

Military experience and corporate tax avoidance

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Abstract We find that managers with military experience pursue less tax avoidance than other managers and pay an estimated \$1–\$2 million more in corporate taxes per firm-year. These managers also undertake less aggressive tax planning strategies with smaller tax reserves and fewer tax havens. Although they leave tax money on the table, boards hiring these managers benefit from reductions in other gray areas in corporate reporting. The broad implications are as follows: for employee selection, boards can consider employees' personal characteristics as a control mechanism when outputs are difficult to contract ex ante or measure ex post.

Keywords Tax avoidance · Corporate financial reporting · Military experience

JEL Classification H25 · H26 · M12 · M14 · M41 · G30 · G32

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1 Introduction

Is military experience of the Chief Executive Officers (CEOs) associated with less corporate tax avoidance? Recent descriptive evidence suggests this possibility. Using confidential tax return data, the Internal Revenue Service (2013) finds that the small businesses located in military communities are highly compliant in their income tax reporting. However, as CEOs of public companies have a fiduciary duty to their shareholders, it is unclear whether this evidence would also apply to their corporate decision making.

A prior study by Dyreng et al. (2010, p. 1185) shows that corporate tax avoidance does vary with changes of CEOs, but their evidence is unable to explain the variation using commonly available biographical characteristics such as educational background, gender, or age.¹ In this paper, we manually collect the military experience—a less common and less obvious personal characteristic—of S&P 1,500 CEOs to re-examine the effect of CEOs on firms' tax avoidance strategies. We also introduce a new econometric technique into the accounting literature to disentangle manager effects from firm effects, so that we can also re-examine the influence of various common biographical characteristics.

Why would military experience be associated with corporate tax avoidance? First, managers with military experience share common values related to government legitimacy and government allegiance generally—in a way that goes beyond “following the rules.” Such sense of allegiance to, or a belief in the legitimacy of, government structures could explain why military managers are less aggressive about reducing corporate tax burdens. Second, CEOs with military experience could themselves believe that using more tax-aggressive means of avoiding taxation is less ethical.² If so, these managers would avoid less corporate tax than other managers. When asked by *Fortune Magazine* why one in every four Lockheed Martin employees has served in the military, the CEO, Robert Stevens, remarked:³

We don't hire veterans because I'm a veteran. We hire veterans because it's good business. They have courage, integrity, honor and character. And they understand service and sacrifice in the interests of others. All that makes them good for our company and good for our business. It's the right thing to do, and frankly, it's the very least we can do.

¹ Bamber et al. (2010, p. 1153) also discuss this observation.

² We do not claim that tax avoidance is unethical. We note that Judge Learned Hand once stated: “Anyone may arrange his affairs so that his taxes shall be as low as possible; he is not bound to choose that pattern which best pays the treasury. There is not even a patriotic duty to increase one's taxes. Over and over again the Courts have said that there is nothing sinister in so arranging affairs as to keep taxes as low as possible. Everyone does it, rich and poor alike and all do right, for nobody owes any public duty to pay more than the law demands” [Gregory v. Helvering 69 F.2d 809, 810 (2d Cir. 1934), aff'd, 293 U.S. 465, 55 S.Ct. 266, 79 L.Ed. 596 (1935)]. Our conjecture about the effect of military experience is motivated by prior research and anecdotes about military value and culture (e.g., Bamber et al. 2010; Benmelech and Frydman 2015). Examining the voting patterns of accounting standard setters, Jiang et al. (2014) also find that board members with military experience are more likely to cast dissenting votes.

³ <http://archive.fortune.com/galleries/2012/fortune/1205/gallery.500-military-ceos.fortune/6.html>.

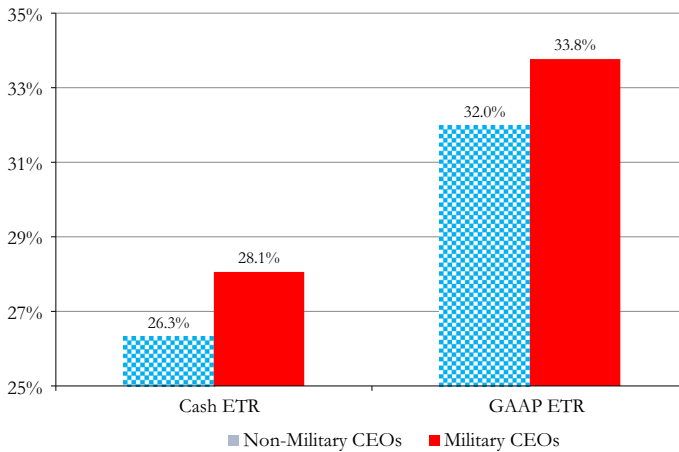


Fig. 1 CEOs with military experience and firms' effective tax rates (ETRs). This figure compares *Cash/GAAP ETRs* between CEOs with and without military experience. The checked blue bar (left) represents non-military CEOs, where the solid red bar (right) represents military CEOs (Color figure online)

Our conjecture is evident in the raw data. Figure 1 shows the average effective tax rates (ETRs) for firms with and without CEOs with military experience for our sample of S&P 1,500 firms. It shows that firms headed by CEOs with military experience report ETRs that are about 2 % points higher across our sample. In our analysis, we examine whether military experience is robustly associated with less tax avoidance, controlling for known determinants of cross-sectional variation in tax planning opportunities, managerial incentives, other CEO characteristics, and various time and industry effects.

Understanding how executive characteristics affect firm tax avoidance is important for several reasons. First, it challenges the traditional assumption that firm tax avoidance is only determined by firm performance or operating environment. To date, the tax literature typically assumes that manager-specific styles are subsumed by their incentives to maximize shareholder values.⁴ In contrast, other recent studies show that manager-specific styles explain many non-tax corporate strategies.⁵

Second, analyzing the relationship between tone at the top and tax avoidance has implications for tax enforcement policy. Personal characteristics of managers predict tax enforcement outcomes in some settings (Joulfaian 2000; DeBacker, Heim, and Tran 2015).⁶ Our evidence similarly suggests that the IRS could incorporate executive-level characteristics into its audit detection models.

⁴ Crocker and Slemrod (2005) also show that, to dampen corporate tax evasion in principal-agency model, it is more effective to impose penalties directly on managers than on shareholders.

⁵ For instance, Weisbach (1995), Chevalier and Ellison (1999), Bertrand and Schoar (2003), Bamber et al. (2010), Ge et al. (2011), and Graham et al. (2012).

⁶ Although some academic research uses the term "evasion," we use the term "avoidance" throughout our manuscript, because from the IRS's point of view, evasion connotes illegal tax reduction. Corporate tax rules are generally subject to substantial judgment about the application of complex law to complex facts, so most proposed audit adjustments by tax authorities relate to issues that at best are viewed as aggressive by tax authorities, not strictly as evasion with attendant penalties. Hanlon et al. (2007) document the rare application of penalties in the context of corporate tax compliance.

Third, it sheds light on why some managers work harder to avoid corporate taxes while others do not. As aggressive tax planning is hard to detect and the associated penalties are infrequent and often small (Weisbach 2002; Slemrod 2004; Desai and Dharmapala 2006; Graham and Tucker 2006; Hanlon et al. 2007), it suggests that many firms leave money on the table, which is a puzzle to researchers (Slemrod 2004, 2007; Desai and Dharmapala 2006; Hanlon and Slemrod 2009; Graham et al. 2014). Recently, several high-profile multinational firms (e.g., Starbucks, Google, General Electric) received notoriety for structuring their intellectual property so as to pay very little tax on global profits. Some of these CEOs appear to be willing to avoid more tax or even be considered tax aggressive.⁷ This raises the question again of what types of managers are willing to pursue aggressive tax avoidance strategies.

Our main findings are summarized as follows. Using the econometric technique proposed by Abowd et al. (1999) to simultaneously disentangle firm and manager fixed effects, we show that military experience is the only managerial characteristic that robustly explains the heterogeneity in corporate tax policies. Further, we provide quantifying evidence that about 50 % of the variation in firms' ETRs is driven by heterogeneous manager fixed effects. We fail to find that commonly observed personal characteristics (such as age, tenure, gender, and financial education) explain manager-specific heterogeneity in corporate tax avoidance, confirming the findings in Dyreng et al. (2010).⁸ The only exception is military service experience: our empirical evidence consistently indicates that firms headed by CEOs with military experience engage in less tax avoidance. Specifically, firms headed by managers with prior military experience have 1–2 % higher ETRs than firms led by other managers. This difference equates to \$1–\$2 million more tax paid per firm-year and is economically significant. The negative relation between military experience and tax avoidance persists even with a wide set of controls for size, growth, book and tax reporting differences, operations and profitability, differences in macroeconomic environment (through year fixed effects [FEs]), and differences in industry operating environment (through industry FEs). Our results are also robust to controlling for corporate governance, institutional ownership, CEO pay-for-performance sensitivities, local religiosity of firm headquarters, and political ideology of managers, and to excluding military, defense, and oil and gas industries.

We also exploit a recently introduced accounting standard to measure aggressive tax planning based on managers' tax reserves. Effective in 2007, Financial Accounting Standards Board's Interpretation No. 48 (FIN 48) requires firms to disclose tax reserves for unrecognized tax benefits (UTB) for positions that fail to meet a "more likely than not" threshold. Prior studies show that the level of UTB indicates the extent of aggressive tax planning activities (Lisowsky et al. 2013). We find that firms headed by military managers have 50–60 % lower tax reserves for

⁷ For example, interviewed by media, Google's CEO responds, "I am very proud of the structure that we set up," and calls its tax avoidance "just capitalism" (Telegraph 2012; Independent 2013). And GE—claiming a tax benefit of \$3 billion while reporting worldwide profits of \$14 billion (New York Times 2011)—is regularly in the news where its CEO is "happy to defend" its taxes.

⁸ We focus on the heterogeneity in corporate ETRs—the broadest measures for capturing the full continuum of firms' tax planning—between managers with military experience and those without.

UTB than firms headed by other managers, which suggests that military managers engage in less aggressive or risky tax strategies. We also find that these managers use fewer tax havens, a common tax-saving tactic for multinational income shifting (Desai and Dharmapala 2006; Dyreng and Lindsey 2009).

As the decision process of corporate boards is unobservable (Kaplan et al. 2012), we investigate whether the hiring of military CEOs is an endogenous choice that is explained by firm characteristics using three empirical strategies. First, we use propensity score matching (PSM), and find that firms headed by managers with military experience report economically and statistically higher ETRs than their propensity-matched peers who were similarly likely to have CEOs with military experience. Second, we show that our results are robust to using Instrumental Variable (IV) estimation for a CEO's likelihood of having military experience. We also exploit the cross-sectional heterogeneity in military experience, and find that managers who attended a military academy, served longer, or served during major military conflict do not avoid less tax than other military managers. Collectively, these results suggest that our primary evidence cannot be entirely explained by endogenous board selection.

We consider additional interpretations for our results. The first potential explanation is that CEOs with military experience are more conditioned to follow rules. However, as tax avoidance generally and even most forms of tax aggressiveness are not illegal per se, this interpretation is less applicable in the tax setting than in settings such as fraud. The second potential explanation is (economic) patriotism. U.S. managers could view paying more corporate tax as a form of patriotism toward the U.S. government.⁹ However, our results remain similar after we control for whether managers were born in the United States. Further, the higher ETR does not arise solely from U.S. operations. Thus, we conclude patriotism does not explain our results.

Why do boards hire these managers if they leave tax money on the table? Do boards gain benefits in other corporate reporting dimensions? We examine several gray areas in corporate reporting that are between legitimacy and outright fraud, because they are more qualitatively similar to aggressive tax planning. We find that firms headed by military managers are similarly less likely to be targets in class action lawsuits, to announce financial restatements, and to backdate the exercise dates of their granted options. We also show that firms led by these managers have smaller total current accruals and discretionary current accruals, which are traditional proxies for probable earnings management. Collectively, these results indicate that firms hiring these managers benefit from reductions in other gray areas in corporate reporting.

Our paper makes two main contributions. We are the first to identify a demographic trait of managers that is robustly associated with corporate tax avoidance behavior. Second, we are the first to empirically document that about half

⁹ In 2008, Vice Presidential nominee Joe Biden exhorted: "It's time to be patriotic ... time to help get America out of the rut" ("Biden calls paying higher taxes a patriotic act"; *Associated Press* 2008). In 1942 Donald Duck promoted paying taxes to "fight the Axis," and taxpayers filed tax returns more promptly than ever before (<http://www.disneyfilmproject.com/2010/09/new-spirit.html>).

of the variation in firms' ETRs is attributable to CEO-specific heterogeneity, even after controlling for time-invariant firm characteristics.

