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Mihir A. Desai
Dharmika Dharmapala

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ABSTRACT

How do investors value managerial actions designed solely to minimize corporate tax obligations? Using a framework in which managers' tax sheltering decisions are related to their ability to divert value, this paper predicts that the effect of tax avoidance on firm value should vary systematically with the strength of firm governance institutions. The empirical results indicate that the average effect of tax avoidance on firm value is not significantly different from zero; however, the effect is positive for well-governed firms as predicted. Coefficient estimates are consistent with an expected life of five years for the devices that generate these tax savings for well-governed firms. Alternative explanations for the dependence of the valuation of the tax avoidance measure on firm governance do not appear to be consistent with the empirical results. The findings indicate that the simple view of corporate tax avoidance as a transfer of resources from the state to shareholders is incomplete, given the agency problems characterizing shareholder-manager relations.

Mihir A. Desai
Graduate School of Business Administration
Harvard University
Soldiers Field
Boston, MA 02163
and NBER
mdesai@hbs.edu

Dhammika Dharmapala
University of Connecticut
dhammika.dhamapala@uconn.edu

1. *Introduction*

While tax consequences are a motivating factor in many corporate decisions, managerial actions designed *solely* to minimize corporate tax obligations are thought to be an increasingly important feature of U.S. corporate activity.¹ How do investors value such corporate tax avoidance actions? The answer to this question is trivial if avoidance activities are costless to investors. Traditionally, corporate tax avoidance has been viewed merely as a transfer of value from the state to shareholders.

In fact, corporate tax avoidance activity is costly on several margins. Aside from the direct costs of engaging in such activities, managers typically have to ensure that these actions are obscured from tax authorities. In the process, such machinations may afford managers increased latitude to pursue self-serving objectives, and lead investors to doubt their value. Can the latter effect be significant enough to change the simple answer that investors fully capture the value of corporate tax avoidance activity?

Two smaller sample studies indicate that the valuation of tax avoidance activities may not conform to this simple story. First, corporate expatriations - transactions where U.S. firms invert their corporate structure so that a subsidiary in a tax haven becomes the parent entity - provide significant corporate tax savings with limited, if any, operational changes. While such transactions should be viewed as value-enhancing, markets do not react in a strongly positive fashion – and often react negatively – to U.S. firms announcing such moves. Second, an event study of an episode of increased tax enforcement in Russia indicates that these enforcement actions are associated with *positive* market reactions.² Such evidence contradicts the simple view of corporate tax avoidance as a transfer from the state to shareholders.

The apparent proliferation of corporate tax avoidance activity more generally in the U.S. suggests that a broader investigation of the value consequences of corporate tax avoidance is warranted. The extensive literature on the effects of taxes on financing and investment decisions (as surveyed in Auerbach (2002) and Graham (2003)) does not typically incorporate how agency problems may complicate the valuation of, and response to, tax avoidance opportunities. Much

¹ See, for example, US Department of the Treasury (1999), Bankman (2004) and Slemrod (2004).

² See Desai and Hines (2002) and Cloyd, Mills and Weaver (2004) for evidence on expatriations and Desai, Dyck and Zingales (2004) for evidence on market reactions to the Putin tax enforcement actions.

of the work on corporate tax avoidance emphasizes the legal distinctions and accounting consequences of tax avoidance, without considering the basic finance question of how investors value these actions.³

This paper provides a conceptual framework for analyzing the conditions under which corporate tax avoidance activity should be valued fully by the market and investigates the degree to which such activity is valued by investors in a large sample of U.S. firms. A model that incorporates a link between the technologies of managerial diversion and corporate tax avoidance demonstrates that firm governance should be an important determinant of the valuation of purported corporate tax savings. While the direct effect of tax avoidance is to increase the after-tax value of the firm (regardless of its governance structure), these effects are potentially offset in poorly-governed firms by the increased opportunities for rent diversion. In contrast, managers of well-governed firms face more limited opportunities to engage in rent diversion, so this offsetting indirect effect should be less pronounced among such firms. Thus, the *net* effect on firm value should be greater for firms with stronger governance institutions.

This hypothesis is tested using data from Standard and Poor's Compustat and Execucomp databases, merged with the index of governance institutions developed by Gompers, Ishii and Metrick (2003). The sample consists of a large panel of firms over the 1993-2001 period. Firm value is measured using Tobin's q . Tax avoidance is measured by analyzing the difference between income reported to capital markets and tax authorities – the book-tax gap – and stripping accruals and other measures of earnings management from this gap. Firms' taxable incomes and book-tax gaps are inferred using the methodology of Manzon and Plesko (2002). In addition, controls for changes in the structure of executive compensation, firm size, and the volatility of the firm's share price are employed.

For the full sample, relying only on within-firm variation over time, the overall effect of the tax avoidance measure on q is not significantly different from zero. This suggests that corporate tax avoidance does not raise firm value on average. Consistent with the paper's hypothesis, the effect is significantly positive only for the subsample of well-governed firms and

³ There is an extensive literature on tax avoidance and evasion by individuals (as surveyed in Slemrod and Yitzhaki (2002)). In contrast, despite the differences between the individual and corporate contexts stressed by Slemrod (2004), there has been relatively little theoretical modeling of tax compliance decisions by corporations, although some recent papers (Chen and Chu, 2005; Crocker and Slemrod, 2005) analyze the nature of the optimal incentive contract when managers can engage in tax evasion on behalf of the firm.

has no significant effect for less well-governed firms. These results are robust to the inclusion of a variety of additional control variables, to the use of several alternative versions of the accruals proxy for earnings management, and to a variety of extensions to the model, including the use of a lag specification. The magnitude of the effect for the well-governed subsample suggests a market expectation of a life of five to six years for a typical tax shelter which is consistent with other emerging evidence on the use of corporate tax shelters.

Two primary alternative explanations exist for the result that the valuation of tax avoidance depends on the governance characteristics of firms. First, tax avoidance is difficult to measure and the proxy employed may be mismeasured and may actually capture earnings management. In short, removing various measures of accruals from the book-tax gap may not sufficiently isolate tax avoidance from earnings management. If this is the case, then the results presented could be interpreted as indicating that poorly-governed firms are penalized more severely for earnings management. Second, rather than illustrating the links between tax avoidance and suspicion of managerial diversion, the link between valuation of tax avoidance and governance might indicate that poorly-governed firms are investing in riskier tax avoidance technologies which are discounted more heavily. As discussed below, neither of these alternative explanations appears to be consistent with the patterns of coefficients generated in the empirical analysis.

This evidence is consistent with agency costs mitigating the benefits to shareholders of corporate tax avoidance. More broadly, this paper contributes to an emerging paradigm that emphasizes the links between firms' governance institutions and their responses to taxes. For example, Chetty and Saez (2004) and Brown, Liang and Weisbenner (2004) both note that managerial compensation patterns were an important determinant of firm responses to the 2003 dividend tax cut.⁴ Similarly, Perez-Gonzalez (2003) finds that payout policy is significantly influenced by the tax characteristics of large individual shareholders. Morck (2004) points to a very direct link between taxation and governance by highlighting the role of the double taxation of intercorporate dividends in discouraging the formation of business groups through pyramidal

⁴ Chetty and Saez (2004) show that increases in dividend payments in response to the tax cut were most pronounced among firms with high levels of managerial ownership, as well as those with high levels of institutional ownership. Managers with large stock option holding, however, were less likely to respond to the tax change (Brown, Liang and Weisbenner (2004)).

ownership structures. Each of these papers indicates that tax incentives interact with ownership and governance institutions in important ways.

This paper is most closely related to recent examinations of these interactions that emphasize how agency problems complicate the analysis of tax incentives. Desai, Dyck and Zingales (2004) develop a model in which corporate tax sheltering activity and the diversion of rents by managers are interrelated. Strong complementarities (or positive feedback effects) may exist between the two activities because concealing income from the tax authorities through complex transactions reduces the ability of shareholders to monitor manager behavior thereby making diversion less costly for managers. Such relationships appear to be operative based on evidence from Russia and cross-country differences in the way in which corporate tax revenues respond to corporate tax rate changes. Desai and Dharmapala (2005) investigate the relevance of these ideas in the U.S. setting by developing a conceptual framework for understanding how changes in incentive compensation can change corporate tax avoidance activity. Desai and Dharmapala (2005) find that the increased use of incentive compensation reduces tax sheltering activity, consistent with the existence of strong complementarities. A conceptual framework related to that in Desai and Dharmapala (2005) is employed in this paper. However, their focus is on the *determinants* of corporate tax avoidance, while this paper analyzes the *consequences* of this activity for firm value.

