

Does Tax Avoidance Facilitate Economically Significant Managerial Rent Extraction from
Shareholders of US Firms?

Bradley Scott Blaylock

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy

University of Washington

2011

Program Authorized to Offer Degree:
Foster School of Business

UMI Number: 3472080

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI 3472080

Copyright 2011 by ProQuest LLC.

All rights reserved. This edition of the work is protected against unauthorized copying under Title 17, United States Code.



ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

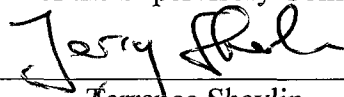
University of Washington
Graduate School

This is to certify that I have examined this copy of a doctoral dissertation by

Bradley Scott Blaylock

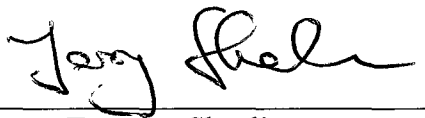
and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by the final
examining committee have been made.

Chair of the Supervisory Committee:

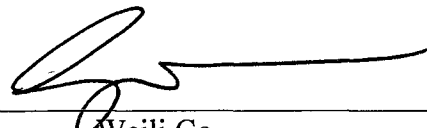


Terrence Shevlin

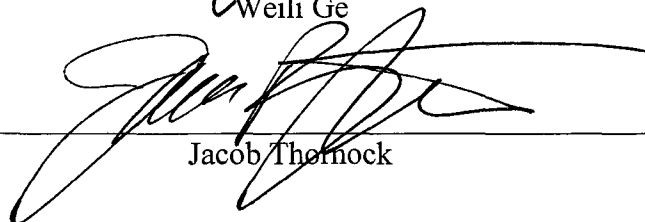
Reading Committee:



Terrence Shevlin



Weili Ge



Jacob Thornock

Date: June 9, 2011

In presenting this dissertation in partial fulfillment of the requirements for the doctoral degree at the University of Washington, I agree that the Library shall make its copies freely available for inspection. I further agree that extensive copying of the dissertation is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for copying or reproduction of this dissertation may be referred to ProQuest Information and Learning, 300 North Zeeb Road, Ann Arbor, MI 48106-1346, 1-800-521-0600, to whom the author has granted "the right to reproduce and sell (a) copies of the manuscript in microform and/or (b) printed copies of the manuscript made from microform."

Signature Buy Smith

Date June 9, 2011

University of Washington

Abstract

Does Tax Avoidance Facilitate Economically Significant Managerial Rent Extraction from Shareholders of US Firms?

Bradley Scott Blaylock

Chair of the Supervisory Committee:
Professor Terrence Shevlin
Department of Accounting

Two influential papers in the tax avoidance literature (Desai and Dharmapala 2006 and Desai et al. 2007) argue that tax avoidance can be used to facilitate managerial rent extraction from shareholders. The most direct large sample empirical evidence in support of this theory comes from Russia, which has a much different regulatory and corporate governance environment than the United States, but subsequent studies relying on this theory focus on US firms. I test for large sample evidence that tax avoidance is associated with economically significant managerial rent extraction from shareholders in the US. I am unable to provide evidence that tax avoidance is related to managerial rent extraction on average. I conclude that researchers should exercise care when making predictions that assume a relation between rent extraction and tax avoidance by carefully considering whether this theory is appropriate for the firms in their sample.

TABLE OF CONTENTS

List of Tables	ii
1. Introduction.....	1
2. Related Literature and Hypothesis Development	7
3. Empirical Proxies and Research Design	17
4. Sample Selection and Descriptive Statistics	25
5. Results.....	26
6. Supplemental Analysis.....	29
7. Conclusion	36
References.....	38
Appendix 1: Definition of Tax Avoidance Measures	54

LIST OF TABLES

Table Number	Page
1. Descriptive Statistics.....	41
2. Tax Avoidance and Future Performance	42
3. Tax Avoidance and Investment	44
4. Tax Avoidance and Payout Policy	47
5. Supplemental Analysis, Tax Avoidance and Performance in Limited Subsamples	50
6. Tax Avoidance and Compensation	52

ACKNOWLEDGEMENTS

I am grateful to my committee members Terry Shevlin (chair), Weili Ge, Richard Hartman, Ed Rice, and Jake Thornock for helpful comments and guidance. This paper has also benefited from helpful comments by Bob Bowen, Jenny Brown, Alex Edwards, Jared Jennings, Dave Kenchington, Allison Koester, Dawn Matsumoto, Sonja Rego, D Shores, Lloyd Tanlu, and Ryan Wilson and workshop participants at University of Arizona, Arizona State University, Florida State University, University of Iowa, Oklahoma State University, Oregon State University, and University of Washington. I also thank Brad Lindsey and Scott Dyreng for sharing data with me on firms' subsidiaries.