Notwithstanding the above, there are some caveats and limitations in our analyses. First, although our above results show that CEOs' military experience robustly explains their tax avoidance strategies, we find that it explains approximately 4 % of the variation in manager fixed effects on corporate tax avoidance. Thus, there is room for further research in this area. For example, it could be fruitful to identify manager characteristics of chief financial officers (CFOs) or non-top executives such as tax directors on tax avoidance strategies. We encourage more research to better understand the influence of other executive-level determinants on firms' tax avoidance strategies.

Second, while boards may wish to hire military managers in order to achieve (or avoid) certain financial outcomes, the decision process could easily operate in reverse, where certain types of managers could self-select into companies with different corporate cultures. A military officer looking for a job in the private sector may avoid firms with entrepreneurial cultures and instead prefer to work for companies where controls and operating procedures are enforced meticulously. In such a case, the presence of a military CEO may not cause less tax avoidance. Instead, it would be a side effect of a corporate culture that stresses strict regulatory compliance or discourages strategic reporting, such as viewing the tax department as a profit center (see Robinson et al. 2010). Even though we document that our results are robust to using an IV and not sensitive to industry effects, we cannot completely rule out the possibility that there could be a matching between executives and firms, which is a common problem to all papers in this stream of literature.

The broad implications for employee selection and contract design are as follows: For employee selection, if personal characteristics are associated with the styles of corporate policies, boards with specific preferences can consider hiring employees with specific personal characteristics. This would be a useful control mechanism, substituting for direct monitoring when the output is difficult to contract ex ante or even to measure ex post. If boards have less fear that military managers will steal from shareholders, then boards should design contracts to incentivize these managers to invest more in tax planning strategies, consistent with the implications in Desai and Dharmapala (2006) and Desai et al. (2007). Designing contracts with proper incentives on tax efficiency could be more effective than relying on personal reputation risk as the constraining mechanism, as prior studies show that top executives face virtually no reputational or financial risk due to tax aggressive behavior (Crocker and Slemrod 2005; Gallemler et al. 2014).

2 Data and methodology

2.1 Sample data

Our sample starts with all S&P 1,500 managers (including S&P 500, S&P Mid Cap 400, and S&P Small Cap 600 indices) listed in the ExecuComp database from 1992

to 2011. We use *Marquis Who's Who* to identify the managers' background characteristics. This source explicitly requires participants to state their past military records, which introduces a new characteristic over those studied by Dyreng et al. (2010). We first extract the full names of CEOs and manually search their biographical information. If an exact match is not found, we search using the manager's surname and first initial. If multiple matches are returned, we use middle names and/or career histories to identify the correct manager. In total, we manually identify 4,886 managers, who account for 76.1 % of the S&P 1,500 managers we searched.

We obtain corresponding firm-level variables from Compustat, requiring complete financial information and at least \$10 million in total assets (*AT*). Consistent with most tax research (e.g., Mills and Newberry 2005; Hanlon 2005), we exclude firms incorporated outside the United States, firms in the utilities industry (SIC codes 4900-4999), and financial institutions (SIC codes 6000-6999). Our final sample consists of 9,738 firm-year observations of 1,787 firms from 1992 to 2011. For tests on *k*-year long-run tax avoidance, the sample period spans *k* years after 1992 to 2011. For tests of tax haven use, we use the data in Exhibit 21 of firms' 10-K filings generously provided by Scott Dyreng.

2.2 Tax avoidance measures

The dependent variable, tax avoidance, is either *Cash ETR* or *GAAP ETR*. *Cash ETR* is the cash effective tax rate, defined as income taxes paid, divided by pre-tax income minus special items following Dyreng et al. (2010). *GAAP ETR* equals income tax expense, divided by pre-tax income minus special items. Consistent with Gupta and Newberry (1997), we truncate both ETRs at [0,1] to avoid the influence of outliers. We retain firms with negative *ROA*, which represent only 4.5 % (untabulated) of our sample. Our results are robust to dropping firms with negative *ROA* or using ETRs greater than one or less than zero.

Cash ETR and *GAAP ETR* represent different sources of explicit tax avoidance behaviors. The *Cash ETR* captures all sources of non-conforming tax avoidance, including temporary differences between book and taxable income, permanent differences, credits, and applicable national and sub-national (e.g., provincial, state, city) tax rates. However, the *GAAP ETR* ignores temporary differences. Moreover, the former depends on the actual timing of cash flow, whereas the latter captures tax avoidance measures that impact earnings through income tax expense. To the extent that financial accruals management increases the pre-tax income denominator, *Cash ETR* could falsely indicate tax avoidance (Guenther et al. 2014), but the *GAAP ETR* would not be affected. We argue that once we hold all other factors constant, a lower ETR represents a more aggressive point on the tax-planning continuum. We choose a limited set of tax avoidance measures that are available in all years to maintain parsimony on that dimension and conduct a rich set of analyses and robustness tests.

2.3 Managerial characteristics

Managerial characteristics include *Military Experience*, *Age*, *Tenure*, *Male*, *MBA Education*, *Great Depression*, *Graduation in Recession*, *Overseas*, *Republican Affiliation*, and *% Stock Options*. We define these below and predict their effect on tax reporting.

For *Military Experience*, we follow Bamber et al. (2010) and Benmelech and Frydman (2015) to classify a manager as a military manager if *Marquis Who's Who* indicates he or she has military service in the U.S. Air Force, Army, Marines, or Navy (or their foreign equivalents), or other related military experience.¹⁰ Our primary conjecture is that military experience of CEOs is associated with lower tax avoidance.

Older managers often face different incentives or have different beliefs, risk preferences, or cognitive abilities than younger managers (Chevalier and Ellison 1999; Hong et al. 2000; Yim 2013). On balance, we expect that older managers will avoid less tax, because they will be more risk averse. We obtain *Age* from ExecuComp, using biographical databases if *Age* is missing.

We include manager tenure because managers with long tenure exhibit different styles of corporate policies than those with short tenure (Allgood and Farrell 2003). On balance, we expect that managers with longer *Tenure*, controlling for their age, will avoid more tax because of reduced career concerns (Holmstrom and Ricart i Costa 1986; Holmstrom 1999). We obtain *Tenure* from Compustat and ExecuComp.

Gender affects performance in various settings (Barber and Odean 2001; Atkinson et al. 2003; Kumar 2009; Huang and Kisgen 2013), even though female managers only represent a small fraction (<2 %) of leaders of S&P 1,500 firms. We expect that male managers might be more aggressive in their corporate tax avoidance, although we note that Dyreng et al. (2010) document no gender difference in tax avoidance. We obtain *Gender* from ExecuComp.¹¹

We examine whether managers who are financially sophisticated (Bartov et al. 2000; Bonner et al. 2003) avoid more tax. We determine whether the CEO has an *MBA* degree (our proxy for financial sophistication) from *Who's Who*, and we expect that managers with an *MBA* will avoid more tax. Our results are robust to using a top-10 *MBA* program indicator.

Malmendier et al. (2011) predict and find that managers choose more conservative corporate policies if they were raised during the Great Depression (born between 1920 and 1929). We predict that these managers also avoid less tax, consistent with adopting conservative policies.

Schoar and Zuo (2016) show that managers who graduate in a tough economic environment face different career trajectories and choose more conservative

¹⁰ Other related military experience includes Coast Guard and military reserve forces. Our results are robust whether military experience is defined narrowly or broadly. Unfortunately, the *Marquis Who's Who* does not necessarily disclose combat experience. However, see Table 4 for tests of academy training or major conflict experience.

¹¹ As military service is primarily a male-dominated profession, women are still greatly under-represented in the military: only one female CEO in our sample, Sandy B. Cochran, has military experience.

corporate policies. Clement and Law (2015) also find that analysts who begin their career in a recession make more conservative forecasts. We construct a *Graduation in Recession* indicator variable that equals one if a manager turns 24 during an NBER recession year (Schoar and Zuo 2016). We predict that managers who graduate in recession years avoid less tax.

Recent studies show that firms with foreign independent directors make better cross-border mergers and acquisitions (Masulis et al. 2012), and that managers who were born overseas display home culture influences in their corporate tax reporting (DeBacker et al. 2015). We construct an *Overseas* indicator variable that equals one if a manager was born outside the United States. Motivated by these studies, we predict that non-U.S. managers avoid more tax.

We also consider whether corporate tax avoidance varies with managers' political affiliation. Hutton et al. (2014) find that Republican managers choose more conservative corporate policies. If Republican managers are similarly conservative in tax reporting, they should avoid less tax (Christensen et al. 2015). But Republican platforms typically advocate smaller government spending, suggesting more tax avoidance. We construct a *Republican Affiliation* indicator variable that equals one if a manager self-identifies as a Republican in *Marquis Who's Who*, and zero otherwise. Because political affiliation is not well populated, we likely undercount *Republican Affiliation*.

Recent studies show that managers' compensation is an important determinant of corporate tax avoidance (Desai and Dharmapala 2006; Rego and Wilson 2012; Gaertner 2014; Powers et al. 2016). We use ExecuComp data to define % *Stock Options* as the value of stock options granted divided by total compensation, following Desai and Dharmapala (2006). Although % *stock options* will capture CEO incentives, it is not a personal fixed trait. We expect that managers avoid more tax if options comprise a significant portion of their compensation packages.

2.4 Firm characteristics

Several firm-level determinants have been identified in prior literature that affect corporate tax avoidance (Mills 1998; Manzon and Plesko 2002; Frank et al. 2009; Chen et al. 2010; Dyreng et al. 2010). They include return on assets in year t (operating income $PI-XI$, scaled by lagged total assets AT); corporate leverage in year t (long term debt $DLTT$, scaled by lagged AT); a net operating loss indicator variable (that equals one when the loss carry-forward balance $TLCF$ in year $t - 1$ is positive, and zero otherwise); change in loss carry-forward in year t (change in $TLCF$, scaled by lagged AT); foreign income in year t (foreign pretax income $PIFO$, scaled by lagged AT); property, plant, and equipment in year t ($PPENT$, scaled by lagged AT); intangible assets in year t (intangible assets $INTAN$, scaled by lagged AT); equity income in year t (equity income $ESUB$, scaled by lagged AT); firm size at the beginning of year t (natural logarithm of AT); market-to-book ratio at the beginning of year t (market capitalization $PRCC_F \times CSHPRI$, scaled by AT); and R&D expenditure in year t (XRD scaled by lagged AT).

These control variables can be broadly classified into three categories. The first group includes firm size and growth opportunities (firm size and market-to-book

ratio). The second group controls for differences between the book and tax reporting environments that can influence ETRs (property, plant, and equipment, equity income, intangible assets, and R&D). The last group controls for firms' operations and profitability (return on assets, leverage, foreign income, loss position, and change in tax loss). Size and market-to-book ratio are lagged measures in year $t - 1$. All other firm-level variables are measured in year t , because Chen et al. (2010) demonstrate that these variables correlate with firms' tax avoidance contemporaneously. Appendix summarizes the construction of our variables.

We also control for year and industry FEs. Year FEs control for macroeconomic changes in firms' operating environment. Industry FEs ensure that the results are not driven by differences in industry characteristics. We use the 12 Fama and French (1997) industry classifications in our main tests, and our results are robust to using 3-digit SIC instead (reported in Table 9). Because firms' tax avoidance is likely to be correlated within firms, we cluster all robust standard errors at the firm level. Our results are robust to clustering by both firm and year (untabulated).

3 Main results

3.1 Univariate evidence

Table 1, Panel A presents the summary statistics of the variables used in this study. The main dependent variables are two tax avoidance measures—*Cash ETR* and *GAAP ETR*. We then present 10 personal characteristics of managers, followed by 11 firm-level fundamental variables. A typical CEO in our sample is a 56-year-old male with 4 years of experience. A quarter of managers have an MBA education and about one-fifth graduated in a recession. Only a small fraction of managers were born overseas or are self-reported Republicans. On average, 20 % of their total compensation is in the form of stock options.

Table 1, Panel B summarizes the difference in firms' ETRs by managerial characteristics. All observations are sorted into two categories. *High (Low)* refers to those observations with a managerial characteristic above or at (below) median. In univariate analysis, ETRs are significantly and consistently associated with only a few managerial characteristics: *Great Depression*, *Military Experience*, *MBA Education*, and *Tenure* (in order of average economic magnitudes). Managers avoid less tax if they experienced the Great Depression or have military experience. Managers with longer tenure and MBAs avoid more tax. Panel C shows relatively modest correlations among CEO characteristics. Figure 2 summarizes the share of S&P 1,500 CEOs with military experience and their firms' ETRs over the years. Military experience is a shrinking characteristic of our executive workforce: Fig. 2 shows a steady downward-sloping trend with ETRs over the years. We use multivariate analysis to learn whether these characteristics remain important after controlling for all managerial, firm, industry, and time effects.