Finally, by emphasizing the value implications of corporate tax avoidance, this paper builds on the extensive literature in corporate finance on the determinants of firm value. Within this literature, it has become standard since Demsetz and Lehn (1985) to use Tobin's q to measure firm value. A variety of firm characteristics have been analyzed as explanatory variables, most notably the structure of ownership (Morck, Shleifer and Vishny, 1988), the nature of executive compensation (Mehran, 1995), and the institutional framework of governance (Gompers, Ishii and Metrick, 2003). This paper contributes to this literature by investigating the role of firm tax avoidance strategies, as mediated by governance arrangements, in determining firm value.

In its emphasis on the valuation consequences of tax avoidance, this paper is related to the large literature that examines how the tax treatment of transactions – for example, borrowing, dividends, spinoffs or mergers – is valued by the market but differs by emphasizing transactions

that only have tax avoidance as their goal.⁵ There has been limited work on the empirical determinants and consequences of such activities in the U.S. One notable exception is Graham and Tucker (2005) who construct a sample of firms involved in 44 corporate tax shelter cases over the period 1975-2000. By comparing these firms with a matched sample of firms not involved in such litigation, they identify characteristics (such as size and profitability) that are positively associated with the use of tax shelters, and argue that tax shelters serve as a substitute for interest deductions in determining capital structure. In addition, their data on the average life of corporate tax shelters is consistent with the results of this paper.

The rest of the paper proceeds as follows. Section 2 presents the hypothesis. Section 3 describes the data, methodology and empirical specification. Section 4 presents the basic results and a series of extensions and robustness checks. Section 5 considers alternative interpretations, and concludes.

2. *Hypothesis Development*

Desai and Dharmapala (2005) develop a conceptual framework for understanding managerial decisions regarding tax avoidance activities. In particular, this choice is embedded within a context in which managers also have the opportunity to divert rents from shareholders, as in the literature on private benefits of control (e.g. Zingales, 1995). The hypothesis tested in this paper is derived from this framework.

Suppose that a firm generates a stream of (potential) income flows Y_t (where $t = 1, 2, \dots$). In each period t , the manager chooses the level of income reported to shareholders (denoted Y_t^S) and the income reported to the tax authorities (denoted Y_t^T), to maximize a weighted sum of the after-tax value of the firm and her utility from rents. These choices define a level of diversion ($Y_t - Y_t^S$) (the rents consumed by the manager), and a level of tax sheltering ($Y_t - Y_t^T$) in period t . Let τ_t denote the corporate tax rate in period t , and assume that there are no other taxes. Then, the after-tax present value of the firm (denoted V) is simply:

$$V = \sum_{t=1}^{\infty} \delta^{t-1} (Y_t^S - \tau_t Y_t^T) \quad (1)$$

⁵ See Fama and French (1998), D'Souza and Jacob (2000), Gentry, Kemsley and Mayer (2003), Ayers, Lefanowicz and Robinson (2003), and the references therein, as examples.

where δ is the discount factor. Obviously, increases in tax sheltering (i.e. decreases in Y_t^T) will always raise V , holding everything else constant. This is consistent with the view of tax avoidance as a simple transfer from the state to shareholders (even though there are some agency costs in this setup).

However, the costs to the manager of engaging in diversion and sheltering may be interdependent. These interactions can be represented by a loss function $L(Y_t - Y_t^S, Y_t - Y_t^T)$ that depends on the levels of both activities, so that the marginal cost to the manager of engaging in one activity in a given period t may depend on the level of the other activity in that period. For instance, when the manager is subject to a time or effort constraint, it might be expected that the two activities may be substitutes – engaging in a higher level of sheltering will raise the marginal costs of diversion, and so reduce the equilibrium level of the latter. In these circumstances, the positive effect of an exogenous increase in tax sheltering on V will be reinforced by an increase in the manager's optimal Y_t^S .

On the other hand, it is also possible that there may exist positive feedback effects (or “complementarities”) between the two activities. For instance, it may be the case that tax sheltering involves complex transactions or the routing of income through offshore tax havens, and that these features make it more difficult for shareholders to monitor managerial diversion (and hence lowers the marginal cost of diversion from the manager's point of view). Then, an exogenous increase in tax sheltering would raise V , but would also induce a higher level of diversion (i.e. lower Y_t^S), so that the overall effect on V would be ambiguous.

Of course, it is difficult to determine *a priori* whether sheltering and diversion are likely to have positive or negative feedback effects. Desai and Dharmapala (2005) find that changes in the structure of executive compensation that increase the weight placed by managers on firm value lead to reduced levels of tax sheltering activity. This is consistent with the existence of strong positive feedback effects between sheltering and diversion – the improved alignment of incentives induces the manager to divert less, and this in turn increases the marginal cost of sheltering, and so reduces the equilibrium level of tax avoidance activity.⁶

⁶ Desai and Dharmapala (2004) also discuss a recent case related to the energy firm Dynegy, Inc. to demonstrate the manner in which complementarities between tax avoidance and diversion exist. This information there is derived from legal proceedings for fraud but the scope of the argument is more general, and does not rely on illegal behavior, either with respect to diversion or tax sheltering. It is also interesting to note that a variety of popular

When positive feedback effects exist, as argued above, the effect of tax sheltering on firm value is ambiguous. It is possible, however, to make an unambiguous prediction about the *relative* effects on firms with stronger and weaker governance institutions. In this setting, a stronger governance environment is defined as one where it is more difficult for managers to increase diversion. To illustrate the argument using a polar case, consider a firm that is sufficiently well-governed that any increase in diversion is prohibitively costly for the manager. A small exogenous increase in tax avoidance at such a firm will directly raise V ; moreover, because the manager is unable to raise the diversion level (even if the marginal cost of diversion falls as a result of the increase in sheltering) the increase in V will not be offset by a decrease in Y_t^S . In contrast, a less well-governed firm where the manager faces the same degree of complementarity between sheltering and diversion, provides a manager with greater scope for increasing the level of diversion. The same exogenous increase in tax sheltering at this firm would lead directly to the same increase in V , but would also induce a higher level of diversion (i.e. lower Y_t^S). Thus, the net increase in V would be smaller (or the decrease larger) than in the case of the well-governed firm. This argument leads to the following hypothesis:

Hypothesis: *With strong complementarities between tax sheltering and rent diversion, the effect of tax avoidance activity on firm value will be larger (i.e. more positive or less negative) for well-governed firms relative to the effect for less well-governed firms.*

Note that this hypothesis is not about the effects of tax avoidance activity on firm value *per se* but rather about the effects of the *interaction* between tax avoidance and governance institutions.

3. *Data and Empirical Specification*

The data used to test the hypothesis described above is drawn from three sources. Financial accounting data is drawn from Standard and Poor's Compustat database, executive compensation controls (and certain other variables) from Standard and Poor's Execucomp database, and the index of governance institutions is the one calculated in Gompers, Ishii and Metrick (2003). Merging these (with exclusions described below) leads to a dataset with 3,658

press accounts of tax shelters in the business press emphasize the complexity shelters introduce and discuss them with skepticism and distrust. See, in particular, "The Corporate Tax Game" and "The Rise of the Wall Street Tax Machine" in *Business Week*, March 31, 2003. Both articles discuss the degree to which opaque tax avoidance strategies contribute to earnings increases at various firms and how tax avoidance strategies at Enron morphed into opportunities for managerial wrongdoing. These articles ask if corporate tax shelters will become the "next big scandal."

observations at the firm-year level, on 687 firms over the period 1993-2001. These variables are described in detail below; summary statistics are reported in Table 1.

