate, defined as cash tax paid (data317) divided by pre-tax book income before special items (data170-data17). *EBITDA* is earnings before interest, taxes, depreciation, and amortization (data13) scaled by lagged total assets (data6). *EARNINGS BEFORE TAX* is pre-tax book income before special items (data170-data17). *RESEARCH & DEVELOPMENT (R&D)* is research and development expense (data46) divided by net sales (data12). *ADVERTISING* is advertising expense (data45) divided by net sales (data12). When missing, *R&D* and *ADVERTISING* are reset to zero. *SELLING, GENERAL, & ADMINISTRATIVE (SG&A)* is selling, general, & administrative expense (data189) divided by net sales (data12). *CASH FLOW FROM OPERATIONS* is pre-tax cash flow from operating activities (data308+data317) divided by lagged total assets (data6). *INTEREST COVERAGE* is earnings before interest, taxes, and depreciation (data13) divided by interest expense (data15). *CAPITAL EXPENDITURES* is reported capital expenditures (data128) divided by gross property plant and equipment (data8). *PERCENTAGE CHANGE IN SALES* is the annual percentage change in net sales $((\text{data12}_t / \text{data12}_{t-1}) - 1)$. *LEVERAGE* is the sum of long-term debt (data9) and long-term debt in current liabilities (data34) divided by total assets (data6). *CASH HOLDINGS* is cash and cash equivalents (data1) divided by total assets (data6). *DIVIDENDS* is the sum of common dividends paid (data21) and preferred dividends paid (data19), divided by total assets (data6). There are a total of 9,158 observations in the sample. Not all variables have 9,158 non-missing observations.

Table 3
Test of Executive Fixed Effects on Effective Tax Rates

Panel A: Dependent variable is the firm's effective tax rate (ETR)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
YEAR		7.43***						8.63***
FIRM			2.93***					2.60***
CEO				2.24***				1.89***
CFO					2.08***			1.44***
OTHER						1.77***		1.43***
EXEC							2.07***	1.70***
N	7,959	7,959	7,959	7,959	7,959	7,959	7,959	7,959
NYEARS		14						14
NFIRMS			783					783
NCEOS				246				246
NCFOS					99			99
NOTHERS						207		207
NEXECS							552	552
ADJRSQ	0.006	0.017	0.164	0.042	0.019	0.025	0.075	0.219

Panel B: Dependent variable is the firm's cash effective tax rate (CASH ETR)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
YEAR		11.23***						9.22***
FIRM			3.11***					2.47***
CEO				2.35***				1.51***
CFO					1.69***			1.30*
OTHER						2.22***		1.49***
EXEC							2.18***	1.49***
N	7,313	7,313	7,313	7,313	7,313	7,313	7,313	7,313
NYEARS		14						14
NFIRMS			731					731
NCEOS				232				232
NCFOS					97			97
NOTHERS						185		185
NEXECS							514	514
ADJRSQ	0.011	0.030	0.184	0.052	0.020	0.041	0.087	0.229

Table 3 (continued)
Test of Executive Fixed Effects on Effective Tax Rates

This table presents F-statistics from various specifications of Eq. (1) as follows:

$$Y_{it} = \alpha_0 + \sum_k \alpha_k X_{kit} + \sum_t \alpha_t YEAR_t + \sum_i \alpha_i FIRM_i + \sum_m \alpha_m EXEC_m + \varepsilon_{it} \quad (1)$$

Each cell in the table is an F-statistic testing the significance of the effects listed in the first column and each column represents a regression nested within the model. For example, the number 7.43 is the F-statistic from the test of whether the year fixed effects are significant in a regression where *ETR* is the dependent variable. Model 1 includes only time varying controls (the presence of an *NOL* and the firm's size). Models 2 through 6 are regressions which include only one set of effects (indicator variables) – *YEAR*, or *FIRM*, or *CEO*, etc. but includes no controls for the other effects. Model 7 includes indicators for all executives regardless of title and the F-statistic listed above (2.07) is the F-statistic on the joint test of whether all those indicator variables are significant. The final model, Model 8, is a test of each set of effects in the presence of the other effects. In this model an indicator for each executive is included and we test the groups of executives separately (e.g., 1.89 F-statistic for the effect of the CEO after controlling for all other effects) and collectively (e.g. 1.70 F-statistic for the combined effect of all executives regardless of title) (Bertrand and Schoar 2003). ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4
Economic Magnitude of the Executive Fixed Effects