Table 1 Summary statistics

Panel A: Summary statistics						
	Mean	Standard deviation	P25	P50	P75	Number of observations
<i>Main variables</i>						
Cash ETR	0.265	0.148	0.165	0.269	0.351	9,738
GAAP ETR	0.322	0.110	0.279	0.347	0.381	9,738
FIN 48 UTB	0.022	0.062	0.004	0.009	0.020	2,019
Number of tax havens	0.948	0.776	0	0.693	1.609	4,202
<i>Managerial characteristics</i>						
Military experience	0.094	0.293	0	0	0	9,738
Age	55.708	7.896	50	56	61	9,549
Tenure	4.436	3.309	2	4	6	9,738
Male	0.981	0.135	1	1	1	9,738
MBA education	0.244	0.429	0	0	0	9,738
Great Depression	0.026	0.158	0	0	0	9,738
Graduation in recession	0.181	0.385	0	0	0	9,738
Overseas	0.040	0.196	0	0	0	9,738
Republican affiliation	0.053	0.224	0	0	0	9,738
% Stock options	0.208	0.276	0	0	0.418	9,541
<i>Firm characteristics</i>						
Return on assets	0.132	0.114	0.067	0.116	0.182	9,738
Leverage	0.193	0.187	0.012	0.163	0.300	9,738
NOL indicator	0.459	0.498	0	0	1	9,738
Change in NOL	0.082	0.407	0.000	0.000	0.043	9,738
Foreign income	0.017	0.030	0.000	0.000	0.024	9,738
PPE	0.327	0.257	0.134	0.256	0.458	9,738

Table 1 continued

Panel A: Summary statistics						
	Mean	Standard deviation	P25	P50	P75	Number of observations
Intangible assets	0.189	0.214	0.017	0.110	0.295	9,738
Equity income	0.001	0.005	0.000	0.000	0.000	9,738
Firm size	7.044	1.476	5.978	6.892	7.952	9,738
Market-to-book	1.701	1.538	0.774	1.266	2.097	9,738
R&D expenditure	0.025	0.048	0.000	0.000	0.030	9,738

Panel B: Difference in ETRs by managerial characteristics						
	Cash ETR			GAAP ETR		
	High/indicator = 1	Low/indicator = 0	Difference	High/indicator = 1	Low/indicator = 0	Difference
<i>Managerial characteristics</i>						
Military experience	0.281	0.264	0.017	B 0.340	0.321	0.020
Age	0.212	0.211	0.001	A 0.306	0.306	0.000
Tenure	0.273	0.275	-0.002	A 0.329	0.332	-0.002
Male	0.265	0.295	-0.030	B 0.322	0.320	0.003
MBA education	0.254	0.269	-0.015	A 0.316	0.325	-0.009
Great Depression	0.309	0.264	0.045	A 0.349	0.322	0.027
Graduation in recession	0.270	0.264	0.006	0.325	0.322	0.004
Overseas	0.260	0.266	-0.005	0.303	0.323	-0.020
Republican affiliation	0.270	0.265	0.004	0.334	0.322	0.012
% Stock options	0.246	0.270	-0.025	A 0.332	0.320	0.013

Table 1 continued

Panel C: Correlation coefficients										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Managerial characteristics</i>										
(1) Military experience	1.00	0.13	0.00	0.04	0.11	0.11	0.11	-0.03	0.15	0.04
(2) Age	0.12	1.00	0.26	0.08	-0.01	0.18	0.09	0.01	0.05	-0.06
(3) Tenure	0.00	0.28	1.00	0.01	0.04	-0.02	0.01	0.00	0.00	-0.14
(4) Male	0.04	0.07	0.01	1.00	0.04	-0.01	-0.06	-0.04	0.01	0.03
(5) MBA education	0.11	-0.01	0.03	0.04	1.00	-0.07	0.05	0.00	0.08	0.02
(6) Great Depression	0.11	0.20	-0.02	-0.01	-0.07	1.00	0.07	0.00	0.04	0.01
(7) Graduation in recession	0.11	0.08	0.00	-0.06	0.05	0.07	1.00	0.07	0.07	0.05
(8) Overseas	-0.03	0.01	0.00	-0.04	0.00	0.00	0.07	1.00	-0.01	0.03
(9) Republican affiliation	0.15	0.04	0.00	0.01	0.08	0.04	0.07	-0.01	1.00	0.05
(10) % Stock options	0.02	-0.10	-0.15	0.02	0.02	0.00	0.03	0.03	0.03	1.00

Panel A reports the descriptive statistics of the variables used in this paper. *Cash Effective Tax Rate* is income taxes paid divided by pre-tax income minus special items. *GAAP Effective Tax Rate* is income taxes divided by pre-tax income minus special items. Both tax avoidance measures are truncated at [0,1]. *FIN 48 UTB* is the balance of firms' unrecognized tax benefits reported in their financial statements, scaled by lagged total assets. The data are provided by the Internal Revenue Service's Large Business and International Research Division. *Number of Tax Havens* is the natural logarithm of one plus the number of tax havens reported in Exhibit 21 of a firm's 10-K filings. Panel B reports the difference in ETRs by managerial characteristics. *Military Experience* is an indicator variable that equals one if a manager has previous military experience, and zero otherwise. *Age* is the age of the manager. *Tenure* is the number of years a manager has worked in a firm. *Male* is an indicator variable that equals one if a manager is male, and zero if a manager is female. *MBA Education* is an indicator variable that equals one if a manager holds an MBA degree, and zero otherwise. *Great Depression* is an indicator variable that equals one if a manager was born between 1920 and 1929, and zero otherwise. *Graduation in Recession* is an indicator variable that equals one if a manager graduated during an NBER recession year, and zero otherwise. *Overseas* is an indicator variable that equals one if a manager was born outside the United States, and zero if a manager was born within the United States. *Republican Affiliation* is an indicator variable that equals one if a manager identifies himself/herself as Republican in *Marquis Who's Who*, and zero otherwise. *% Stock Options* is the value of stock options granted divided by total compensation. Additional details on other variables are summarized in [Appendix](#). In Panel B, *High (Low)* refers to sample observations with a managerial characteristic above or at (below) median. The standard errors for *Difference* are clustered at the managerial level. Superscripts A, B, and C represent significance at the 1, 5, and 10 % levels, respectively. Firms with book values of at least \$10 million from 1992 to 2011 are obtained from Compustat. Firms in the utilities industry and financial institutions are excluded. All variables (except indicator and logarithm variables) are winsorized at 1st and 99th percentiles to avoid extreme outliers. Additional details on all variables are summarized in [Appendix](#). Panel C reports the correlation coefficients between military experience and other managerial characteristics. Pearson's correlation coefficients are in the lower left triangle and Spearman's rank correlation coefficients are in the upper right triangle

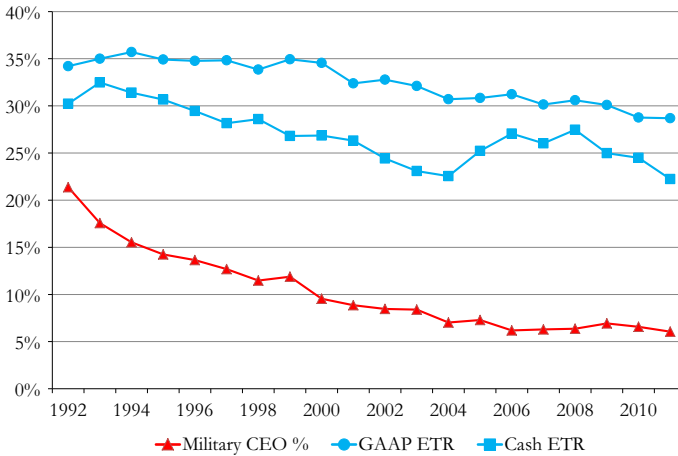


Fig. 2 Time trend. The blue line marked with circle (square) represents the average *Cash* (*GAAP*) *ETRs* of S&P 1,500 firms (with and without military CEOs) in our sample. The red line marked with triangle represents the share of CEOs with military experience in these firms (Color figure online)

3.2 Isolating firm fixed effects

Studies of manager FEs traditionally rely on a small number of top executives who move to different firms (i.e., a mover sample) in order to disentangle firm and manager FEs. Using a mover sample presents several challenges. First, because top executives do not frequently move to other firms, a mover sample is generally small and exhibits a lack of statistical power. For example, the number of top executives in mover samples is 519 in Bertrand and Schoar (2003), 303 in Bamber et al. (2010), and 908 in Dyreng et al. (2010). This is salient in our study, as fewer than 10 % of managers have military service experience. Second, to increase the sample size, prior studies typically include not only CEO/CFO but also other C-suite executives (such as sales directors, general counsels, or chief operating officers) in their sample. It is unclear to what extent these other top executives influence the tone at the top regarding tax avoidance strategies. Third, executives moving to different firms often experience changes in executive function (e.g., promotion from CFO to CEO, or demotion from CEO to another position). Little attention has been paid by researchers to separating manager FEs from these confounding effects. One solution would be to use a full sample, but a least-squares dummy variable (LSDV) estimation with two-way FEs is computationally infeasible due to restrictions in computer memory. Further, LSDV does not allow researchers to recover manager FEs.

To address the above concerns, we use the econometric technique developed by Abowd et al. (1999) (AKM) and recently applied by Graham et al. (2012) in finance literature. They show that, with simple looping procedures, a small degree of personal mobility can offer a rich amount of data to estimate manager and firm FEs simultaneously, even for managers who do not work in more than one firm. Online Supplementary Appendix 1 explains the method in detail.

We first use the AKM method to decompose the variation of ETRs into the following four separate components: (a) firm FEs, (b) manager FEs, (c) firm-level characteristics (including year FEs), and (d) residuals. In Panel A of Table 2, we divide the covariance of ETRs and individual components by the total variance of ETRs. The findings are intriguing—approximately 50 % of the variation in firms' ETRs is driven by manager FEs, followed by residuals (~40 %). However, time-varying firm characteristics, year FEs, and even time-invariant firm FEs together explain <12 % of the total variance in ETRs. The results are consistent with Graham et al. (2012), who show that manager FEs explain 44 % of the total variation in executives' compensation, whereas firm FEs explain as little as 4 %. The joint test of whether all manager FEs equal zero is rejected at the 1 % level (F -statistic: 2.43, $p = 0.00$ for *Cash ETR*; and F -statistic: 2.59, $p = 0.00$ for *GAAP ETR*).¹² Manager FEs are also economically significant. Given that the standard deviation of manager FEs is 0.131 for *Cash ETR* (0.098 for *GAAP ETR*), a one standard deviation change in manager FE leads to an increase of 13.1 % (9.8 %) in *Cash* (*GAAP*) *ETR*. The economic magnitudes are comparable to Dyreng et al. (2010), who use their executive mover sample to show that moving between the top and bottom quartiles of manager FEs results in about an 11 % change in GAAP ETRs. We conclude that corporate tax strategies are significantly influenced by manager styles, even after controlling for firm FEs.

We next analyze to what extent military experience or any other managerial characteristic explains manager FEs on corporate tax avoidance. We regress manager FEs estimated under the AKM method on our various managerial characteristics and report the results in Panel B of Table 2. *Military Experience* is the only managerial characteristic that is significantly positive across both specifications. To facilitate interpretations and comparisons, the estimated coefficients are standardized coefficients. *Military Experience* explains about 3.5–3.9 % (t -statistics: 1.95–1.98) of the variation in manager FEs on corporate tax avoidance.

Finally, Fee et al. (2013) caution that manager turnover and replacement selection by boards is frequently an endogenous event, so we acknowledge that some of the manager FEs above could reflect the style selected by the boards rather than the idiosyncratic style brought by the manager. Sections 3.7 and 3.8 address endogeneity through propensity score matching and instrumental variable estimation.

3.3 Pooled OLS regression results

To facilitate comparing our results with those in prior studies, in this section we use a traditional OLS framework and estimate the following baseline regressions:

$$\text{Cash ETR}_{j,t} = \alpha + \beta_1 \text{CEO Characteristics}_m + \beta_2 \text{Firm Characteristics}_{j,t} + \beta_3 \text{Fixed Effects} + \varepsilon_{j,t} \quad (1)$$

¹² Fee et al. (2013) caution against using a standard F -test for joint significance of manager FEs, as standard asymptotic theory does not apply and the properties of these tests are unknown. However, using Monte Carlo simulations, Orme and Yamagata (2006) show that standard F -test procedures perform well even under non-normality or in a small sample.