3.1. *The Dependent Variable*

Tobin's q is employed as the measure of firm value. This follows the practice in the study of governance institutions and corporate finance (e.g. Demsetz and Lehn, 1985; Morck, Shleifer and Vishny, 1988; Mehran, 1995). The definition of q used in Kaplan and Zingales (1997) and Gompers, Ishii and Metrick (2003) is employed with one modification. They define q as the ratio of the market value of assets (defined as the book value of assets, plus the market value of common stock, minus the book value of common stock, minus deferred tax expense) to the book value of assets. Given the emphasis on the effects of tax avoidance activity on q , deferred tax expense is not included in the calculation of the value of q used in our basic results.⁷ Current tax avoidance activity may result in changes to future tax liabilities and thus create a mechanical correlation between the dependent variable and the measure of tax avoidance.⁸

3.2. *Measuring corporate tax avoidance*

In order to construct a measure of tax avoidance, this analysis begins with a measurement of the book-tax gap, makes adjustments for loss-making firms, and then controls for factors other than tax avoidance that might create a gap between these reports.

The difference between income reported to capital markets (using Generally Accepted Accounting Principles (GAAP)) and to the tax authorities – the so-called book-tax gap – has attracted considerable interest in recent years and has been related to measures of corporate tax avoidance.⁹ Given that tax returns are confidential, income reported to tax authorities cannot be observed directly and must be inferred using financial accounting data, as described in Manzon and Plesko (2002) and implemented in Desai and Dharmapala (2005). This approach uses firms'

⁷ However, using the full definition leads to consistent results, as described in Section 4.

⁸ Thus, using the Compustat data item numbers, we define q_{it} for firm i in year t as follows:

$$q_{it} = \frac{(\#6)_{it} + ((\#24)_{it} * (\#25)_{it}) - (\#60)_{it}}{(\#6)_{it}} .$$

⁹ See Manzon and Plesko (2002) and Desai (2003, 2004). Lev and Nissim (2004) and Hanlon (2005) investigate how book-tax gaps predict the quality of future earnings. While related, this paper studies the response of firm value to managerial efforts to shelter corporate income from taxes, with these efforts being proxied by the component of the book-tax gap that is attributable to tax avoidance rather than earnings management. Lev and Nissim (2004) and Hanlon (2005), on the other hand, consider book-tax gaps an alternative form of earnings management and analyze the consequences of these managed earnings for subsequent accounting and market outcomes, without consideration of the contemporaneous valuation of the tax avoidance component of those gaps.

reported current federal tax expense (Compustat item #63), and “grosses up” this tax liability by employing the graduated structure of corporate tax rates in the U.S.¹⁰ The firm’s inferred taxable income can simply be subtracted from the firm’s reported pretax (domestic US) financial income (Compustat #272) to obtain the inferred book-tax gap. To control for differences in firm scale, and because the dependent variable is deflated by a measure of firm size, this measure of the book-tax gap is scaled by the lagged book value of assets (Compustat #6) to obtain the measure of the book-tax gap, denoted $BT_{i,t}$ for firm i in year t , used in the analysis below.¹¹

Increases in tax avoidance are likely, at the margin, to be less valuable for loss-making firms with no current tax liability (even though tax savings potentially have some value for such firms through net operating loss carryforwards and carrybacks). Thus, the analysis below restricts the sample to firm-years in which firms are estimated to have positive taxable income. Another important reason for excluding such observations is that the appropriate marginal tax rate to use in “grossing up” the tax expense is unclear when taxable income is zero or negative.

In addition, inferred values of taxable income must incorporate the effects of tax deductions resulting from stock option exercises by employees. A firm’s taxable income is reduced by the value of the compensation at the time that employees exercise their options. However, under current rules the reported tax expense is unaffected; instead, there is an increase in contributed capital (see Manzon and Plesko (2002) for more details). Thus, even if observations where inferred taxable income is zero or negative are excluded, the sample may include some firm-years for which stock option deductions that exceed their income. As discussed in Graham, Lang and Shackelford (2004), option activity is sufficiently widespread that this effect is nontrivial. While the value of stock option deductions claimed by firms is not directly observable, it is possible to observe the value of stock option exercises by each of the firm’s top five managers, and to aggregate this across executives for each firm-year. The estimate of taxable income can be recalculated using this figure to provide a more precise means of identifying firms that are not paying taxes.¹² In the results reported below, firm-years for

¹⁰ The exclusion of foreign taxes and income from this calculation avoids problems associated with inferring the applicable foreign tax rates.

¹¹ Of course, there are limitations imposed by the confidentiality of tax returns and this inference procedure. For discussions of these limitations, see Hanlon (2003).

¹² Clearly, this is an underestimate of the firm’s total stock option deductions, as it only includes exercises by a subset of employees. However, firm-years for which we infer negative taxable income using this approach will *a fortiori* have negative taxable income in reality (when stock option deductions are taken into account). For example,

which this adjustment makes inferred taxable income zero or negative are also excluded (this adjustment only affects a relatively small number of observations).

While the effects of stock options are incorporated in the creation of the sample, they do not alter the basic measure of the book-tax gap. Reported financial income is not reduced by employees' stock option exercises, and so the exclusion of stock option exercises from *both* tax expense and financial income does not bias the measure of the book-tax gap (see Manzon and Plesko (2002) for more details). Nonetheless, some concerns may remain that the valuation of tax avoidance may be affected by the tax shield available to a firm from stock option exercises. This concern is addressed by including the value of observed stock option exercises as a control in robustness checks.

The book-tax gap need not reflect corporate tax avoidance activity and so any measure of corporate tax avoidance must control for other factors. Specifically, earnings management may contribute to the measured book-tax gap. Studies of earnings management have argued that such manipulation is most likely to occur through the exercise of managerial discretion in determining accounting accruals (i.e. adjustments to realized cash flows that are used in calculating the firm's net income), as in Healy (1985). The computation of total accruals for firm i in year t (denoted TA_{it}) uses data on changes (between year $(t - 1)$ and year t) in the following variables: current assets (Compustat #4), current liabilities (Compustat #5), cash and short-term investments (Compustat #1), and debt in current liabilities (Compustat #34), as well as the level of depreciation and amortization in year t (Compustat #14). Like the book-tax gap, the accruals measure is scaled by the lagged book value of assets (Compustat #6).¹³ Alternative measures of earnings management are also employed and discussed below.¹⁴

The basic intuition underlying this paper's measure of tax avoidance is that book-tax gaps are attributable either to earnings management or to tax avoidance activity. Accordingly, adjusting for earnings management (using an accruals proxy) will isolate the component of the

aggregate stock option deductions estimated using this approach constitute about 6% of firms' pretax income in our full sample, compared to the corresponding 10% figure reported in Graham, Lang and Shackelford (2004) for a sample of S&P 100 firms.

¹³ More precisely, the measure of total accruals is given by:

$$TA_{it} = \frac{[(\#4)_{it} - (\#4)_{i,t-1}] - [(\#5)_{it} - (\#5)_{i,t-1}] - [(\#1)_{it} - (\#1)_{i,t-1}] + [(\#34)_{it} - (\#34)_{i,t-1}] - (\#14)_{it}}{(\#6)_{i,t-1}} .$$

¹⁴ See also Leuz, Nanda and Wysocki (2003) for a discussion of alternative measures of earnings management.

gap that is due to tax avoidance. DD (2005) compute a direct measure of tax avoidance activity by regressing BT_{it} on TA_{it} , with firm fixed effects. This direct measure is not required here, so instead BT_{it} is used as a proxy for tax avoidance activity, while earnings management is controlled for by including TA_{it} (or various alternative proxies) on the right hand side in the regressions reported below.