1. Introduction

I test whether high relative levels of tax avoidance among US firms are indicative of economically significant managerial rent extraction from shareholders¹ by examining the relation between tax avoidance and three proxies for managerial opportunism: low future earnings and cash flows, overinvestment and low payouts to common shareholders. These tests are motivated by the corporate governance view of tax avoidance of Desai and Dharmapala (2006) and Desai and Dharmapala (2009a), which proposes that tax avoidance facilitates managerial rent extraction. Consistent with Desai and Dharmapala (2009a), I define rent extraction as managerial opportunism.² Desai and Dharmapala (2006) propose that rent extraction and more aggressive forms of tax avoidance both require complex transaction structuring to hide the real purpose of the transaction. If managers extract rents in obvious ways, they risk having their other pay and benefits reduced and possibly losing their jobs. Similarly if firms are too obvious about structuring transactions with the sole purpose of avoiding taxes, the IRS will use the economic substance doctrine to disallow any tax benefits of the transaction and to assess interest and penalties on the disallowed tax benefits. However, the fact that both tax avoidance and rent extraction require managers to obfuscate what they are doing does not necessarily mean that rent extraction will be related to tax avoidance. What makes tax

¹ All references to rent extraction refer to managers extracting rents from shareholders.

² This definition does not assume that all rent extraction is “bad” in the sense that the cost of the rent extraction exceeds the tax benefits to shareholders from the subsidiary or transaction that facilitates the rent extraction. The most important assumption of the Desai and Dharmapala (2006) theory as it relates to my tests is that more rent extraction will take place in poorly governed firms than in well governed firms. Consequently, I interpret a more positive or a less negative relation between tax avoidance and my proxies for rent extraction among poorly governed firms relative to well governed firms as evidence that tax avoidance is associated with rent extraction in poorly governed firms.

avoidance unique as a means to facilitate managerial rent extraction is that it provides managers with a plausible explanation for entering into obscure transactions or for making investments that have no direct relation to the firm's normal operations. For example, the managers of a firm could open a subsidiary in a tax haven for the purpose of extracting rents and avoiding taxes. If the board, investors, or other stakeholders ask about the purpose of the subsidiary, the managers will answer that the subsidiary was opened for the purpose of avoiding taxes.³ If the tax benefits of the subsidiary are not overwhelmed by the managerial rent extraction that is facilitated by the subsidiary, the rent extraction has a reasonable chance of going undetected.⁴

This theory has received considerable attention in recent literature and several papers use this theory in developing some of their predictions and in interpreting at least some of their results (e.g., Hanlon and Slemrod 2009, Chen et. al., 2009, Donohoe and McGill 2010, Kim et al. 2010, Koester 2011, Dhaliwal et al. 2011, Desai and Dharmapala 2009). However, the direct evidence in support of a relation between tax avoidance and rent extraction is either anecdotal (e.g., Enron and Dynegy) or uses data from a foreign country with a different regulatory and tax environment than the US where the theory has been used in subsequent research. For example, Desai et al. (2007) provide compelling

³ In this example, simply opening the subsidiary in a tax haven does not explain what specifically the managers do to extract rents. Desai and Dharmapala (2006) and subsequent literature are generally silent on the exact mechanisms for rent extraction. The theory says only that some forms of tax avoidance lower the cost of extracting rents and that managers of poorly governed firms will extract more rents than managers of well governed firms.

⁴ The existence of tax benefits is not a necessary condition for this theory to hold. The key assumption of this theory is that managers can say they are avoiding taxes when asked about obscure transactions or investments whether or not there are actual tax benefits to the transaction or investment. This is likely easier for managers to argue if the transaction or investment in question provides actual tax benefits but as long as managers are able to convince other stakeholders of the firm that the complicated structure of the transaction or investment serves a legitimate tax avoidance purpose, it does not matter if tax benefits actually exist.

evidence that tax avoidance schemes were also used to facilitate managerial rent extraction from shareholders among Russian oil firms in the late 1990s and early 2000s. However, such evidence may not generalize to a U.S. setting where the Securities and Exchange Commission is tasked with monitoring firms' financial reports, where shareholder protections, including the threat of class action lawsuits, likely act as deterrents to managerial rent extraction and where the tax enforcement agency has greater resources. In fact, the possibility of increased IRS scrutiny for a particular tax motivated transaction or set of transactions may actually make managers more hesitant, not more aggressive, in extracting rents through tax motivated transactions. For example, Erickson, Hanlon and Maydew (2004) find that some firms pay taxes on earnings that did not exist to mitigate the possibility that the IRS would investigate and discover their financial reporting fraud. I argue that it is premature to conclude that managers use tax avoidance to facilitate rent extraction in samples of U.S. firms or to interpret evidence in light of this theory without providing more direct evidence of a link between tax avoidance and rent extraction in the US.