Table 2 Disentangling manager effects from firm effects

	Panel A: Decomposition of ETRs	
	covariance(Cash ETR, component)	covariance(GAAP ETR, component)
	variance(Cash ETR) (1)	variance(GAAP ETR) (2)
<i>Descriptions</i>		
Manager fixed effects	0.538	0.498
Residuals	0.437	0.387
Firm-level characteristics	0.020	0.110
Firm fixed effects	0.005	0.005
Total variation	1.000	1.000
<i>F</i> -test that manager fixed effects = 0	2.43	2.59
	Panel B: Explaining manager fixed effects	
	Dependent variables	
	Cash ETR fixed effects (1)	GAAP ETR fixed effects (2)
<i>Independent variables</i>		
Military experience	0.039 (1.98)	0.035 (1.95)
Age (average)	0.007 (0.39)	0.009 (0.47)
Tenure (average)	-0.010 (-0.70)	-0.004 (-0.23)
Male	-0.011 (-0.67)	0.013 (0.85)
MBA education	-0.032 (-1.80)	-0.016 (-0.86)
Great Depression	0.073 (3.46)	0.008 (0.47)
Graduation in recession	0.031 (1.74)	0.017 (0.93)
Overseas	-0.014 (-0.72)	-0.048 (-2.75)
Republican affiliation	-0.007 (-0.42)	0.048 (2.24)
% Stock options (average)	-0.001 (-0.07)	-0.002 (-0.15)
Constant	Yes	Yes
Number of observations	2,855	2,855

Table 2 continued

Panel B: Explaining manager fixed effects		
Dependent variables		
	Cash ETR fixed effects (1)	GAAP ETR fixed effects (2)
Adjusted- R^2	0.007	0.004

Panel A decomposes the variation in *Cash/GAAP ETRs* into four components using the estimation method by Abowd et al. (1999) (AKM): (a) manager fixed effects, (b) firm fixed effects, (c) firm-level characteristics (including year fixed effects), and (d) residuals. Panel B uses the manager fixed effects estimated under the AKM method as a dependent variable, where one fixed effect observation is estimated for each manager. *Military Experience* is an indicator variable that equals one if a manager has previous military experience, and zero otherwise. Additional details on all variables are summarized in Appendix. To facilitate interpretation, the estimated coefficients in Panel B refer to beta coefficients, which are comparable within and across specifications. Robust standard errors are reported in parentheses

$$GAAP\ ETR_{j,t} = \alpha + \beta_1 CEO\ Characteristics_m + \beta_2 Firm\ Characteristics_{j,t} + \beta_3 Fixed\ Effects + \varepsilon_{j,t} \tag{2}$$

We regress firm *j*'s effective tax rate in year *t* on managerial characteristics *X*, a *k*-vector of firm-level control variables, and a set of fixed effects. β_1 , captures the influence of the various managerial characteristics (including military experience) on tax avoidance.

Table 3 reports baseline OLS regression results for *Cash ETRs* (columns 1–2) and *GAAP ETRs* (columns 3–4). Columns 1 and 3 report the regression results using only ten managerial characteristics, whereas columns 2 and 4 report the estimated coefficients on ten managerial characteristics, eleven firm characteristics, and industry and year FEs. In this table, *Military Experience* is consistently associated with higher ETRs. Across all four regression specifications, managers with prior military experience report higher ETRs than their non-military counterparts. The estimated coefficients on *Military Experience* for cash (GAAP) ETRs are all significantly positive. Compared to the interquartile range of 18.6 % for *Cash ETRs* (10.2 % for *GAAP ETRs*), these coefficients translate into approximately 7.9–8.3 % (9.1–16.0 %) of the interquartile range, respectively, which is economically meaningful. Based on median firm profitability of \$105 million, firms with military managers pay \$1–\$2 million more tax per firm-year. Further, firms headed by military managers have 2.5–4.4 % higher standardized cash and *GAAP ETRs*. This strongly positive pattern persists even after we control for a wide range of managerial characteristics, firm-level variables, year FEs, and industry FEs.

However, no other CEO characteristic explains both cash and GAAP ETRs in the regressions with the full set of 20 control variables. These non-results are consistent with Dyreng et al. (2010), who find that none of the characteristics they study, including financial education (such as having an MBA or an accounting degree) or personal characteristics (such as age, gender, or tenure), explain variation in

Table 3 CEO characteristics and tax avoidance

	Dependent variables			
	Cash effective tax rate		GAAP effective tax rate	
<i>Independent variables</i>	(1)	(2)	(3)	(4)
Military experience	1.548 (2.01)	1.471 (2.32)	1.630 (3.26)	0.928 (2.48)
Age	0.001 (3.50)	0.000 (1.28)	0.000 (1.99)	-0.000 (-0.18)
Tenure	-0.003 (-5.10)	-0.000 (-0.27)	-0.002 (-4.67)	0.001 (1.28)
Male	-0.034 (-2.23)	-0.024 (-1.83)	0.001 (0.06)	0.000 (0.05)
MBA education	-0.014 (-2.77)	-0.010 (-2.09)	-0.010 (-2.40)	-0.003 (-1.11)
Great Depression	0.024 (1.75)	0.002 (0.22)	0.016 (1.95)	0.000 (0.04)
Graduation in recession	0.003 (0.63)	-0.007 (-1.48)	0.001 (0.19)	-0.005 (-1.60)
Overseas	-0.003 (-0.33)	0.008 (0.79)	-0.019 (-2.22)	0.004 (0.55)
Republican affiliation	0.004 (0.40)	-0.003 (-0.34)	0.009 (1.19)	0.006 (1.03)
% Stock options	-0.029 (-4.41)	-0.027 (-3.64)	0.010 (1.91)	-0.007 (-1.38)
Return on assets		0.103 (4.70)		0.263 (12.99)
Leverage		-0.053 (-4.29)		-0.002 (-0.22)
NOL indicator		-0.045 (-9.73)		-0.013 (-4.22)
Change in NOL		-0.033 (-5.77)		-0.028 (-6.07)
Foreign income		0.104 (1.36)		-0.538 (-9.79)
Property, plant, and equipment		-0.077 (-7.71)		-0.018 (-2.70)
Intangible assets		0.010 (0.89)		0.030 (3.75)
Equity income		-0.588 (-1.64)		-0.874 (-3.35)
Firm size		-0.001 (-0.61)		-0.001 (-0.59)

Table 3 continued

	Dependent variables			
	Cash effective tax rate		GAAP effective tax rate	
Market-to-book		-0.006 (-4.25)		-0.006 (-4.94)
Research and development		-0.278 (-4.60)		-0.191 (-3.51)
Constant	Yes	Yes	Yes	Yes
Year fixed effects	No	Yes	No	Yes
Industry fixed effects	No	Yes	No	Yes
Number of observations	9,370	9,370	9,370	9,370
Adjusted- R^2	0.014	0.142	0.011	0.212

This table reports the pooled OLS regression results. The dependent variables are *Cash Effective Tax Rate* (columns 1–2) and *GAAP Effective Tax Rate* (columns 3–4). *Military Experience* is an indicator variable that equals one if a manager has previous military experience, and zero otherwise. Additional details on all variables are summarized in [Appendix](#). The sample period is from 1992 to 2011. Robust standard errors are clustered at the firm level, and two-tailed *t*-statistics are reported in parentheses. To improve readability, we multiply the estimated coefficients on *Military Experience* by 100

corporate tax avoidance. We find some evidence that *MBA Education* and *% Stock Options* are associated with lower *Cash ETR*, but not *GAAP ETR*. One interpretation of this result is that managers with an MBA education are more knowledgeable about tax planning strategies. If we use top-10 (per *Business Week*) MBA programs (*Top 10 MBA*) to define *MBA Education*, *Top 10 MBA* is insignificant (untabulated) in either regression, but *Military Experience* remains significantly positive.¹³

We also examine whether military managers have higher long-run ETRs, because long-run tax avoidance measures capture stable aspects of firms' tax avoidance (Dyreg et al. 2008). We substitute prior-*k*-year cash or *GAAP ETRs* for the dependent variables. Online Supplementary Appendix 2 reports the results using the full specification for *Cash (GAAP) ETR*. Across both panels, firms headed by military managers have higher ETRs for as long as five prior years, but not beyond (untabulated).¹⁴

¹³ In untabulated results, we directly compare the estimated coefficients between *Military Experience* and *MBA Education*. All *F*-tests testing the equality of these estimated coefficients indicate that the estimated coefficients on *Military Experience* are consistently larger and more statistically significant than the ones on *MBA Education*.

¹⁴ The estimated coefficients on *Military Experience* range from 0.941 % (*t*-statistic: 2.39) to 1.407 % (*t*-statistic: 2.09). The average differences in long-run cash (GAAP) ETRs are economically significant at 7.9–10.0 % (10.4–11.3 %) of the untabulated interquartile range of 14.09 % (9.04 %). In untabulated results, we also consider leading *k*-year long-run ETRs and find that *Military Experience* is associated with higher ETRs up to 7 years in the future.

Table 4 Types of military experience

	Dependent variables									
	Cash ETR	GAAP ETR	Cash ETR	GAAP ETR	Cash ETR	GAAP ETR	Cash ETR	GAAP ETR	Cash ETR	GAAP ETR
<i>Independent variables</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Military experience	2.325 (2.51)	1.159 (2.15)	1.450 (1.96)	0.794 (1.82)	1.450 (1.96)	0.794 (1.82)	2.063 (2.58)	0.906 (1.92)		
× Length of military services	-0.883 (-1.36)	-0.240 (-0.64)								
× Attended military academy			-0.832 (-0.46)	-0.407 (-0.43)						
× Served during no major military conflicts					0.054 (0.04)	0.337 (0.47)				
× World War II							-1.376 (-0.68)	0.297 (0.26)		
× Korean War							-1.605 (-1.11)	0.233 (0.30)		
× Vietnam War							-2.019 (-0.89)	-0.802 (-0.68)		
Army/Marine									3.113 (3.75)	1.142 (2.39)
Navy/Air Force									-0.578 (-0.66)	0.655 (1.20)

Table 4 continued

		Dependent variables											
		GAAP		Cash		GAAP		Cash		GAAP		Cash	
		ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR	ETR
Controls/fixed effects		Identical to Column 2 (4) of Table 3 for Cash (GAAP) ETR											
Number of observations		9,370	9,370	9,370	9,370	9,370	9,370	9,370	9,370	9,370	9,370	9,370	9,370
Adjusted-R ²		0.142	0.211	0.142	0.211	0.142	0.211	0.142	0.211	0.142	0.211	0.143	0.212

This table reports the pooled OLS regression results. The dependent variables are *Cash Effective Tax Rate* and *GAAP Effective Tax Rate*. The specifications are identical to column 2 (4) of Table 3 for *Cash (GAAP) ETR*. *Length of Military Service* is the natural logarithm of the years of military service. *Attended Military Academy* equals one if a manager graduates from the U.S. Military Academy (West Point, New York), the U.S. Naval Academy (Annapolis, Maryland), the U.S. Coast Guard Academy (New London, Connecticut), the U.S. Merchant Marine Academy (Kings Point, New York), or the U.S. Air Force Academy (Colorado Springs, Colorado). *Served During No Major Military Conflicts* equals one if a manager started military service in a year when there was no major military conflict (including World War II, Korean War, and Vietnam War). Robust standard errors are clustered at the firm level, and two-tailed *t*-statistics are reported in parentheses. To improve readability, we multiply the estimated coefficients on *Military Experience* by 100

3.4 Types of military experience

We next explore whether the type of military experience affects aggressive tax planning. First, we examine the length of military experience by interacting *Military Experience* with *Length of Military Service*, defined as the natural logarithm of the years of military service. Columns 1–2 of Table 4 show that the estimated coefficients on the interactions are insignificant, providing no evidence that military managers who serve longer avoid less tax.