3.3. Governance Institutions

As described above, the valuation of tax avoidance is hypothesized to depend on the quality of firm governance. Gompers *et al.* (2003) develop a firm-level measure of governance by combining data from the Investor Responsibility Research Center (IRRC) on firms' takeover defenses with information on antitakeover provisions in state statutes to calculate an index that reflects the extent to which the firm is protected from hostile takeovers. This measure (denoted G) attempts to capture the degree of managerial entrenchment. The index is a count of the number of applicable provisions and can take on integer values from 0 to 24. A lower value of G (i.e. a smaller number of antitakeover protections) is associated with a better quality of governance (see Gompers *et al.* (2003, Appendix 1) for more details).¹⁵

While G is available for a number of different years since 1990, it is stable for most firms over time. The value of G in 1998 is used here, as this ensures a wider coverage of firms than the earlier years; this is firm-specific and time-invariant (i.e. $G_{it} = G_i$). In addition, because some antitakeover provisions may be more important than others but are given equal weight in the determination of G , the cardinal properties of the index are difficult to interpret. Thus, an indicator variable $WELLGOV_i$ is defined to partition the sample of firms into those that are relatively well-governed ($G_i \leq 7$) and those that are relatively less well-governed ($G_i > 7$).¹⁶ This variable is interacted with time-varying variables in the analysis below, and so is not absorbed by the firm fixed effects.

To check the robustness of the basic results using G , an alternative measure of governance characteristics - the fraction of the firm's shares owned by institutional investors in a

¹⁵ Using an alternative measure that captures a different aspect of governance characteristics - the fraction of the firm's shares owned by institutional investors in a given year (from the CDA Spectrum database), which is thought to proxy for the degree of shareholder monitoring - leads to results that, while weaker, are broadly similar to those using G .

¹⁶ While the precise cutoff point of $G_i \leq 7$ is arbitrary, similar results are obtained when alternative definitions of $WELLGOV_i$, using cutoff points close to 7, are used.

given year (from the CDA Spectrum database, based on Schedule 13F filings with the SEC by large institutional investors) – is also used. This fraction (which is reported quarterly) is averaged over each firm-year, and denoted by $I_{i,t} \in [0, 1]$. The basic motivation behind this proxy is that institutional investors have greater incentives and capacity to monitor managerial performance; thus, it captures a quite different aspect of governance than does G . Nonetheless, using $I_{i,t}$ leads to broadly consistent results, as discussed in Section 4 below.

3.4. Additional Controls

In order to isolate how corporate tax avoidance is valued, other factors that may influence firm value must be addressed. Because firm fixed effects are employed in the specification described below, many of the sources of cross-sectional variation in q across firms that have been discussed in the literature need not be relevant here. There is a substantial literature that finds stock-based compensation to be a significant determinant of firm value, presumably through incentive-alignment effects (e.g. Morck, Shleifer and Vishny, 1988; Mehran, 1995). In addition, the structure of executive compensation plays a central role in DD (2005).

Accordingly, the analysis controls for the value of stock option grants to executives as a fraction of total compensation. This variable, denoted $STKMIXGRANT_{it}$, is calculated from data at the manager-year level in the Execucomp database. For firm i in year t , the Black-Scholes value of stock options granted (Execucomp variable $BLKVAL$), the salary (Execucomp variable $SALARY$), and the bonus (Execucomp variable $BONUS$) are aggregated across all executives.

$STKMIXGRANT_{it}$ is the ratio of the sum of the values of stock options to total compensation (defined as the sum of the value of stock options, salary and bonus).¹⁷

Firm sales (Execucomp variable $SALES$) are employed to control for changes in firm size over time.¹⁸ This control is particularly important because G is positively correlated with firm size and negatively correlated with past sales growth (Gompers *et al.*, 2003, Table V). The sales control is intended to ensure that the distinctive effects for well-governed and poorly-governed firms are due, not to changes in these factors over time, but to governance institutions *per se*. The

¹⁷ This is similar to the stock-based compensation measures used in Mehran (1995) and in a large subsequent literature. Using a measure based on stock option exercises (defined analogously) does not affect the results. However, there are serious endogeneity concerns with this measure – an exogenous increase in q will induce managers to exercise more options. Thus, the reported results use only $STKMIXGRANT_{it}$ as a control.

¹⁸ Assets and market value enter into the definition of q and so would be mechanically correlated with the dependent variable.

results are unchanged if the number of employees is used instead of, or in addition to, sales. Finally, to control for changes over time in the risk associated with a firm's stock price, a measure of volatility (Execucomp variable *BS_VOLATILITY*, the standard deviation calculated over a 60-month period) is included as a control.

3.5. *The Empirical Specification*

While the central claim of the paper concerns the interaction of governance institutions and tax avoidance activity, the analysis begins with an investigation of whether tax avoidance tends to be associated with increases or decreases in firm value within the full sample. This question is addressed using the following specification:

$$q_{i,t} = \beta_1 BT_{i,t} + \beta_2 TA_{i,t} + \beta_3 STKMIXGRANT_{i,t} + \beta_4 SALES_{i,t} + \beta_5 BS_VOLATILITY_{i,t} \\ + \text{Firm Fixed Effects} + \text{Year Effects} + v_{i,t} \quad (2)$$

where the variables BT_{it} and TA_{it} are as defined above, and $v_{i,t}$ is the error term (note that all regressions reported in this paper use both firm fixed effects and year dummies). The coefficient β_1 can be interpreted as the marginal effect of tax avoidance activity on firm value.

To test if the valuation of corporate tax avoidance is dependent on firm governance, interaction terms for all independent variables (including the year dummies) are employed so that the coefficient for each of the regressors is estimated separately for the well-governed and poorly-governed subsamples:¹⁹

$$q_{i,t} = \beta_1 BT_{i,t} + \beta_2 (WELLGOV_i * BT_{i,t}) + \beta_3 TA_{i,t} + \beta_4 STKMIXGRANT_{i,t} + \beta_5 SALES_{i,t} \\ + \beta_6 BS_VOLATILITY_{i,t} + \text{Other Interaction Terms} + \text{Firm Fixed Effects} \\ + \text{Year Effects} + v_{i,t} \quad (3)$$

The coefficient of interest is β_2 , and the null hypothesis can be expressed as $\beta_2 = 0$, while the hypothesis in Section 2 implies that $\beta_2 > 0$ (i.e. the effect of tax avoidance on firm value is greater for well-governed firms than for poorly-governed firms).

4. *Results*

4.1. *Basic Results*

¹⁹ The intercepts are firm-specific, and can differ not only across the subsamples, but across firms.

Table 2 reports the results of the regression specified in equation (2), using the controls and sample described above. The effect of the book-tax gap on firm value is insignificant (all results reported in this paper use robust (White, (1980)) standard errors that are clustered at the firm level). Given that earnings management has been controlled for using $TA_{i,t}$, this suggests that tax avoidance activity has no effect on firm value. The control variables have the expected signs: for example, the use of more stock-based compensation raises q , which is consistent with a substantial body of existing evidence (e.g. Mehran, 1995).

The test of the hypothesis using Eq. (3) is reported in Column 2. Here, the coefficient on the interaction term between the well-governed dummy and $BT_{i,t}$ is positive and significant. This implies that, while the overall effect of tax avoidance on firm value is indistinguishable from zero, this effect is significantly more positive for well-governed firms than for poorly-governed firms, a finding that is consistent with the hypothesis that agency problems complicate the simple interpretation of corporate tax avoidance as transferring value from the state to shareholders.

The intuition can be reinforced by running Eq. (2) separately on the well-governed and poorly-governed subsamples (Columns 3 and 4, respectively). For well-governed firms, the effect of tax avoidance on q is positive and of borderline significance. In contrast, for poorly-governed firms the effect is negative, though insignificant. Given positive feedback effects between tax avoidance and diversion, the findings can be interpreted as follows. For poorly-governed firms, increases in tax avoidance directly raise after-tax firm value, but also create greater opportunities for managers to divert income from shareholders. These effects seem to approximately offset each other in this sample. In contrast, the negative effect is less important for well-governed firms, as by definition they have stronger institutional restraints on diversion. Thus, the overall effect is positive for well-governed firms.²⁰

In Column 3, the coefficient of the book-tax gap measure is approximately 2 for the well-governed subsample.²¹ As both q and the book-tax gap are deflated by assets, this coefficient can be interpreted as follows. Suppose that the firm (unexpectedly) shelters an extra \$1 from taxes

²⁰ The results, combined with those in DD (2005), also shed some new light on what Weisbach (2002) terms the “undersheltering puzzle” (i.e. why firms do not avoid taxes to a far greater extent than they actually do, given the wide availability of shelter schemes and the low or nonexistent risk of penalties). Undersheltering (at least for firms that are less well-governed) may not be as puzzling as it first appears, given the zero or negative market response.