Panel A: All executives

Variable	N	SIG					
		10%	MEAN	STD	P25	P50	P75
<i>FIXED EFFECTS FROM ETR MODEL</i>	552	92	-0.003	0.103	-0.056	0.000	0.047
<i>FIXED EFFECTS FROM CASH ETR MODEL</i>	514	81	-0.005	0.142	-0.080	-0.003	0.069

Panel B. Statistically significant executives

Variable	N	SIG					
		10%	MEAN	STD	P25	P50	P75
<i>FIXED EFFECTS FROM ETR MODEL</i>	92	92	0.007	0.212	-0.174	0.114	0.173
<i>FIXED EFFECTS FROM CASH ETR MODEL</i>	81	81	-0.013	0.301	-0.214	-0.128	0.198

The table presents the distribution of the executive fixed effects estimated in table 3. The first column represents the number of executives for which the effect was estimated. The second column represents the number of executives whose fixed effect was statistically different from zero at the 10% level. The remaining columns describe the distribution. In Panel A, all executives for which a parameter could be obtained are represented. In Panel B, only executives whose fixed effect was statistically different from zero at the 10% level are presented.

Table 5
Descriptive Statistics of Executive Biographical Information

Panel A: Number of Distinct Employers per Executive

Number of Employers	Frequency	Percent
2	580	97.64%
3	13	2.19%
4	1	0.17%

Panel B: Number of Distinct Titles per Executive (CEO, CFO, OTHER)

Number of Distinct Titles	Frequency	Percent
1	344	57.91%
2	250	42.09%

Panel C: Number of Execs with Education Recorded

Degree Recorded	Frequency	Percent
Yes	271	45.62%
No	323	54.38%

Panel D: Among Execs with Degree Recorded

Type of Degree	Frequency	Percent
MBA	131	48.34%
JD	28	10.33%
ACCT	30	11.07%
OTHER	82	30.26%

Panel E: Decade of Birth

Birth Decade	Frequency	Percent
1920s	2	0.34%
1930s	43	7.24%
1940s	134	22.56%
1950s	91	15.32%
1960s	15	2.53%
Missing	309	52.02%

This table presents biographical data for our sample of executives. The data were collected by searching Capital IQ, Who's Who, Hoovers, and NNBD.com. When necessary we supplemented the data with general internet searches. The sample is our sample of executives throughout the paper -- 594 executives (262 CEOs, 108 CFOs, and 224 other executives). Each executive is required to be employed by at least two different firms, for at least three years at each firm.

Table 6
Regression of Executive Fixed Effects on Executive Characteristics

Independent Variable	Dependent Variable					
	Estimated fixed effect from Eq. (1) for manager m when ETR is the dependent variable			Estimated fixed effect from Eq. (1) for manager m when $CASH ETR$ is the dependent variable		
	EXEC	CEO & CFO	CEO	EXEC	CEO & CFO	CEO
<i>INTERCEPT</i>	-0.023	-0.016	-0.027	0.042	0.082	0.112
<i>HAS MBA</i>	-0.007	-0.002	0.000	-0.031*	-0.048***	-0.039*
<i>HAS JD</i>	0.021	0.030	0.035	-0.058**	-0.061**	-0.059*
<i>ACCOUNTING MAJOR</i>	-0.009	-0.003	-0.042	0.031	-0.010	-0.093*
<i>NO DEGREE RECORDED</i>	0.006	0.005	0.009	-0.025	-0.034	-0.018
<i>HAS BEEN CFO</i>	-0.012	-0.015		-0.009	0.002	
<i>AVERAGE TENURE</i>	-0.001	-0.003*	-0.003	0.003*	0.001	0.002
<i>AVERAGE AGE</i>	0.001	0.001	0.001	-0.001	-0.001	-0.002
N	267	244	184	261	239	179
ADJRSQ	-0.010	-0.004	0.001	0.016	0.020	0.032