Second, we examine whether attending a military academy or serving during a major military conflict matters. We interact *Military Experience* with two additional indicators: (1) *Attended Military Academy* equals one when a manager graduates from the U.S. Military Academy at West Point, the U.S. Naval Academy, the U.S. Coast Guard Academy, the U.S. Merchant Marine Academy, or the U.S. Air Force Academy, and (2) *Served During No Major Military Conflicts* equals one when a manager started military service in a year when there were no major military conflicts (i.e., World War II, Korean War, and Vietnam War). Untabulated results show that 12.7 % (35.3 %) of military managers graduated from a military academy (served when there was no military conflict). The estimated coefficients on (*Military Experience* × *Attended Military Academy*) in columns 3–4 and (*Military Experience* × *Served During No Major Military Conflicts*) in columns 5–6 of Table 4 are all insignificant, although the estimated coefficients on the main variable of interest, *Military Experience*, remain significantly positive.¹⁵

We also examine the influence of specific veteran cohorts. We construct indicators for three major military conflicts: World War II, Korean War, and Vietnam War, respectively. If our results simply capture the heterogeneity of different veteran cohorts, we should expect significant results on the interaction of *Military Experience* and any of these war indicators. About 70 % (untabulated) of military managers served during one of these major conflicts. Columns 7–8 show that the estimated coefficients of all indicator variables are insignificant, so we conclude our results are not driven by specific cohorts.

Finally, we consider the branch of military service. Groysberg et al. (2010) argue that the Navy and Air Force shape more process-oriented leaders due to their complex logistics and expensive weapons systems. In contrast, the Army and Marine Corps emphasize flexibility to meet changing battlefield conditions, where an order issued by a commander outlines a general objective, known as “commander’s intent” (p. 84). Columns 9–10 of Table 4 show the results from re-estimating our baseline regressions substituting Navy/Air Force and Army/Marine for *Military Experience*. We find that Navy/Air Force managers are no different than other managers, but that Army/Marine managers report higher ETRs. We interpret this result as consistent with such managers expressing a “commander’s intent” or tone at the top about tax planning, whereas Navy/Air Force managers appear more likely to confirm the recommendations of highly integrated

¹⁵ We would like to examine the difference between officer and enlisted experience, but this information is not regularly disclosed in *Who’s Who*. However, if officers are more likely to stay in the military longer, then our additional analyses using *Length of Military Services* or *Attended Military Academy* also provide indirect evidence that rank does not determine tax avoidance.

Table 5 Unrecognized tax benefits (UTB) balances

	All firms		Firms with positive UTB	
	Dependent variable: <i>Unrecognized tax benefits (UTB)</i>			
<i>Independent variables</i>	(1)	(2)	(3)	(4)
Military experience	-1.122 (-1.81)	-1.311 (-2.02)	-1.194 (-1.84)	-1.417 (-2.04)
Return on assets		-0.017 (-0.40)		-0.012 (-0.24)
Leverage		-0.021 (-1.06)		-0.021 (-1.04)
NOL indicator		-0.015 (-1.61)		-0.017 (-1.70)
Change in NOL		-0.000 (-0.03)		0.003 (0.45)
Foreign income		0.166 (1.59)		0.173 (1.59)
Property, plant, and equipment		0.007 (0.37)		0.006 (0.30)
Intangible assets		0.029 (0.92)		0.031 (0.96)
Equity income		-0.732 (-1.40)		-0.747 (-1.37)
Firm size		0.005 (3.20)		0.005 (2.96)
Market-to-book		0.009 (1.82)		0.009 (1.74)
Research and development		0.050 (0.81)		0.067 (0.85)
Constant	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Number of observations	2,019	2,019	1,917	1,917
Adjusted R^2	0.140	0.208	0.139	0.208

This table reports the results of pooled OLS regressions. The dependent variable is *UTB*, defined as the UTB divided by lagged total assets. The data are provided by the Internal Revenue Service's Large Business and International Research Division. *Industry fixed effects* are based on Fama–French 12 industry classification. The sample period is from 2007 to 2011. All corresponding financial variables are obtained from Compustat. Robust standard errors are clustered at the firm level, and two-tailed *t*-statistics are reported in parentheses

tax department processes. We do not want to stretch this interpretation too far, however, because we observe no difference between the branches when we re-estimate weighted-least-squares regressions, which correct the sampling weight by the inverse of the probability of observing a particular type of military professional.

3.5 Unrecognized tax benefits (UTB) balances

A recent accounting interpretation by the FASB, FIN 48, requires all firms to report their previously non-disclosed UTB balances starting in 2007. Firms must now record and disclose liabilities for uncertain income tax benefits that fail a “more likely than not” threshold based on the technical merits of *each* tax position, even if the positions are unlikely to be detected by tax authorities. Recent studies find these UTB balances are significantly associated with firms’ tax planning and avoidance behavior (e.g., Blouin et al. 2010; Mills et al. 2010; Lisowsky et al. 2013; Gupta et al. 2014).

Motivated by the above, we regress *Unrecognized Tax Benefits*, defined as the level of UTB scaled by lagged total assets, on our explanatory and control variables. Table 5 shows firms headed by military managers have lower UTB balances than firms headed by non-military managers, where the estimated coefficients on *Military Experience* range from 1.122 % (*t*-statistic: 1.81) to 1.417 % (*t*-statistic: 2.04). Given that the average UTB balance is 2.2 %, these differences translate into a 50–60 % reduction in reported liabilities for uncertain tax benefits by military managers. Our tests remain statistically significant at the 10 % level after we include all other managerial characteristics. Further, none of the other managerial characteristics consistently explain the variation in UTB.

One interpretation is that military managers are just as tax aggressive, but they record a smaller reserve for such uncertainty—an interpretation that would be consistent with financial aggressiveness. However, the preponderance of our ETR evidence suggests that firms with military managers engage in fewer uncertain tax positions. The UTB evidence thus further demonstrates that military managers exhibit lower willingness to pursue aggressive tax planning.

3.6 Use of tax havens

We examine firms’ material operations in tax havens to complement our ETR and UTB tests. Firms that have material operations in at least one tax haven country have lower worldwide effective tax rates than firms without tax haven operations (Dyreng and Lindsey 2009), linking the use of tax havens to aggressive tax planning.

We construct a dependent variable, *Number of Tax Havens*, to capture the use of tax havens, using the required disclosure of locations of subsidiaries with material operations in Exhibit 21 of form 10-K filings. Columns 1 and 3 of Table 6 report OLS regression results using the number of tax havens as the dependent variable. Firms headed by military managers have substantially fewer material operations in tax havens by 12–17 % (*t*-statistics: 1.71–2.28). We also construct an indicator dependent variable, *Tax Havens Top User*, that takes a value of one when the number of tax haven subsidiaries is in the top quintile for the year, and zero otherwise. Columns 2 and 4 report the pooled logistic regression results. We see a strong negative pattern between the use of tax havens and military status. Military managers on average are 9.9–13.3 % (*z*-statistics: –2.24 to –2.84) less likely to be

Table 6 Use of tax havens

	Dependent variables			
	Baselines		Controlling for foreign income	
	# Tax havens	Tax havens top user	# Tax havens	Tax havens top user
<i>Independent variables</i>	(1)	(2)	(3)	(4)
Military experience	-0.171 (-2.28)	-0.133 (-2.84)	-0.122 (-1.71)	-0.099 (-2.24)
Return on assets	0.046 (0.28)	-0.037 (-0.37)	-0.240 (-1.55)	-0.229 (-2.23)
Leverage	-0.193 (-1.79)	-0.140 (-1.93)	-0.125 (-1.24)	-0.109 (-1.57)
NOL indicator	0.168 (3.81)	0.103 (3.82)	0.107 (2.61)	0.071 (2.74)
Change in NOL	-0.001 (-0.02)	-0.005 (-0.13)	0.035 (0.82)	0.024 (0.83)
PPE	-0.396 (-3.35)	-0.193 (-2.48)	-0.357 (-3.30)	-0.178 (-2.37)
Intangible assets	0.143 (1.43)	0.138 (2.43)	0.196 (2.10)	0.172 (3.13)
Equity income	-1.101 (-0.31)	0.512 (0.28)	-0.405 (-0.12)	1.372 (0.73)
Firm size	0.265 (14.61)	0.132 (10.21)	0.229 (13.02)	0.119 (9.30)
Market-to-book	0.025 (2.12)	0.013 (1.83)	0.007 (0.65)	0.004 (0.49)
R&D	1.515 (3.73)	0.451 (1.73)	1.164 (3.07)	0.215 (0.80)
Foreign income			6.833 (10.75)	2.997 (7.67)
Constant	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Num. of obs.	4,202	4,202	4,202	4,202
Adj.-/Pseudo-R ²	0.279	0.210	0.349	0.257

This table reports the results of pooled OLS and logistic regressions. The dependent variables are *Number of Tax Havens* and *Tax Havens Top User*. *Number of Tax Havens* is the natural logarithm of one plus the number of tax havens reported in Exhibit 21 of a firm's 10-K filings; these data are generously made available by Scott Dyreng. A country is considered a tax haven if it is listed as a tax haven by at least three of four sources reported at <http://www.globalpolicy.org> on March 4, 2008 (Dyreng and Lindsey 2009). *Tax Havens Top User* is an indicator variable that equals one if the number of tax havens reported in Exhibit 21 is in the top quintile, and zero otherwise. *Industry fixed effects* are based on Fama-French 12 industry classification. Robust standard errors are clustered at the firm level, and two-tailed *t*-statistics or *z*-statistics are reported in parentheses. The marginal probabilities on indicator variables are for a discrete change from zero to one, whereas the marginal probabilities for the other variables equal marginal effects at the mean

frequent users of tax havens, which is economically and statistically significant.¹⁶ This systematic pattern persists even after we control for a wide set of firm-level variables (notably including *Foreign Income* in columns 3 and 4). Overall, military managers are significantly less likely to locate their material business operations in tax havens. We also interpret this evidence as consistent with their lower willingness to pursue aggressive tax planning.

3.7 Propensity score matching

The decision process of the corporate boards is unobservable (Kaplan et al. 2012), so we investigate whether the hiring of military is an endogenous choice that is explained by observable firm characteristics. To provide more evidence that the above results are not driven by firm characteristics, we apply propensity score matching. Propensity score matching is a non-parametric technique that avoids potential model misspecification in OLS, and it only matches comparable observations through common support conditions (Wooldridge 2010, Chapter 21; Greene 2012, Chapter 19.6.2). Table 7 reports our results.

We first examine the determinants of hiring military managers. Panel A of Table 7 presents these first-stage results. We regress *Military Experience* on firm-level determinants, year FEs, and industry FEs. Firms with the following characteristics are more likely to appoint military managers: (1) high return on assets (*ROA*), (2) low market-to-book ratio (*MB*), (3) low foreign income (*FI*), and (4) large market capitalization (*Size*). *Foreign Income* has the strongest influence: the probability of hiring a military manager decreases by 3.81 % for every 10 % increase in *Foreign Income*. For each sample firm-year headed by a military manager, we select a matched peer with the closest predicted probability, using these four significant variables over the prior three years in the same industry (*Industry*). All matched peers are drawn without replacement.

Panel B of Table 7 shows the average difference in ETRs between sample firms and matched peers. Firms headed by military managers have higher average ETRs than matched peers. The mean differences in *Cash ETRs* range from 1.701 % (*t*-statistic: 2.59; matched on industry, size, return on assets, foreign income, and MB ratio) to 2.324 % (*t*-statistic: 3.33; matched on industry/size/ROA), whereas the differences in *GAAP ETRs* range from 1.895 % (*t*-statistic: 4.36) to 2.165 % (*t*-statistic: 4.74). The median differences are also economically and statistically

¹⁶ This result is not robust to using only the presence of a tax haven as the dependent variable, although this is not a powerful test because 71 % of firms have a subsidiary in a tax haven. We also introduce $\ln(\text{Num of Countries})$ as an additional control for the extent of multi-nationality. The coefficients on *Military Experience* remain significant, though smaller in magnitude, in the *Tax Havens Top User* regressions. We further examine the portion of Big 7 tax havens (including Hong Kong, Ireland, Lebanon, Liberia, Panama, Singapore, and Switzerland) used to the total number of tax havens used. *Number of Big 7 Tax Havens* equals the natural logarithm of one plus the number of Big 7 tax havens in Exhibit 21, and *Big 7 Havens Top User* is an indicator variable that equals one when a firm's number of Big 7 tax haven subsidiaries is in the top quintile for the year. In untabulated tests, military managers have fewer operations in Big 7 havens and are less likely to be top users of these Big 7 havens, with almost all specifications (with or without foreign income, or with baseline or all controls) significant at 10 %.