²¹ This point estimate is quite robust, varying between 1.6 and 2, depending on the precise set of controls included (see below for discussion of additional controls).

(holding everything else, including book income, fixed). This \$1 increase in the book-tax gap leads to a \$2 increase in market value. As the current-year tax benefit (assuming a 35% marginal rate) is only \$0.35, this may seem to be a large effect. However, it is reasonable to assume that the market will anticipate that the tax shelter will provide multiyear benefits. These expectations will presumably be reflected immediately in the firm's share price. Under these assumptions, and using reasonable discount rates, the estimated coefficient implies an expected life for a typical tax shelter of about 5 or 6 years. In the dataset on corporate tax shelter cases constructed by Graham and Tucker (2005), both of the two most common shelters – corporate-owned life insurance and transfer pricing devices – had an average active life of 5 years (see Graham and Tucker (2005) Table 1, p. 33). The magnitude of the effect for well-governed firms is thus consistent with what is known from other sources about corporate tax shelters.²²

While the results in Table 2 are consistent with the paper's hypothesis, and the economic magnitudes involved are reasonable, there are a number of possible measurement issues with the variables, especially the measures of earnings management and the book-tax gap. In addition, there are many other factors that could influence firm value, and so the changes in q may be driven by some omitted variable. The following subsections of the paper seek to address each of these issues in turn, and then discuss possible alternative explanations for the findings.

4.2. *Alternative Measures of Earnings Management*

The results in Table 2 use total accruals ($TA_{i,t}$) as a proxy for earnings management activity. Several alternative measures of “abnormal” or “discretionary” accruals (e.g. Jones, 1991; Dechow, Sloan and Sweeney, 1995; Dechow, Richardson and Tuna, 2003) have been developed to better isolate the components of accruals that are truly under managerial control. In short, some component of $TA_{i,t}$ is likely to be positive even in the absence of earnings management, given that accruals perform an important function in providing information about a firm's economic position. Discretionary accruals are calculated by isolating the nondiscretionary component of $TA_{i,t}$ (which managers have little opportunity to manipulate). The residual from a regression (within each industry) of $TA_{i,t}$ on its nondiscretionary component is inferred to be a measure of discretionary accruals $DA_{i,t}$ (Jones, 1991). The standard approach to computing $DA_{i,t}$

²² This finding is also consistent with portrayals of the tax shelter industry where cycles of innovation are fueled by repeated crackdowns (e.g. Hines, 2004).

is based on the assumption that the change in revenue from sales (measured using Compustat #12) is nondiscretionary; it involves regressing $TA_{i,t}$ on the change in sales and the value of plant, property and equipment (Compustat #7), with each variable being scaled by the lagged book value of assets, using industry effects at the 2-digit SIC level. Using $DA_{i,t}$ leads to results that are highly consistent with those in Table 2, as reported in Table 3, Column 1.

A refinement of the model described above involves excluding the change in credit sales (measured using accounts receivable, Compustat #302) from the nondiscretionary component of accruals (Dechow *et al.*, 1995). The rationale for this “modified Jones” model is that managers may exercise some discretion in determining the value of credit sales. The results using this measure of discretionary accruals are reported in Column 2; they are also highly consistent with those in Table 2. More recently, the modified Jones model has been refined further as follows (Dechow *et al.*, 2003). A measure of expected credit sales is included in the nondiscretionary component of accruals, while lagged accruals are included in order to capture the predictable component of $TA_{i,t}$, and future revenue growth (using Compustat #12) is included to account for increases in accruals that represent managers’ response to anticipated increases in sales. The results using this “forward-looking” Jones model are reported in Column 3, and are generally consistent with those in Table 2, although the interaction term is only of borderline significance.²³

4.3. *Robustness Checks for the Tax Avoidance Measure*

The results in Table 2 are based on the construction of the book-tax gap outlined in Section 3.²⁴ Several factors may lead to the mismeasurement of tax avoidance. Of particular importance is the role of future tax liabilities. Recall that deferred tax expense was omitted from the computation of q , while taxable income was inferred using current tax expense. Thus, the analysis so far does not take any account of changes in future tax liabilities. This could be important because current tax sheltering activity may take the form of deferring tax liabilities to

²³ The results are also robust to including a control for another measure of earnings management, proposed by Phillips, Pincus and Rego (2003) - deferred tax expense (this variable is discussed in Section 4.3 below, using a different motivation for its inclusion).

²⁴ This measure can be refined by adjusting for tax-deductible expenses (state and other income taxes, given by Compustat #173 and #211) and by subtracting tax-exempt income (equity in earnings of nonconsolidated subsidiaries – Compustat #55) – see Manzon and Plesko (2002). While missing values for these variables result in the sample size falling by about a quarter of the observations when this adjusted book-tax gap is used, the results are broadly consistent with those in Table 2, with the tax avoidance interaction term remaining positive and of very similar magnitude.

the future. Also, a focus on current tax avoidance ignores current actions by the firm that reduce its future tax liabilities, and hence increase the present value of the firm. To control for changes in future tax liabilities, deferred tax expense (Compustat #74), scaled by the book value of assets, is added to the model.²⁵ This leads to essentially consistent results, as shown in Table 4, Column 1.

Tax shields (such as interest payments on debt) can affect the value of engaging in tax avoidance.²⁶ Firms' leverage is controlled for by including measures of debt, in particular, long-term debt and debt in current liabilities, each scaled by the book value of assets. Adding these controls does not affect the results for the tax avoidance interaction term, which remains positive and significant, as shown in Table 4, Column 2. Another potential tax shield is provided by deductions for employees' stock option exercises (e.g. Graham, Lang and Shackelford, 2004). This issue has already been partially addressed by excluding firm-years in which observed stock option deductions exceed taxable income. Even so, firms that remain in the sample may still have substantial stock option deductions, and these may affect the value of engaging in tax avoidance. However, as reported in Table 4, Column 3, adding the value of stock option exercises by the top 5 executives (scaled by the book value of assets) to the model as a proxy for these deductions leads to results that are highly consistent with those reported in Table 2.

The results discussed above primarily use contemporaneous variables. This reflects an assumption that the market responds rapidly to changes in the level of tax avoidance activity. This approach may, however, miss the effects of past tax avoidance activity. Thus, a comprehensive lag specification is used to test the robustness of the results. This specification includes the contemporaneous right-hand-side variables in Eq. (3), along with one-period lags of these variables (apart from the volatility measure, which is not lagged because it is already calculated over a 5-year period). The results are reported in Table 4, Column 4. The contemporaneous interaction term remains positive and of borderline significance (even though the lags reduce the sample size and increase the number of regressors). The lagged interaction

²⁵ Adding deferred tax expense to the definition of q (as in Kaplan and Zingales (1997)) so that:

$$q_{it} = \frac{(\#6)_{it} + ((\#24)_{it} * (\#25)_{it}) - (\#60)_{it} - (\#74)_{it}}{(\#6)_{it}}$$

also leads to results that are highly consistent with those in Table 2, with the tax avoidance interaction term being positive and significant.