I empirically test for large scale evidence supporting the notion that rent extraction is associated with tax avoidance in the US. If this association exists, then I expect to find a relation between tax avoidance and three proxies for managerial opportunism: low relative future performance, overinvestment and low relative payouts to common shareholders.^{5,6} These tests are designed to consider three aspects of

⁵ In designing my tests, I focus on the research question: is tax avoidance associated with rent extraction? A related question would be: how specifically do managers use outwardly tax motivated transactions to extract rents? I do not attempt to answer the second question because the literature has not provided a clear answer to the first question. This literature is generally silent on the exact mechanisms that managers use to

managerial decision-making where managerial rent extraction could be facilitated by tax avoidance activities. If managers are using tax motivated transactions to steal from the firm or to otherwise waste firm resources for their benefit, I expect tax avoidance to be associated with low relative future performance.⁷ If managers use tax avoidance as an excuse to make investments in projects that improve their personal utility or increase their power and pay, I expect to find a positive relation between tax avoidance and overinvestment. Finally, if managers use taxes as an excuse to retain cash within the firm rather than paying it out to shareholders, for example by saying that the cash is trapped overseas and would be too expensive to bring home, to increase their job security or to waste on future investments that will enhance managers' personal utility (Jensen 1986), I expect to observe a negative relation between tax avoidance and payout ratios to common stockholders. As I argue below, all of these forms of rent extraction could be facilitated by tax avoidance. The form of my tests follows prior literature on the corporate governance view of tax avoidance, which uses governance to partition firms into groups where the tax avoidance is most likely to indicate actions by managers to benefit shareholders (strong governance), and where tax avoidance is most likely to facilitate rent

extract rents beyond arguing that more aggressive forms of tax avoidance such as tax sheltering lower the costs of rent extraction.

⁶ I use 3 proxies for tax avoidance: the shelter measure of Wilson (2009), the adjusted book-tax difference measure of Desai and Dharmapala (2006), and the discretionary permanent differences measure of Frank et al. (2009). The calculation of these variables is described in Appendix A.

⁷ I focus on future performance rather than current performance because one form of managerial rent extraction could be to artificially inflate earnings in the current period. Finding an association between tax avoidance and either high or low current performance could be indicative of rent extraction. My tests assume that any managerial waste of resources will continue to impact future performance and that artificially inflated current performance will reverse due to the nature of accrual accounting. To the extent that these assumptions are not true, it is possible that I will not detect rent extraction by looking at future performance. Consequently, I also perform untabulated analyses that use current performance rather than future performance as my dependent variable and I obtain similar results.

extraction (weak governance). I am unable to provide any consistent evidence of a relation between tax avoidance and my three proxies for rent extraction among poorly governed firms. I find that tax avoidance is generally positively associated with performance, even among poorly governed firms. I also find that tax avoidance is associated with relatively more optimal investment policy, even among poorly governed firms. Finally, I find that high tax avoiding firms distribute less cash to shareholders, but this relation is not dependent on governance.

In supplemental analysis, I also assess the power of my tests to detect a relation between tax avoidance and future performance, perform my tests on limited samples of firms with above average complexity of operations or tax haven operations where the theory is most likely to be salient, and examine the relation between tax avoidance and compensation of CEOs and CFOs. I find that my tests are sufficiently powerful to detect a roughly 50 basis point difference in return on assets between well and poorly governed firms when tax avoidance is high, which is roughly one-tenth of the standard deviation of return on assets of sample firms. This analysis does not rule out that tax avoidance is used to facilitate any rent extraction by managers of US firms, but any such rent extraction is likely too small to be a first-order concern to shareholders.⁸ I find no evidence of a stronger relation between tax avoidance and rent extraction in my high complexity or tax haven subsamples than in the full sample. Finally, I find that tax avoidance is positively associated with executive compensation among well, but not among poorly governed

⁸ This evidence is consistent with Hanlon and Slemrod (2009) who find that short-window returns around the revelation that firms entered into tax shelters is roughly -0.5% to -1.5% with limited variation between well and poorly governed firms. In contrast, Palmrose, Richardson and Scholz (2004) find that firms experience short-window returns of approximately -9% around earnings restatements.

firms. Overall, the results are not consistent with the theory that managers of US firms use tax avoidance schemes to facilitate economically significant rent extraction from shareholders.