Table 7 Propensity score matching

Panel A: Determinants of hiring military managers											
Independent variables											
	ROA	LEV	NOL	ANOL	FI	PPE	INTA	EQU	SIZE	MB	R&D
<i>Dependent indicator</i>	Estimated coefficients										
Military experience (obs = 9,738)	1.180	-0.021	0.101	-0.363	-5.157	0.339	-0.056	-0.037	0.212	-0.118	-1.851
	(1.85)	(-0.05)	(0.65)	(-0.80)	(-1.75)	(0.76)	(-0.14)	(0.00)	(3.83)	(-1.69)	(-0.75)
	Marginal probabilities										
	0.087	-0.002	0.007	-0.027	-0.381	0.025	-0.004	-0.003	0.016	-0.009	-0.137
Panel B: Propensity score matching tests											
Cash ETR											
	Mean difference					Median difference					
	GAAP ETR					Mean difference					
	Mean difference					Median difference					
<i>Matching criteria</i>											
Industry/size/ROA	2.324				2.818				2.165		1.062
	(3.33)				(3.63)				(4.74)		(4.29)
Industry/size/ROA/FI	1.796				2.970				2.003		1.415
	(2.69)				(3.13)				(4.46)		(4.56)
Industry/size/ROA/FI/MB	1.701				1.429				1.895		0.716
	(2.59)				(2.35)				(4.36)		(3.83)

Panel A reports the logistic regression regressing *Military Experience* on firm characteristics, year fixed effects, industry fixed effects, and a constant. Each observation is at the year-firm level. The variables from left to right are *Return on Assets*, *Leverage*, *NOL Indicator*, *Change in NOL*, *Foreign Income*, *Property, Plant, and Equipment*, *Intangible Assets*, *Equity Income*, *Firm Size*, *Market to Book*, and *Research and Development*. Bolded variables are statistically significant at least at the 10 % level. Robust standard errors are clustered at the firm level, and z-statistics are reported in parentheses. The marginal probability on *NOL* is for a discrete change from zero to one, whereas the marginal probabilities for the other variables equal marginal effects at the mean. Panel B reports the difference in *Cash/GAAP ETR* between firms headed by military managers and matched peers. Each firm headed by a military manager is matched with a firm not headed by a military manager based on the closest propensity score calculated using the following criteria: (a) size, (b) returns on assets (*ROA*), (c) foreign income (*FI*), and (d) market-to-book (*MB*) ratio for the past three years in the same industry. Differences are in percentages for ease of reference. Each matched peer is drawn without replacement. Two-tailed z-statistics for mean (median) difference are estimated using paired t-tests (Wilcoxon signed rank tests)

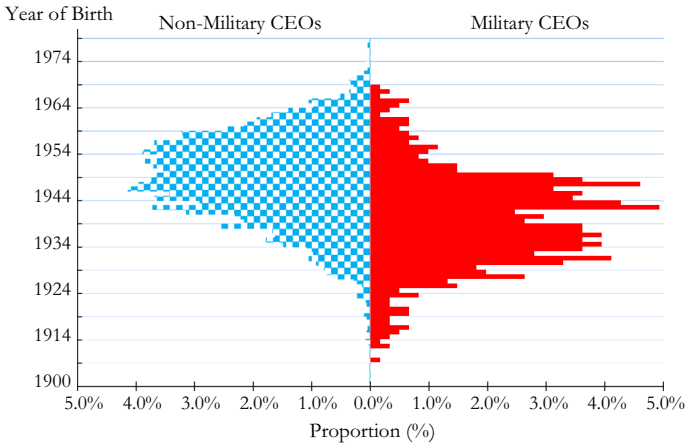


Fig. 3 Distribution of birth years. This figure plots the distribution of managers’ birth years

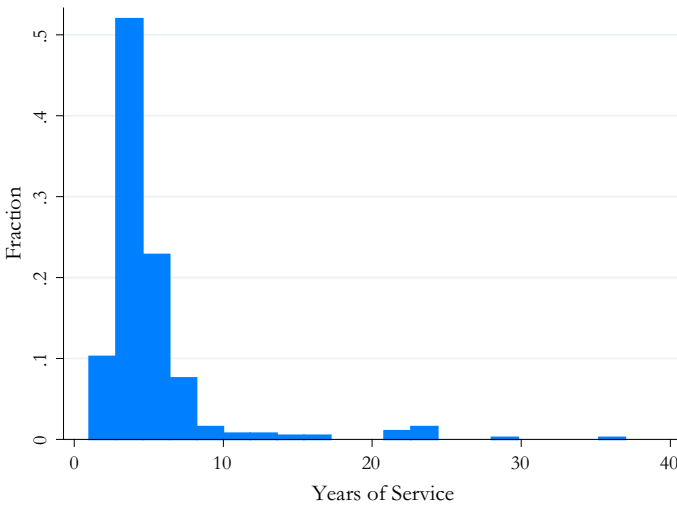


Fig. 4 Distribution of years of service. This figure plots the years of service of military managers

significant. These results indicate that the regression results above are unlikely to be driven by the observable heterogeneity in firm characteristics.

3.8 Instrumental variable estimation

Prior studies use birth year as an instrument for military experience.¹⁷ As an example of why birth year is an effective instrument, individuals who were born on or before 1927 were more likely to serve in World War II than individuals born after 1927 (Bound and Turner 2002; Stanley 2003). Figure 3 shows that the birth years of

¹⁷ See Angrist (1990), Angrist and Krueger (1994), Bedard and Deschênes (2006), Lin et al. (2011), Bedard and Deschênes (2011) and Benmelech and Frydman (2015).

non-military managers exhibit a bell-shaped distribution, but the births of military managers cluster in waves corresponding to major U.S. military conflicts. Figure 4 shows that military managers have average (median) service experience of five (four) years, suggesting that most managers serve briefly, in many cases during major military conflicts, or perhaps to obtain educational (GI Bill) benefits.

Table 8 reports the IV estimation results. The dependent variables are *Cash ETR* (*GAAP ETR*) in odd (even) columns, whereas the instruments are (a) *Birth Year* for columns 1–2, and (b) *Birth Year Indicator Variables* for columns 3–4.¹⁸ The 2SLS IV regressions control for all managerial characteristics, including *Age*, *Tenure*, *Male*, *MBA Education*, *Great Depression*, *Graduation in Recession*, *Overseas*, *Republican Affiliation*, and *% Stock Options*. The bottom panel of columns 1–2 shows that the first stage *F*-statistic is 20.35, far exceeding the critical value of 10 that Staiger and Stock (1997) suggest, although the *F*-statistic is weaker in magnitude (*F*-statistic = 3.17) in columns 3–4, when birth year indicator variables are used as instruments. Across all second-stage regressions, all coefficients on instrumented *Military Experience* are significantly positive.¹⁹

3.9 Robustness checks

In Table 9, we consider a number of alternative explanations. We position these tests as supplemental because our available data further limit the sample size. We include two measures of corporate governance in our primary regression, as prior research shows that corporate governance is an important determinant of firms' tax avoidance behavior (Desai and Dharmapala 2006; Cheng et al. 2012). *Corporate Governance Index* refers to the Gompers-Ishii-Metrick Index (G-Index), which is constructed to capture shareholder rights and corporate governance across firms. The sample period is from 1992 to 2006. *Institutional Ownership* refers to the latest quarterly level of institutional ownership from the Thomson-Reuters 13f database prior to fiscal year end. Table 9 shows that our results are robust to controlling for these measures of corporate governance. Our results could still reflect

¹⁸ We also considered using date of birth for possible instruments of selecting CEOs with military experience following the well-known Vietnam Draft Lottery by Angrist (1990). To examine this, we collected the exact CEOs' dates of birth from *Who's Who* and Boardex, and successfully identified the dates of birth of 2075 CEOs. Six hundred one CEOs were born between 1944 and 1952 and potentially subject to the Vietnam draft. First, among 283 CEOs who were supposed to be drafted, we find that only 20 % ($n = 58$) have military experience. This suggests that many executives with low draft numbers seemed able to defer their drafts. Based on our searches, some of these executives defer their drafts by pursuing college educations in either local or overseas institutions (e.g., Canada), which is consistent with the findings in Card and Lemieux (2001). On the other hand, among the other 318 CEOs who were not supposed to be drafted, 17 % have military experience, suggesting they volunteered even though not drafted. Overall, the correlation between having military experience and being drafted is quite low at approximately 4 %, even during the Vietnam War. This suggests that, for executives, date of birth is a poor instrument for capturing their exogenous probability for military service in Vietnam, although it is likely a worthy instrument for other groups of young men where the likelihood of college deferments would be lower than for future CEOs.

¹⁹ Even though our sample is shorter and spans fewer years, our second-stage 2SLS results are stronger than those in Benmelech and Frydman (2015) IV tests of whether military CEOs are less likely to conduct alleged corporate fraud.

Table 8 IV estimation

Second-stage regressions	Dependent variables			
	<i>Cash ETR</i>	<i>GAAP ETR</i>	<i>Cash ETR</i>	<i>GAAP ETR</i>
<i>Independent variables</i>	(1)	(2)	(3)	(4)
Military experience	0.239 (3.11)	0.238 (3.57)	0.097 (3.31)	0.074 (4.08)
Return on assets	0.088 (3.64)	0.245 (10.83)	0.099 (4.47)	0.257 (12.61)
Leverage	-0.047 (-3.18)	0.004 (0.34)	-0.046 (-3.68)	0.005 (0.51)
NOL indicator	-0.051 (-10.12)	-0.020 (-5.00)	-0.052 (-11.57)	-0.021 (-6.85)
Change in NOL	-0.034 (-5.56)	-0.029 (-5.98)	-0.035 (-5.63)	-0.029 (-6.18)
Foreign income	0.212 (2.15)	-0.446 (-5.39)	0.138 (1.74)	-0.529 (-9.22)
Property, plant, and equipment	-0.082 (-6.20)	-0.024 (-2.20)	-0.076 (-7.27)	-0.017 (-2.47)
Intangible assets	0.003 (0.28)	0.024 (2.37)	-0.000 (-0.01)	0.021 (2.56)
Equity income	-0.613 (-1.41)	-0.902 (-2.47)	-0.616 (-1.63)	-0.912 (-3.24)
Firm size	-0.004 (-1.88)	-0.004 (-2.23)	-0.002 (-1.30)	-0.002 (-1.73)
Market-to-book	-0.004 (-2.67)	-0.005 (-3.23)	-0.005 (-3.73)	-0.006 (-4.50)
Research and development	-0.260 (-3.86)	-0.192 (-3.12)	-0.258 (-4.21)	-0.188 (-3.44)
Number of observations	9,370	9,370	9,370	9,370
Managerial characteristics	Included	Included	Included	Included
Instrumenting <i>military exp.</i>	Birth year	Birth year	Birth year indicator variables	Birth year indicator variables
First-stage regressions	Dependent variable: <i>Military experience</i>			
Year of birth	-0.006 (-4.51)		-	-
First-stage <i>F</i> -statistics	20.35		3.17	

This table reports the results of two-stage least squares (2SLS) regression. The dependent variable is *Cash ETR* (*GAAP ETR*) in odd-numbered (even-numbered) columns. The instruments are (a) year of birth, and (b) year of birth indicator variables. *Year of Birth* refers to a manager's birth year. All regressions control for managerial characteristics including *Age*, *Tenure*, *Male*, *MBA Education*, *Great Depression*, *Graduation in Recession*, *Overseas*, *Republican Affiliation*, and *% Stock Options*. Robust standard errors are clustered at the firm level, and two-tailed *t*-statistics are reported in parentheses

Table 9 Robustness checks

	Estimated coefficients on <i>Military experience</i>	
	Dependent variables	
	<i>Cash effective tax rate</i>	<i>GAAP effective tax rate</i>
<i>Descriptions</i>	(1)	(2)
Control for corporate governance index	3.616 (3.20)	1.292 (1.96)
Control for institutional ownership	1.448 (2.27)	0.933 (2.49)
Control for total pay-for-performance sensitivities	1.428 (2.26)	1.008 (2.69)
Control for local religiosity	1.614 (2.07)	1.227 (3.02)
Using personal donation records to identify political affiliation	1.414 (2.25)	0.971 (2.62)
Excluding long-career military managers	1.927 (2.85)	1.125 (2.82)
Using 3-digit SIC industry classification	1.383 (2.07)	0.831 (2.01)
Excluding defense/military industries	1.606 (2.53)	0.928 (2.45)
Fama-MacBeth regressions	1.035 [1.94]	0.840 [2.24]
Controls/Fixed effects identical to	Column 2 of Table 3	Column 4 of Table 3