²⁶ For example, Graham and Tucker (2005) highlight the relationship between the use of tax shelters and capital structure in their sample of firms involved in tax shelter litigation.

term is also positive, but insignificant. Moreover, the (unreported) pattern of results for the well-governed and poorly-governed subsamples closely resembles that in Table 2. Thus, including the lagged terms does not fundamentally affect the conclusions of the analysis.²⁷

4.4. *Additional Controls*

The specifications used in obtaining the results in Table 2 (Eq's (2) and (3)) use a number of controls for factors that may affect firm value. However, it is still possible that the changes in q are driven by omitted variables. For example, unobserved shocks to the investment opportunities available to the firm may cause variations in q that are unrelated to tax avoidance activity, as q is generally thought to be closely associated with firms' investment decisions. Capital expenditures (Compustat #30), scaled by the book value of assets, are used to control for changes in firms' investment levels.²⁸ This variable has a positive association with q , but does not affect the tax avoidance interaction term (which remains positive and significant), as shown in Table 5, Column 1.²⁹

To control for the firm's past performance, the lagged return on assets (Execucomp variable ROA , which is defined as net income before extraordinary items and discontinued operations, divided by total assets, and expressed as a percentage) is added to the model. $ROA_{i,t-1}$ can control for either mean reversion (e.g. Fama and French, 2000) or persistence in earnings. Adding this new control variable leads to consistent results, as shown in Table 5, Column 2. Next, future revenue growth is used as a control for possible omitted variables that may affect market value, such as expectations about the firm's future sales. Future revenue growth is calculated (using Compustat #12) by subtracting revenue in year t from revenue in year $(t + 1)$,

²⁷ These issues could be addressed by isolating reports of tax shelter activity directly to remove any doubt about whether the market was responding to tax shelters. For example, using an event study approach that examines abnormal stock returns associated with the relatively small number of cases of tax shelter litigation would alleviate some concerns related to whether the tax avoidance measure actually captures that phenomenon. Unfortunately, the information revealed by the announcement of such cases would relate as much to issues of managerial competence and negative publicity in addition to investors' valuation of tax avoidance *per se*. The approach adopted here enables a large sample analysis but comes at the cost of some imprecision on the measurement of tax avoidance.

²⁸ In addition, this variable can control for changes in current and expected depreciation allowances that may affect measured book-tax differences.

²⁹ Changes in intangibles that affect q but are imperfectly measured in the book value of assets can be proxied for by research and development expenditures (Compustat #46) and advertising expenditures (Compustat #45). However, there are a large number of missing values for these variables (for example, there are only 973 observations for advertising expenditures). Using zeroes for the missing values (following Brick, Palmon and Wald (2003)) leads to results that are broadly consistent with those in Table 2, but it is difficult to reach definite conclusions because of the missing data.

and scaling by revenue in year t . As reported in Table 5, Column 3, this leads to essentially consistent results, with the interaction term being positive and borderline significant. Overall, then, adding extra control variables to the model leads to results that are generally consistent with those in Table 2.³⁰

4.5. *Alternative Explanations*

While the analysis discussed above suggests that the basic results are robust to several measurement issues, there are alternative explanations available for the link between the valuation of tax avoidance and firm governance. Note, however, that the use of a panel of firms with firm and year effects accounts for many obvious sources of heterogeneity that might confound the analysis.³¹ Two alternative explanations seem particularly relevant. The first emphasizes unobserved heterogeneity in tax avoidance strategies that is correlated with firm governance. The second alternative explanation is that the tax avoidance measure might measure something else that could be differentially valued based on firm governance.

First, it is possible that the differences in valuation of tax avoidance between the well-governed and poorly-governed subsamples relate to differences in the types of tax shelters used by these firms. It is possible that the smaller effect for poorly-governed firms is due to these firms investing in riskier shelters that are discounted at higher rates. While it is not possible to eliminate this alternative explanation, it should be noted that the point estimate for the poorly-governed firms is not positive, so this alternative explanation would require that poorly-governed firms invest in shelters with *negative* expected returns. This seems unlikely, given the wide availability of tax shelters with very high returns (e.g. Slemrod, 2004). While it is conceivable that firm governance is correlated with a differential appetite for risky tax shelters, the relative abundance of high return shelters and the absence of *any* positive effect for less well-governed firms suggest that this cannot explain the results entirely.

³⁰ Morck and Yang (2001) show that inclusion in the S&P 500 has a positive effect on q . However, no firms in this sample changed their inclusion status (determined using Execucomp variable *SPCODE*) over this period. There is evidence of higher q for firms incorporated in Delaware, at least over some time periods (e.g. Subramanian, 2004). However, very few firms change their state of incorporation. Firm age is sometimes used as an explanatory variable (e.g. Gompers *et al.*, 2003), but would of course be redundant here as both firm and year effects are used.

³¹ For example, it is possible that a trend towards growing foreign income may have led to both the tax avoidance measure (which relies on US tax expense only) and firm value increasing over time. However, as long as this constitutes a general trend within the sample, it would be absorbed by the year effects.

Second, if the proxies used for earnings management are incomplete, then the remaining component of the book-tax gap may be mischaracterized as tax avoidance when it actually represents earnings management. Accordingly, it is possible that the results are driven by differential market reactions to earnings management by well-governed and poorly-governed firms. One variant of this earnings management explanation would rationalize the results as reflecting a situation where earnings manipulation is more harshly penalized for poorly-governed firms. This view, however, would have to explain why well-governed firms feature a *positive* valuation of earnings management. While there are theoretical models that suggest that earnings management may be value-maximizing for shareholders,³² the more common view is that such activities represent managers pursuing private benefits (Leuz, Nanda and Wysocki, 2003), for instance raising their compensation by meeting bonus targets (Healy, 1985) or increasing the firm's stock price prior to exercising options. Again, this alternative explanation is impossible to dismiss completely, but the results of the paper are difficult to reconcile with conventional interpretations of earnings management and their consequences for shareholders.

If earnings management is difficult to observe, the differential market reactions could be attributed to investors placing more trust in the earnings of well-governed firms. For example, when managers of well-governed firms use accruals to adjust realized cash flows upwards, this may be viewed as an indication that they are smoothing future increases in revenues and, accordingly, lead to a positive reaction. On the other hand, similar actions by the managers of poorly-governed firms may be viewed with more skepticism and lead to a zero or negative reaction. If this explanation were driving the results, controlling for variables such as future revenue growth should reduce or eliminate the differential market response, by capturing differences in the extent to which managed earnings are informative about future revenues. In Section 4.4, a variable capturing future revenue growth was interpreted as a proxy for unobserved expectations concerning the firm's future performance, but it can also be interpreted as a variable that captures the informativeness of a firm's earnings statements. As shown in Table 5, Column 3, the basic results are robust to including a control for future sales growth. Thus, it does not appear that this alternative explanation can fully account for the empirical results.

³² See e.g. Goel and Thakor (2003) and Bolton, Scheinkman and Xiong (2003).

5. *Conclusion*

The simple presumption that corporate tax avoidance represents a transfer of value from the state to shareholders does not appear to be validated in the data. In the full sample, tax avoidance activity by firms does not lead to increases in firm value. There is a positive effect for a subsample of firms that are identified as being well-governed, while there is no significant effect for firms that are less well-governed. These findings appear to be robust to a wide variety of checks for measurement issues and alternative explanations. The results are consistent with the hypothesis that the valuation of tax avoidance is a function of firm governance and, more broadly, with the point of view that tax avoidance and managerial efforts to divert value from shareholders are intertwined. In doing so, this paper shows that incorporating agency issues into the analysis of corporate tax avoidance, as advocated by Slemrod (2004), leads to theoretical and empirical conclusions that are substantially different from those that would be predicted by a model where managers are perfect agents.

The findings also reinforce the quantitative importance of tax avoidance in the decision-making process of managers that is suggested by anecdotal evidence and by the analysis of Graham and Tucker (2005). In particular, they argue that, for firms in their sample, tax shelters function as non-debt tax shields and they interact with capital structure decisions in significant ways. This paper demonstrates that the market values those actions with skepticism given the complexities they introduce and this skepticism is only offset in the presence of high-quality governance.