While an inability to provide evidence consistent with a theory does not make the theory wrong, my findings suggest that caution is warranted in interpreting results in subsequent literature in light of the corporate governance view of tax avoidance without carefully considering how appropriate the theory is for the firms in the sample. Managers in a corrupt environment with fewer controls over managerial power and actions and with no separation between the tax enforcement agency and the rest of the government such as Russia are more likely to exhibit the behavior described by Desai and Dharmapala (2006) and Desai et al. (2007) than managers in a relatively investor friendly environment with much stronger controls on management's behavior such as the US.

The remainder of the paper is organized as follows: section 2 reviews related literature and presents my hypotheses, section 3 discusses empirical proxies and research design, section 4 describes sample selection, section 5 presents the results of the empirical analysis, section 6 presents my supplemental analysis and section 7 concludes.

2. Related Literature and Hypothesis Development

The corporate governance view of tax avoidance of Desai and Dharmapala (2006) comes out of a stream of literature that tries to explain cross-sectional variation in the extent to which firms avoid taxes. Some firms appear to avoid significantly more taxes than others. For example, Dyreng, Hanlon and Maydew (2008) find that even over very long periods of time (up to 10 years), some firms are able to pay less than 10% of their pre-tax income in taxes despite the fact that the statutory tax rate in the US was over 30% over their entire sample period. Most firms paid 25-35% of their pre-tax income in taxes over this period. Even within individual industries where firms are likely to be more similar and have more similar costs and benefits of avoiding taxes, they find considerable variation in the amount of taxes paid relative to pre-tax income across firms.

Most prior literature explaining cross-sectional variation in tax avoidance uses the Scholes et al. (2008) framework for predicting which firms avoid more or less tax than others. Under this framework, firms avoid taxes until the marginal costs of tax avoidance to the firm (including implicit taxes, all non-tax costs, and tax costs to other parties) are equal to the marginal benefits of tax avoidance to the firm. A major relatively unanswered question in this literature is why some firms are not more aggressive in avoiding taxes given low perceived costs of tax avoidance: for tax avoidance not to be profitable from a purely tax perspective, the tax authority first has to detect it and then has to successfully challenge the claimed tax benefits in court. The most obvious answer to this question is that a manager's job is to maximize after-tax returns to shareholders,

which is not the same as minimizing taxes. Tax avoidance is constrained by non-tax costs of avoiding taxes.

Desai and Dharmapala (2006) and Desai et al. (2007) extend the literature on non-tax costs of tax avoidance by considering tax avoidance in an agency framework and including agency costs as another potential non-tax cost that limits firms' tax avoidance. They argue that tax avoidance lowers the cost to managers of extracting rents from the firm by giving managers a plausible explanation for structuring transactions in a complicated way (i.e., to avoid detection by the IRS) and for making investments that are not directly related to firm operations. If tax avoidance lowers the cost of managerial rent extraction, shareholders may not want managers to avoid taxes as aggressively as possible. I note, however, that Desai and Dharmapala (2006) do not directly test for an association between managerial rent extraction and tax avoidance. Their primary test focuses on how managers respond to increased equity incentives. They find that managers at firms with weak governance engage in less tax avoidance when equity compensation is higher. They interpret this relation as evidence that managers in poorly governed firms engage in less tax avoidance because they have stronger incentives not to extract rents from the firm when given more equity incentives, but this interpretation assumes a relation between tax avoidance and rent extraction rather than testing for one.⁹

The most direct evidence that tax avoidance schemes were used by managers to extract rents comes from Desai et al. (2007) who examine Russian oil firms. They

⁹ In contrast, Edwards (2005) finds evidence consistent with higher equity incentives encouraging managers to engage in more tax sheltering, not less, using a sample of actual tax shelter (BOLI) firms rather than a more general proxy for tax avoidance. More recently, Seidman and Stomberg (2011) find that the negative relation between tax avoidance and equity compensation is driven by firms with relatively low taxable income who have weaker incentives to avoid taxes aggressively.