This table presents results from testing the association of manager characteristics with manager fixed effects from Eq. (1). The model is:

$$\hat{\alpha}_m^Y = \omega_0 + \omega_1 MBA_m + \omega_2 JD_m + \omega_3 ACCT_m + \omega_4 NODEG_m + \omega_5 WASCFO_m + \omega_6 TENURE_m + \omega_7 AGE_m + e_m$$

where $\hat{\alpha}_m^Y$ is the estimated fixed effect for manager m when Y (ETR or $CASH ETR$) is the dependent variable in Eq. (1). MBA indicates that the manager earned a masters of business administration. JD indicates that the manager earned a Juris Doctor. $ACCT$ indicates that at least one of the manager's degrees was in accounting or had an accounting emphasis. $NODEG$ indicates that no information was available about the manager's education. $WASCFO$ indicates that the manager has been a CFO as some point during his recorded career on Execucomp. $TENURE$ is the average number of years the manager spent at each company recorded in Execucomp. AGE is the average age of the manager during his tenure as an executive.

The second and fifth columns, under the heading EXEC show the results when all executives are included in the sample over which the regression is estimated. The third and sixth columns, under the heading CEO & CFO, show the results when only executives who ended their careers as CEO or CFO included in the sample over which the regression is estimated. The fourth and seventh columns, under the heading CEO, show the results when only executives who ended their careers as CEO are included in the sample over which the regression is estimated. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7
Univariate Relation Between Executive Fixed Effects on Various Corporate Outcomes

Independent Variable	Dependent Variable	
Estimated fixed effect from Eq. (1) for manager m when Z is the dependent variable and Z is:	Estimated fixed effect from Eq. (1) for manager m when ETR is the dependent variable	Estimated fixed effect from Eq. (1) for manager m when $CASH ETR$ is the dependent variable
<i>ETR</i>		0.155***
<i>CASH ETR</i>	0.090***	
<i>EBITDA</i>	0.276***	-0.116
<i>EARNINGS BEFORE TAX</i>	0.298***	-0.096
<i>R&D</i>	-0.031	-0.257*
<i>ADVERTISING</i>	-0.116	-0.274
<i>SG&A</i>	0.004	0.034
<i>CASH FLOW FROM OPERATIONS</i>	0.249***	0.152
<i>INTEREST COVERAGE</i>	0.000	0.000
<i>CAPITAL EXPENDITURES</i>	0.019	0.012
<i>PERCENTAGE CHANGE IN SALES</i>	0.012	-0.040
<i>LEVERAGE</i>	-0.178***	-0.064
<i>CASH HOLDINGS</i>	0.025	0.128***
<i>DIVIDENDS</i>	-0.015	0.999

This table presents tests of association between manager ‘style’ and their proclivity to avoid taxes. Each entry in the table represents the coefficient β_1 from the following model run separately (univariately) for each independent variable listed above:

$\hat{\alpha}_m^Y = \beta_0 + \beta_1 \hat{\alpha}_m^Z + u$. In this model, $\hat{\alpha}_m^Y$ is the estimated fixed effect for manager m when Y (ETR or $CASH ETR$) is the dependent variable in Eq. (1). $\hat{\alpha}_m^Z$ is the estimated fixed effect for manager m when Z is the dependent variable in Eq. (1), and Z is one of the following: *EBITDA*, *EARNINGS BEFORE TAX*, *RESEARCH & DEVELOPMENT*, *ADVERTISING*, *SELLING, GENERAL, & ADMINISTRATIVE*, *CASH FLOW FROM OPERATIONS*, *INTEREST COVERAGE*, *CAPITAL EXPENDITURES*, *PERCENTAGE CHANGE IN SALES*, *LEVERAGE*, *CASH HOLDINGS*, *DIVIDENDS* (all of which are defined in table 2). The estimate of β_1 for each regression is presented in the table. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.