References

- Auerbach, A. J. (2002) "Taxation and Corporate Financial Policy" in A. J. Auerbach and M. Feldstein (eds.) *Handbook of Public Economics*, Vol. 3, North-Holland: Amsterdam, 1251-1292.
- Ayers, B. C., C. E. Lefanowicz and J. R. Robinson (2003) "Shareholder Taxes in Acquisition Premiums: The Effect of Capital Gains Taxation" *Journal of Finance*, 58, 2783-2801.
- Bankman, J. (2004) "The Tax Shelter Problem" *National Tax Journal*, 57, 925-936.
- Bolton, P., J. Scheinkman and W. Xiong (2003) "Executive Compensation and Short-Termist Behavior in Speculative Markets" NBER Working Paper #9722.
- Brick, I. E., O. Palmon and J. K. Wald (2003) "CEO Compensation, Director Compensation, and Firm Performance: Evidence of Cronyism" Working paper.
- Brown, J. R., N. Liang and S. Weisbenner (2004) "Executive Financial Incentives and Payout Policy: Firm Responses to the 2003 Dividend Tax Cut" NBER Working Paper #11002.
- Chen, K. P. and C. Y. C. Chu (2005) "Internal Control vs. External Manipulation: A Model of Corporate Income Tax Evasion" *Rand Journal of Economics*, forthcoming.
- Chetty, R. and E. Saez (2004) "Dividend Taxes and Corporate Behavior: Evidence from the 2003 Dividend Tax Cut" NBER Working Paper #10841.
- Cloyd, B., L. F. Mills and C. D. Weaver (2003) "Firm Valuation Effects of the Expatriations of U.S. Corporations to Tax Haven Countries" *The Journal of the American Taxation Association*, 25, 87-109.
- Crocker, K. J. and J. Slemrod (2005) "Corporate Tax Evasion with Agency Costs" *Journal of Public Economics*, forthcoming.
- Dechow, P. S. Richardson and I. Tuna (2003) "Why Are Earnings Kinky? An Examination of the Earnings Management Explanation" *Review of Accounting Studies*, 8, 355-384.
- Dechow, P., R. Sloan and A. Sweeney (1995) "Detecting Earnings Management" *The Accounting Review*, 70, 193-225.
- Demsetz, H. and K. Lehn (1985) "The Structure of Corporate Ownership: Causes and Consequences" *Journal of Political Economy*, 93, 1155-1177.
- Desai, M. A. (2003) "The Divergence between Book and Tax Income" in J. M. Poterba (ed.) *Tax Policy and the Economy*, Vol. 17, MIT Press: Cambridge, MA, 169-206.
- Desai, M. A. (2004) "The Degradation of Corporate Profits" Working paper.

- Desai, M. A. and D. Dharmapala (2005) “Corporate Tax Avoidance and High Powered Incentives” *Journal of Financial Economics*, forthcoming.
- Desai, M. A., A. Dyck, and L. Zingales (2004) “Theft and Taxation” NBER Working Paper #W10978.
- Desai, M. A. and J. R. Hines Jr. (2002) “Expectations and Expatriations: Tracing the Causes and Consequences of Corporate Inversions” *National Tax Journal*, 55, 409-441.
- D’Souza, J. and J. Jacob (2000) “Why Firms Issue Targeted Stock” *Journal of Financial Economics*, 56, 459-83.
- Fama, E. F. and K. R. French (1998) “Taxes, Financing Decisions and Firm Value” *Journal of Finance*, 53, 819-843.
- Fama, E. F. and K. R. French (2000) “Forecasting Profitability and Earnings” *Journal of Business*, 73, 161-175.
- Gentry, W. M., D. Kemsley and C. J. Mayer (2003) “Dividend Taxes and Share Prices: Evidence from Real Estate Investment Trusts” *Journal of Finance*, 58, 261-282.
- Goel, A. and A. Thakor (2003) “Why Do Firms Smooth Earnings?” *Journal of Business*, 76, 151-192.
- Gompers, P. A., J. Ishii and A. Metrick (2003) “Corporate Governance and Equity Prices” *Quarterly Journal of Economics*, 118, 107-155.
- Graham, J. R. (2003) “Taxes and Corporate Finance: A Review” *Review of Financial Studies*, 16, 1074-1128.
- Graham, J. R., M. H. Lang, and D. A. Shackelford (2004) “Employee Stock Options, Corporate Taxes, and Debt Policy” *Journal of Finance*, 59, 1585-1618.
- Graham, J. R. and A. Tucker (2005) “Tax Shelters and Corporate Debt Policy” Working paper.
- Hanlon, M. (2003) “What Can We Infer About a Firm’s Taxable Income from its Financial Statements?” *National Tax Journal*, 56, 831-863.
- Hanlon, M. (2005) “The Persistence and Pricing of Earnings, Accruals, and Cash Flows when Firms Have Large Book-Tax Differences” *The Accounting Review*, forthcoming.
- Healy, P. (1985) “The Effect of Bonus Schemes on Accounting Decisions” *Journal of Accounting and Economics*, 7, 85-107.
- Hines, J. R., Jr. (2004) “On the Timeliness of Tax Reform” *Journal of Public Economics*, 88, 1043-1059.

- Jones, J. (1991) "Earnings Management During Import Relief Investigations" *Journal of Accounting Research*, 29, 193-228.
- Kaplan, S. N. and L. Zingales (1997) "Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints?" *Quarterly Journal of Economics*, 112, 169-216.
- Leuz, C., D. Nanda and P. D. Wysocki (2003) "Earnings Management and Investor Protection: An International Comparison" *Journal of Financial Economics*, 69, 505-527.
- Lev, B. and D. Nissim (2004) "Taxable Income, Future Earnings, and Equity Values" *The Accounting Review*, 79, 1039-1074.
- Manzon, G. B., Jr. and G. A. Plesko (2002) "The Relation Between Financial and Tax Reporting Measures of Income" *Tax Law Review*, 55, 175-214.
- Mehran, H. (1995) "Executive Compensation Structure, Ownership, and Firm Performance" *Journal of Financial Economics*, 38, 163-184.
- Morck, R. (2004) "How to Eliminate Pyramidal Business Groups - The Double Taxation of Inter-Corporate Dividends and Other Incisive Uses of Tax Policy" NBER Working Paper #10944.
- Morck, R., A. Shleifer and R. Vishny (1988) "Management Ownership and Corporate Performance: An Empirical Analysis" *Journal of Financial Economics*, 20, 293-315.
- Morck, R. and F. Yang (2001) "The Mysterious Growing Value of S&P 500 Membership" NBER Working Paper #W8654.
- Perez-Gonzales, F. (2003) "Large Shareholders and Dividends: Evidence From U.S. Tax Reforms" Working paper.
- Phillips, J., M. Pincus and S. O. Rego (2003) "Earnings Management: New Evidence Based on Deferred Tax Expense" *The Accounting Review*, 78, 491-521.
- Slemrod, J. (2004) "The Economics of Corporate Tax Selfishness" *National Tax Journal*, 57, 877-899.
- Slemrod, J. and S. Yitzhaki (2002) "Tax Avoidance, Evasion and Administration" in A. J. Auerbach and M. Feldstein (eds.) *Handbook of Public Economics*, Vol. 3, North-Holland: Amsterdam, 1423-1470.
- Subramanian, G. (2004) "The Disappearing Delaware Effect" *Journal of Law, Economics & Organization*, 20, 32-59.

U.S. Department of the Treasury (1999) "The Problem of Corporate Tax Shelters: Discussion, Analysis and Legislative Proposals" Washington D.C.: U.S. Government Press Office.

Weisbach, D. (2002) "Ten Truths about Tax Shelters" *Tax Law Review*, 55, 215-253.

White, H. (1980) "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity" *Econometrica*, 48, 817-830.

Zingales, L. (1995) "Insider Ownership and the Decision To Go Public" *Review of Economic Studies*, 62, 425-448.