The following table reports the estimated coefficients from pooled OLS regressions of ETRs on *Military Experience*. *Control for Corporate Governance Index* controls for the corporate governance index (i.e., G-index), where the G-index is from Gompers et al. (2003). *Control for Institutional Ownership* controls for institutional ownership, defined as the latest quarterly level of institutional ownership. *Control for Total Pay-for-Performance* controls for CEOs' total pay-for-performance sensitivity, defined as the dollar change in pay for a one-dollar increase in firm value, divided by annual pay (Core and Guay 2002; Edmans et al. 2009). *Control for Local Religiosity* controls for local religiosity of firm headquarters, defined as the number of religious adherents in the country (as reported by the American Religion Data Archive) to the total population in the country (as reported by the Census Bureau), at a firm's county level. *Using Personal Donation Records to Identify Political Affiliation* identifies managers' political affiliation based on their personal donation records. A manager is considered Republican if he or she only donates to Republican parties during the election cycles from 1991 to 2008 (Hutton et al. 2014). *Excluding Long-Career Military Managers* excludes those managers with more than six years of military service. *Using 3-digit SIC Industry Classification* uses 3-digit SIC industry classifications. *Excluding Defense/Military Industries* excludes firms in military industries. *Fama-MacBeth Regressions* reports results estimated using Fama-MacBeth regressions at the yearly level with Newey-West standard errors adjusted with a 4-year lag. Robust standard errors are clustered at the firm level, and two-tailed *t*-statistics are reported in parentheses. Newey-West *t*-statistics (two-tailed) are summarized in brackets. We multiply the estimated coefficients on *Military Experience* by 100 for ease of reference. Only the estimated coefficients are reported below to conserve space

heterogeneous sensitivity by managers to their incentives (Jensen and Murphy 1990; Yermack 1995; Hall and Liebman 1998). We examine this possibility by replacing % *Stock Options* with manager's *Total Pay-for-Performance Sensitivity (Total PPS)*, defined as the dollar change in pay for a one-dollar increase in firm value, divided by annual pay (Core and Guay 2002; Edmans et al. 2009). The sample period is from 1992 to 2011. Our results are robust to controlling for managers' *Total PPS*.

We also examine whether the results capture firms' geographic variation in religion-induced norms (Hilary and Hui 2009; Kumar et al. 2011; Boone et al. 2013). We control for *Local Religiosity*, defined as the number of religious adherents (American Religion Data Archive) to the total population (Census Bureau) in the county in which the firm is headquartered. The sample period is from 1992 to 2008. The results reported in Table 9 remain similar.²⁰ Our baseline regressions already include an indicator for disclosing *Republican*, but our results (untabulated) are robust to alternately controlling for *Democrat*, or for both *Republican* and *Democrat* indicators. Our results are robust to an alternative definition of *Republican* based on the political contributions toward Republican Party divided by all political contributions.

We also examine the industry distribution of military managers further using 38 Fama and French (1997) industries. In untabulated tests, the industries with the highest number of military managers are petroleum and coal products (28.8 %), paper and allied products (21.7 %), and transportation equipment (19.1 %). While a relatively high proportion of military managers occurs in the transportation equipment industry (including defense or military industries under SIC 3721, 3724, 3728, 3764, and 3769), as expected, managers with military backgrounds are distributed across many different industries. In fact, 24.3 % of military managers fall under the umbrella industry category *Others*. Nevertheless, we examine whether the results are driven by industry classifications or by pairings of defense firms and military managers. Table 9 shows that our results are robust to substituting a finer 3-digit SIC, excluding any defense and military firms with SIC 3721, 3724, 3728, 3764, and 3769 that likely depend more on government contracts (Mills, Nutter, and Schwab 2013); or to using Fama-MacBeth regressions to adjust for the unobserved time-series dependency in firm-year observations with Newey-West standard errors adjusted with 4-year lag. In untabulated tests, our results are also robust to excluding the oil and gas industry.

3.10 Gray areas in corporate reporting

We delve deeper to understand the influence of hiring managers with military experience on other corporate reporting outcomes. Presumably boards hire managers knowing ex ante that the managers would implement certain corporate

²⁰ Untabulated results using the county Catholic-to-Protestant ratio are similar, with estimated coefficients on *Military Experience* of 1.608 % (*t*-statistic: 2.06) for *Cash ETR* and 1.219 % (*t*-statistic: 2.98) for *GAAP ETR*.

strategies. If so, do the boards gain benefits in other corporate reporting dimensions that justify the tradeoff for leaving tax money on the table?

Instead of re-examining alleged corporate fraud (Benmelech and Frydman 2015), we consider a few gray areas in corporate reporting that are between legitimacy and outright fraud because they are more qualitatively similar to aggressive tax planning. We first associate *Military Experience* with three measures of corporate reporting outcomes: *Class Action Lawsuit*, *Financial Restatements*, and *Options Backdating*. *Class Action Lawsuit* is an indicator variable that equals one when a firm has a class action lawsuit initiated in the Stanford Securities Class Action Clearinghouse in year t , and zero otherwise.²¹ This variable is based on class action lawsuits and is much broader than the alleged fraud cases studied in prior studies (e.g., Dyck et al. 2010; Benmelech and Frydman 2015). *Financial Restatements* is an indicator variable that equals one if a firm has restated its financial statements in year t in the U.S. Government Accountability Office (GAO) Financial Statement Restatement Database in year t , and zero otherwise. *Options Backdating* is an indicator variable that equals one if the option is granted on the day when the share price hits the lowest price in a particular month, and zero otherwise (Bebchuk et al. 2010). We also construct two variables to examine the relationship between *Military Experience* and possible earnings management: total current accruals and discretionary current accruals, following the modified Jones (1991) model in Dechow et al. (1995). To facilitate interpretation, we construct two indicator variables. *Total Current Accruals (Discretionary Current Accruals)* equals one when the signed total (discretionary) current accruals of firm j in year t are in the top quintile, and zero otherwise. These measures are only suggestive of aggressive corporate reporting. For instance, class action lawsuits are related to *alleged* corporate fraud. Options backdating could be legal if certain conditions are met. Accounting restatements could also relate to accounting or technical errors (GAO 2006). High discretionary accruals need not indicate illegal activities.

Table 10 provides univariate evidence that firms headed by military managers are less likely to engage in aggressive corporate reporting. Specifically, they are 1.13 % (t -statistic: 2.47) less likely to be targets in class action lawsuits, 0.65 % (t -statistic: 1.70) less likely to announce financial restatements, and 1.91 % (t -statistic: 2.01) less likely to backdate their options. Further *Military Experience* is negatively correlated with firms' total and discretionary current accruals. Firms headed by managers with military backgrounds are between 3.74 % (t -statistic: 3.44) and 3.79 % (t -statistic: 2.64) less likely than other firms to be in the top quintile of firms that arguably engage in earnings management. Although the decision process of boards is unobservable, the evidence in Table 10 suggests that boards could be considering the interaction of managerial characteristics with various corporate reporting dimensions. Although military managers avoid less tax than other managers, they perform better in other corporate reporting dimensions where shareholders would ultimately bear the costs of various types of aggressive corporate reporting. We conclude that when boards hire military managers, who are

²¹ Class action lawsuits typically arise from precipitous stock price declines and are only arguably related to corporate misconduct when also associated with restatements or fraud (Donelson et al. 2012).

Table 10 Gray areas in corporate reporting

<i>Gray areas in corporate reporting</i>	Military managers (%) (a)	Non-military managers (%) (b)	(a)–(b) (<i>t</i> -statistic) (c)	Sample period (Num. of obs.) (d)
Class action lawsuit	0.761	1.894	–1.13 (–2.47)	1996–2010 (7,923)
Financial restatement	0.652	1.304	–0.65 (–1.70)	1997–2005 (4,470)
Options backdating	2.454	4.367	–1.91 (–2.01)	1996–2005 (4,954)
Total current accruals	6.714	10.449	–3.74 (–3.44)	1992–2011 (9,357)
Discretionary current accruals	16.251	20.042	–3.79 (–2.64)	1992–2011 (9,320)

This table reports the *t*-test results between firms headed by military managers and non-military managers on several types of corporate reporting. *Class Action Lawsuit* equals one if a firm has a class action lawsuit initiated in the Stanford Securities Class Action Clearinghouse in year *t*, and zero otherwise. *Financial Restatement* equals one if a firm has restated its financial statements in the GAO's Financial Statement Restatement Database in year *t*, and zero otherwise; these data are generously made available by Judson Caskey. *Options Backdating* equals one if the option is granted on the day when the share price hits the lowest price in month *t*, and zero otherwise (Bebchuk et al. 2010). *Total Current Accruals* (*Discretionary Current Accruals*) equals one if the signed total (discretionary) current accruals of firm *j* in year *t* estimated under a modified Jones model are in the top quintile, and zero otherwise (Dechow et al. 1995). At least ten firms are required for estimation at the year-industry level. All observations are at the firm-year level. Each column reports the average of each gray area in corporate reporting

more conservative in tax planning, they gain the benefit of less aggressive financial reporting that would require more governance to constrain.

4 What construct does military experience represent?

4.1 Sharing common values

The first channel we conjecture is that military managers, by virtue of their military experience, may share common values related to government legitimacy and allegiance generally. For example, veterans have a unique awareness of the costs of national defense and the commitments to active duty and veteran personnel (Department of Veteran Affairs 2012, 2013).²² Lower tax payments threaten programs and services that affect active-duty personnel, veterans, and their families (Testimony of the Commander-in-Chief of the Veterans of Foreign Wars, John Hamilton, before a joint session of the House and Senate Veterans Affairs Committees on March 5, 2013). Thus, military managers could be more

²² Finally, military CEOs should want to conserve U.S. resources because military personnel face strong injunctions not to exceed budgets (United States Constitution, Article 1, Section 9, Clause 7; 16 Statute 251, 107 Act of July 14, 1870; 31 USC Section 134, January 3, 2012; and Federal Acquisition Regulation, Subpart 32.7, Section 32.702).

likely to relate to government legitimacy and allegiance than the other managers are.

The findings of a study by the IRS also echo this possibility. Using confidential tax return data, the IRS surveyed sole proprietors to better understand what factors determine their income tax compliance. About 61 % of small businesses underreport their business income, possibly due to low IRS audit rates (i.e., 1.4 %) of their receipts and expenses (GAO 2007). However, the IRS finds that the small businesses located in military communities are highly compliant in their income tax reporting. Although some of these small businesses are run by veterans, a significant fraction of them are operated by family members without any military experience. The only military connection for them is that they live in regions that expose them to a common set of values, norms, and social identity rooted in military culture, and prior studies show that individuals who live in military communities are more likely to share the same value systems and attitudes of their military family members (e.g., Watanabe 1985).

Military culture is grounded in concepts of responsibility to do the right thing (Daboub et al. 1995; Damon 2004; Duffy 2006; Sinder 2012).²³ This is consistent with numerous accounts of active personnel or veterans who suggest that military experience guides their daily behavior (Elder 1986; Elder and Clipp 1989; Elder et al. 1991). For example, veteran CEO Steven Loranger says the military teaches doing the right thing, adding, “One of the things I appreciate about the military is that these value systems do guide your daily actions and decisions” (Duffy 2006). A Medal of Honor recipient, Vice Admiral James Stockdale stated, “Even in the most detached duty, we warriors must keep foremost in our minds that there are boundaries to the prerogatives of leadership, moral boundaries” (Department of Defense 2006, Foreword). This anecdotal

²³ A common example for doing the right thing is “getting in line.” Although queue jumping is not illegal, it is commonly perceived in Western culture as unethical. The construct of doing the right thing is described by Traditional Values in the 1994 *Jackson Personality Inventory* (1994). As a component of its dependability cluster, the JPI-R assesses a Traditional Values scale to represent the degree to which an individual adheres to conservative, “old-fashioned” values such as honesty, frugality, modesty, respect for authority, and patriotism. Consistent with those ideas, the U.S. Armed Forces’ Requirements of Exemplary Conduct (10 USC § 3583) states the following: All commanding officers and others in authority in the Army are required—

- (1) to show in themselves a good example of virtue, honor, patriotism, and subordination;
- (2) to be vigilant in inspecting the conduct of all persons who are placed under their command;
- (3) to guard against and suppress all dissolute and immoral practices, and to correct, according to the laws and regulations of the Army, all persons who are guilty of them; and
- (4) to take all necessary and proper measures, under the laws, regulations, and customs of the Army, to promote and safeguard the morale, the physical well-being, and the general welfare of the officers and enlisted persons under their command or charge.