Table 1
Summary Statistics

	<u>Mean</u>	<u>Standard Deviation</u>	<u>Number of Observations</u>
Tobin's q (excluding deferred tax expense)	2.2588	1.5768	3,658
Tobin's q (including deferred tax expense)	2.2204	1.5738	3,286
Book-tax gap (scaled)	0.0050	0.0666	3,658
Adjusted book-tax gap (scaled)	(0.0020)	0.0629	2,807
Total accruals (scaled)	(0.0380)	0.1074	3,658
Discretionary Accruals (scaled): Jones Model	0.0029	0.0966	3,653
Discretionary Accruals (scaled): Modified Jones Model	0.0029	0.0975	3,548
Discretionary Accruals (scaled): Forward-Looking Jones Model	0.0043	0.1055	3,451
Ratio of Value of Stock Option Grants to Total Compensation for Top 5 Executives	0.3890	0.2477	3,658
Value of Stock Option Exercises by Top 5 Executives (scaled)	0.0035	0.0133	3,658
Sales (\$ billion)	4.4502	9.6611	3,658
Volatility (Black-Scholes measure)	0.3581	0.1509	3,658
Deferred tax expense (scaled)	0.0291	0.0356	3,286
Return on assets (%)	6.6497	6.8781	3,658
Plant, Property and Equipment (scaled)	0.5957	0.3590	1,023
Capital expenditures (scaled)	0.0701	0.0530	3,606
R & D expenditures (scaled)	0.0551	0.0601	2,584
Advertising expenditures (scaled)	0.0581	0.0773	973
Long-term debt (scaled)	0.1782	0.1447	3,650
Debt in current liabilities (scaled)	0.0399	0.0543	3,658
Governance Index, 1998	9.3486	2.7965	3,658
Institutional Ownership (fraction)	0.5904	0.1691	3,734

Note: These variables are defined as in the text. Tobin's q (without deferred taxes) is defined in Section 3, and Tobin's q (with deferred taxes) is defined in Section 4. "Scaled" variables are deflated by the lagged or contemporaneous book value of assets.

Table 2

Tax Avoidance, Firm Value and Governance Institutions

<i>Dependent Variable:</i>	Tobin's <i>q</i>			
	(1)	(2)	(3)	(4)
	All Firms	All Firms	Well-Governed Firms	Poorly-Governed Firms
Book-Tax Gap (Scaled)	0.4563 (0.4923)	-0.3830 (0.4547)	2.0916 * (1.1164)	-0.3830 (0.4523)
Book-Tax Gap Interacted with Dummy for Better Governed Firms		2.4746 ** (1.1883)		
Total Accruals (Scaled)	0.6379 *** (0.2273)	0.6774 (0.4162)	0.5955 ** (0.2625)	0.6774 (0.4140)
Ratio of Value of Stock Option Grants to Total Compensation for Top 5 Executives	0.2528 ** (0.1127)	0.3742 *** (0.1258)	0.0143 (0.2352)	0.3742 *** (0.1251)
Sales	0.0288 ** (0.0128)	0.0432 * (0.0236)	0.0180 * (0.0106)	0.0432 * (0.0235)
Volatility	-1.476814 *** (0.5546)	-2.1009 *** (0.6490)	-0.8384 (0.5247)	-2.1009 *** (0.6455)
Year and Firm Effects?	Y	Y	Y	Y
No. of Firms	687	687	206	481
No. of Obs.	3,658	3,658	999	2,659
R-Squared	0.7278	0.7343	0.7754	0.6818

Note: The dependent variable is Tobin's *q*, as defined in Section 3. The sample (over the period 1993-2001) is drawn from the merged Compustat and Execucomp databases, and is restricted to those firms for which data on the Governance Index is available. It is also limited to those firm-years with positive current Federal tax expense and positive (adusted) taxable income. All specifications include year effects, firm fixed effects and the controls listed. The specification in column 2 also includes interaction terms (with the dummy for better governed firms) for all the right-hand-side variables, except the firm fixed effects. The dummy for better governed firms is equal to one if the Governance Index is lower than or equal to 7 and zero otherwise. In column 3, the sample is restricted to firms with a Governance Index with a value lower than or equal to 7. In column 4, the sample is restricted to firms with a Governance Index with a value higher than 7. Robust standard errors that are clustered at the firm level are presented in parentheses; *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 3**Tax Avoidance, Firm Value and Governance Institutions: Alternative Measures of Earnings Management**

<i>Dependent Variable:</i>	Tobin's q		
	(1)	(2)	(3)
	Jones Model	Modified Jones Model	Forward-looking Jones Model
Book-Tax Gap Interacted with Dummy for Better Governed Firms	2.4862 ** (1.1893)	2.4659 ** (1.1975)	2.4215 * (1.3203)
Accruals Measure (Scaled)	0.7453 * (0.3912)	0.7542 * (0.3976)	0.7126 * (0.4193)
Basic Controls, Year and Firm Effects?	Y	Y	Y
No. of Firms	687	674	668
No. of Obs.	3,653	3,548	3,451
R-Squared	0.7343	0.7363	0.7414

Note: The dependent variable is Tobin's q , as defined in Section 3. The sample (over the period 1993-2001) is drawn from the merged Compustat and Execucomp databases, and is restricted to those firms for which data on the Governance Index is available. It is also limited to those firm-years with positive current Federal tax expense and positive (adjusted) taxable income. All specifications include year effects, firm fixed effects and the set of basic controls included in Table 2. The specifications also include interaction terms (with the dummy for better governed firms) for all the right-hand-side variables, except the firm fixed effects. The dummy for better governed firms is equal to one if the Governance Index is lower than or equal to 7 and zero otherwise. Robust standard errors that are clustered at the firm level are presented in parentheses; *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 4

Tax Avoidance, Firm Value and Governance Institutions: Tax Avoidance Robustness Checks

<i>Dependent Variable:</i>	Tobin's <i>q</i>			
	(1)	(2)	(3)	(4)
	All Firms	All Firms	All Firms	All Firms: Lag Specification
Book-Tax Gap Interacted with Dummy for Better Governed Firms	2.5173 * (1.4001)	2.3709 ** (1.1420)	2.3915 ** (1.2206)	2.3803 * (1.3099)
Deferred Tax Expense (Scaled)	0.0980 (1.7432)			
Value of Stock Option Exercises by Top 5 Executives (Scaled)			39.0326 *** (10.42)	
Lagged Book-Tax Gap Interacted with Dummy for Better Governed Firms				3.1458 (2.1407)
Basic Controls, Year and Firm Effects?	Y	Y	Y	Y
Debt Controls?	N	Y	N	N
Lagged Basic Controls?	N	N	N	Y
No. of Firms	650	685	687	649
No. of Obs.	3,286	3,650	3,658	3,414
R-Squared	0.7632	0.7455	0.7600	0.7310

Note: The dependent variable is Tobin's *q*, as defined in Section 3. The sample (over the period 1993-2001) is drawn from the merged Compustat and Execucomp databases, and is restricted to those firms for which data on the Governance Index is available. It is also limited to those firm-years with positive current Federal tax expense and positive (adjusted) taxable income. All specifications include year effects, firm fixed effects and the set of basic controls included in Table 2. The specifications also include interaction terms (with the dummy for better governed firms) for all the right-hand-side variables, except the firm fixed effects. In addition, Column 4 includes lags of these basic controls (except for the volatility measure). The debt controls are as described in the text. The dummy for better governed firms is equal to one if the Governance Index is lower than or equal to 7 and zero otherwise. Robust standard errors that are clustered at the firm level are presented in parentheses; *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 5**Tax Avoidance, Firm Value and Governance Institutions: Additional Controls**

<i>Dependent Variable:</i>	Tobin's <i>q</i>		
	(1)	(2)	(3)
	All Firms	All Firms	All Firms
Book-Tax Gap Interacted with Dummy for Better Governed Firms	2.6152 ** (1.1956)	2.2470 * (1.2117)	2.0618 * (1.2229)
Capital Expenditures (Scaled)	2.2137 *** (0.8397)		
Lagged return on assets (%)		0.0261 *** (0.0070)	
Future Sales Growth			0.4110 ** (0.1689)
Basic Controls, Year and Firm Effects?	Y	Y	Y
No. of Firms	684	687	684
No. of Obs.	3,606	3657	3576
R-Squared	0.7383	0.7392	0.7477

Note: The dependent variable is Tobin's *q*, as defined in Section 3. The sample (over the period 1993-2001) is drawn from the merged Compustat and Execucomp databases, and is restricted to those firms for which data on the Governance Index is available. It is also limited to those firm-years with positive current Federal tax expense and positive (adjusted) taxable income. All specifications include year effects, firm fixed effects and the set of basic controls included in Table 2. The specifications also include interaction terms (with the dummy for better governed firms) for all the right-hand-side variables, except the firm fixed effects. The dummy for better governed firms is equal to one if the Governance Index is lower than or equal to 7 and zero otherwise. Robust standard errors that are clustered at the firm level are presented in parentheses; *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.