Military honor codes also explicitly embody moral values:

- “Integrity first” in the U.S. Air Force mission statement’s list of core values,
- “A cadet will not lie, cheat, steal, or tolerate those who do” in West Point’s Cadet Honor Code,
- And “Midshipmen are persons of integrity: they stand for that which is right” in the U.S. Naval Academy Honor Concept.

evidence suggests that doing the right thing is more than just a “stated preference” among active military personnel but also a “revealed preference” across a wide spectrum of veterans. Such a sense of allegiance to government structures could explain why military managers are less aggressive about reducing corporate tax burdens. We believe our results are better explained by common values than by the ethics of tax avoidance.

4.2 Military CEOs believing tax avoidance as unethical

Mainstream media typically portrays corporate tax avoidance as unethical (Guardian 2013; Wall Street Journal 2013a). Questioning the tax avoidance schemes of Google, the U.K.’s chair of the Public Accounts Committee Margaret Hodge calls those avoidance strategies “utterly and totally immoral.” Hodge even admonishes Google for “devious, calculating and unethical” behavior, saying, “You are a company that says you ‘do no evil.’ And I think that you do do evil.” The general public shares the same view. A recent poll by Christian Aid (2013) shows that more than 80 % of the survey respondents agree that tax avoidance by multinational companies “makes me feel angry,” and that “it is unfair that I have to pay my taxes when multinational companies can avoid doing this.” The media outcry over corporate tax avoidance has triggered civil protests and even consumer boycotts. If CEOs with military experience themselves believe less tax avoidance is more ethical, they should be less willing to exploit the grey areas in tax law by bending the rules.

However, tax avoidance is not typically viewed by firm executives as unethical. Although most managers dislike bad publicity for being named as top corporate tax avoiders (Graham et al. 2014), managers do differ in their attitudes (Financial Times 2013). Google, Starbucks, GE, and Apple are among the high-profile defenders. After the media reported that Google paid <1 % in U.K. profits tax on \$5 billion of British advertisement sales, Google’s CEO responded, “I am very proud of the structure that we set up,” and called its tax avoidance “just capitalism” (Telegraph 2012; Independent 2013). Starbucks’ CEO defended the company’s low U.K. payments, saying, “We don’t pay income tax because we are not making money there,” even while telling its shareholders that the U.K. business is profitable. GE is also regularly in the news for its low ETR. Its CEO is “happy to defend” the company’s low global tax rate (Bloomberg 2011; General Electric 2011), and GE uses Twitter to provide clarifying information about its ETRs. Apple’s CEO told U.S. senators, “Honestly speaking I don’t see it [the tax avoidance scheme] as being unfair,” and that “We not only comply with the laws, we comply with the spirit of the laws” (Bloomberg 2013). These high-profile stories show that some managers are more willing to pursue aggressive tax planning than others.²⁴

²⁴ None of the CEOs of the high-profile multinational firms mentioned above have served in the military.

4.3 Other less likely explanations

We also consider two alternative but unlikely explanations. First, military culture emphasizes following the rules. Obedience is also a “cardinal virtue” of soldiers (Gorlitz 1965, p. 243), and “absolute and unqualified obedience” to orders is necessary to preserve discipline and to promote operational efficiency (Denton 1980, p. 5).²⁵ When asked by the *Wall Street Journal* about claims that military experience is a proxy for “respect for rules, authority, and societal values,” the chairman of the Joint Chiefs of Staff, General Martin Dempsey, said, “I like to think we follow the rules ... when we don’t, we hold people accountable” (*Wall Street Journal* 2013b). Even in small matters like crossing roads, military personnel are less likely to commit traffic violations than civilians (Rosenbloom 2011). Although we focus on veterans rather than active duty personnel, managers with military experience would avoid less tax if they view federal laws and regulations as rules that should be followed.

The rule-following channel is suspect because, unlike tax evasion, tax avoidance is not illegal per se. Our main measures of ETRs capture firms’ tax avoidance but not tax evasion behavior. So, undertaking legal efforts within the boundaries of laws to minimize taxes is not illegal and does not contradict the notion of “following the rules.”

The second alternative explanation is (economic) patriotism. Specifically, the sense of civic duty that underlies conventional notions of patriotism may correspond to one’s national identity. U.S. managers could view avoiding less corporate taxes as a form of patriotism toward the U.S. government. This also seems to be the view shared by the U.S. government on aggressive corporate tax strategies. Interviewed by CNBC on corporate tax inversions, the U.S. Treasury Secretary Jacob Lew urged the Congress to enact legislation to discourage U.S. companies from moving their tax domiciles to avoid U.S. taxes, saying, “We should have some economic patriotism here” (Reuters 2014).

However, the patriotism channel does not appear to explain our results. First, in untabulated univariate and multivariate tests, we find that U.S. GAAP ETRs are no different for military managers, or between foreign-born and U.S. managers. Second, our results are robust to eliminating foreign-born CEOs, or controlling for whether a CEO is born in the United States. Although we acknowledge that the place of birth is an imprecise proxy for national identity, we conclude patriotism does not explain our results.

²⁵ For example, members of the U.S. military are trained that orders from superior officers carry the full weight of military justice under the Uniform Code of Military Justice: “I, _____, do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; and that I will obey the orders of the President of the United States and the orders of the officers appointed over me, according to regulations and the Uniform Code of Military Justice. So help me God” (*The U.S. Army’s Oath*). Insubordination can lead to a courts-martial proceeding, the military equivalent of a civilian criminal trial (10 U.S.C., Subchapter X, Section 892, Article 92, Failure to Obey Order or Regulation).

5 Conclusion

In this paper, we find that firms headed by managers with military experience, but sharing no other managerial characteristic, have higher cash and GAAP effective tax rates, the broadest measures for capturing the full continuum of firms' tax planning. These managers also maintain lower reserves for unrecognized tax benefits, indicating that they engage in less aggressive tax strategies, and they make less use of tax havens. We introduce a new econometric technique developed by AKM (1999) into the accounting literature to disentangle manager effects from firm effects, and show that half of the variation in firms' ETRs is attributable to CEO-specific heterogeneity, even after controlling for time-invariant firm characteristics.

Our evidence extends prior studies that examine the tone at the top on corporate policies (e.g., Bertrand and Schoar 2003). First, we find that military experience has a substantial influence on firms' corporate tax policies. Second, we contribute to a growing literature in economics and financial accounting seeking to understand the influence of culture on corporate policies. Collectively, this paper improves our understanding of the influence of tone at the top on corporate tax planning.

Even companies not headed by CEOs with military experience sometimes attempt to gain public favor by supporting the military. Starbucks, after responding to public outcry by agreeing to "voluntarily" pay a corporation tax of \$33 million regardless of profitability,²⁶ also recently pledged to hire 10,000 veterans in a high-profile public relations campaign.²⁷ In a March 2014 CBS Evening News segment, Starbucks' CEO also announced that he is donating \$30 million specifically earmarked for research into post-traumatic stress disorder (PTSD) or brain trauma of returning war veterans.²⁸ He appears to view associating Starbucks with the military as enhancing a socially conscious image to the general public, which could give rise to a halo effect. As Lockheed Martin's CEO, Norman Augustine, once said:

If you do the right thing, it hurts the bottom line. But I truly believe that if you can build a reputation as somebody [who] can be trusted, business opportunities will come to you for the long term that will more than make up for the penalties that you pay in the short term, by and large. (Damon 2004, p. 118)

Overall, our results suggest that when boards hire managers whose culture makes them more conservative in tax planning, they gain the benefit of less aggressive financial reporting that would require more governance to constrain. Boards and shareholders seeking that portfolio of outcomes will need to find other ways to

²⁶ "Starbucks agrees to pay more corporation tax" (*BBC*, December 6, 2012). In the same news article, the U.K. tax authorities responded by saying that corporation tax "is not a voluntary tax".

²⁷ "Not only are we going to hire 10,000 people as you just mentioned, we're also going to build or relocate five stores in or around bases so that the profits of those stores can go back to the veterans. I mean, this is a time in America where we have an obligation and a responsibility to do the right thing." From Quest means business by *CNN* aired on November 6, 2013.

²⁸ <http://www.cbsnews.com/news/starbucks-ceo-howard-schultz-announces-30-million-gift-for-us-troops/>.

identify such CEOs over time, given that military experience is a shrinking characteristic of our workforce.

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Appendix

Variable definitions and construction details

Variable	Description/construction details
Main variables	
Cash ETR	Cash effective tax rate: income taxes paid divided by pre-tax income minus special items ($TXPD/(PI-SPI)$). Truncated at [0,1]
GAAP ETR	Effective tax rate: income taxes divided by pre-tax income minus special items ($TXT/(PI-SPI)$). Truncated at [0,1]
Number of tax havens	Natural logarithm of one plus the number of tax havens reported in Exhibit 21 of a firm's 10-K filings in year t ; these data are obtained from Scott Dyreng's website (Dyreng and Lindsey 2009)
Tax havens top user	Indicator that equals one when the number of tax havens reported in Exhibit 21 of a firm's 10-K filings is in the top quintile, and zero otherwise
Managerial characteristics	
Military experience	Indicator that equals one if a manager has previous military experience in the U.S. Air Force, Army, Marines, or Navy (or their foreign equivalents), or other related military experience, and zero otherwise
Age	Age of manager
Tenure	Number of years a manager has worked in a firm
Male	Indicator that equals one if a manager is male, and zero otherwise
MBA education	Indicator that equals one if a manager holds an MBA degree, and zero otherwise
Great Depression	Indicator that equals one if a manager was born between 1920 and 1929, and zero otherwise (Malmendier et al. 2011)
Graduation in recession	Indicator that equals one if a manager graduates during an NBER recession year, and zero otherwise. A manager is assumed to graduate 24 years after birth (Schoar and Zuo 2016)
Overseas	Indicator that equals one if a manager was born outside the United States, and zero otherwise

Variable	Description/construction details
Republican affiliation	Indicator that equals one if a manager identifies himself/herself as Republican in <i>Marquis Who's Who</i>
% Stock options	Value of stock options granted divided by total compensation following Desai and Dharmapala (2006)
Firm characteristics	
Return on assets	Return on assets in year t , scaled by lagged total assets $((PI-XI)/Lag(AT))$
Leverage	Long-term debt in year t , scaled by lagged total assets $(DLTT/Lag(AT))$
NOL indicator	Indicator that equals one if loss carry-forward is positive as of the beginning of the year t (1 if $TLCF > 0$, and 0 otherwise)
Change in NOL	Change in loss carry-forward from year $t - 1$ to year t , scaled by lagged total assets $(TLCF-Lag(TLCF))/Lag(AT)$
Foreign income	Foreign income in year t , scaled by lagged total assets $(PIFO/Lag(AT))$
PPE	Property, plant, and equipment in year t , scaled by lagged total assets $(PPENT/Lag(AT))$
Intangible assets	Intangible assets in year t , scaled by lagged total assets $(INTAN/Lag(AT))$
Equity income	Equity income in earnings in year t , scaled by lagged assets $(ESUB/Lag(AT))$
Firm size	Natural logarithm of the market value of equity at the beginning of year t ($\text{Log}(Lag(AT))$)
Market-to-book	Market-to-book ratio at the beginning of year t $(PRCC_F*CSHPRI)/AT$
Research and development	Research and development expenditure in year t , scaled by lagged total assets $(XRD/Lag(AT))$. Missing values are replaced with zeros
Other variables	
Corporate governance index	The Gompers-Ishii-Metrick Index (G-Index) constructed to capture shareholder rights and corporate governance across firms. The index is obtained from Andrew Metrick's website
Institutional ownership	The latest quarterly level of institutional ownership in % from Thomson-Reuters 13f database prior to fiscal year end
Class action lawsuit	Indicator that equals one if there is a class action lawsuit initiated in year t , and zero otherwise. These data from 1996 to 2010 are collected from the Stanford Securities Class Action Clearinghouse
Options backdating	Indicator that equals one if a firm backdates its options granted to corporate insiders in year t , and zero otherwise. An option is considered backdated if the option is granted on the day when the share price hits the lowest price in a particular month (Bebchuk et al. 2010). The sample data are from 1996 to 2005
Financial restatement	Indicator that equals one if a firm has restated its financial statements in the GAO's Financial Statement Restatement Database in year t , and zero otherwise; these data from 1997 to 2005 are obtained from Judson Caskey's website
Total current accruals	Indicator that equals one when the total current accruals of firm j in year t calculated using a modified Jones (1991) model are in the top quintile, and zero otherwise (Dechow, Sloan, and Sweeney 1995). The sample period is from 1992 to 2011
Discretionary current accruals	Indicator that equals one when the discretionary current accruals of firm j in year t calculated using a modified Jones (1991) model are in the top quintile, and zero otherwise (Dechow et al. 1995). The sample period is from 1992 to 2011

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