describe how the managers of Sibneft, a Russian oil company, used tax avoidance schemes to transfer resources from minority shareholders to offshore entities that were primarily owned by the managers. They also find that Russian oil firms generally had a positive stock market reaction in 5 narrow windows around the announcement of more aggressive tax enforcement by the Russian Government following the election of Vladimir Putin in 2000, despite the fact that these firms would likely pay higher future taxes resulting in lower cash flows for the firm as a whole. The authors interpret this finding as evidence that outside investors expected less rent extraction by managers/controlling shareholders due to the increased monitoring provided by the government. In fact, shortly after the crackdown took place, one of the targeted firms, Sibneft, paid a dividend to common shareholders that equaled roughly two-thirds of the entire market capitalization of the firm just prior to Putin's announcement of the crackdown on tax shelters.

While Desai et al. (2007) provides an interesting setting to consider how tax avoidance could be used to facilitate rent extraction and why shareholders may not always want managers to avoid more taxes, the findings may not generalize to a US setting where the theory has been used in subsequent research (e.g., Kim et al. 2010, Donohoe and McGill 2010, Chen et al. 2009, Dhaliwal et al. 2011, Koester 2011). The opportunities for managers to extract rents in the United States likely differ significantly from the opportunities for managers/controlling shareholders to extract rents in Russia due to differences in the regulatory environment between the US and Russia. The Securities and Exchange Commission (SEC) was established to monitor financial

reporting and in this role as monitor of firms, the SEC may also discover and reveal managerial rent extraction. Furthermore, the threat of shareholder lawsuits against managers likely deter managers from engaging in rent extraction due to the risk of being sued if their rent extraction comes to light. Finally, in recent years, the Sarbanes-Oxley Act of 2002 (SOX) requires SEC registrants to have controls in place to protect firm assets or they risk having to report a material weakness in their internal controls. These internal controls make the costs of rent extraction higher for managers. There are some well-known instances of US managers using tax avoidance schemes to facilitate rent extraction (e.g., Dynegy), particularly in the pre-SOX period, but it remains unclear whether this type of behavior is limited to a small set of anecdotes or whether this relation between tax avoidance and rent extraction generalizes to the population of US firms at large.

There have been some attempts in the literature to link tax avoidance to rent extraction by performing contemporaneous market-based tests relating tax avoidance to measures of firm value or contemporaneous returns. For example, Desai and Dharmapala (2009) test for a relation between tax avoidance and Tobin's Q. They find that tax avoidance is positively related to contemporaneous Tobin's Q in well-governed firms but not in poorly governed firms. They interpret this as evidence that managers of poorly governed firms use tax avoidance as a means to facilitate rent extraction and consequently, shareholders do not value tax avoidance in these firms. Dhaliwal et al. (2011), Lisowsky et al. (2011) and others perform similar contemporaneous market-based

tests of this theory and generally find evidence consistent with outside stakeholders discounting tax avoidance among poorly-governed firms.

However, to interpret contemporaneous market-based tests as providing evidence of rent extraction, researchers have to make one of the following assumptions. First, outsiders can easily unravel rent extraction via tax avoidance, perhaps by looking at governance characteristics, even though managers try to hide such rent extraction, thus allowing outside stakeholders to discount the equity or debt of firms where tax avoidance facilitates rent extraction. Second, managers do not try to hide their rent extraction from shareholders because they are sufficiently entrenched that they are not worried about losing their jobs or having their pay or benefits cut when their rent extraction is discovered. Consequently, outsiders are easily able to distinguish tax avoidance that facilitates rent extraction from tax avoidance that does not facilitate rent extraction.

The assumption that shareholders can easily unravel managerial rent extraction via tax-motivated transactions is inconsistent with the primary theoretical benefit to managers of using tax avoidance schemes to facilitate rent extraction: tax avoidance allows them to obfuscate the rents they are extracting. If outside stakeholders can easily unravel any such rent extraction, it is not clear what benefit the manager receives from setting up a complicated tax shelter to extract rents from the firm. Furthermore, if shareholders or other outside stakeholders assume that tax avoidance is positively associated with rent extraction in some firms (e.g., poorly governed firms), managers that want to extract rents from the firm have an incentive *not to* avoid taxes to accomplish the rent extraction because avoiding more taxes makes it more likely that their rent extraction

schemes will be discovered. If managers know that shareholders will assume that tax avoidance is indicative of rent extraction, it is not clear whether rent extraction would be associated with higher or lower tax avoidance.

The assumption that managers do not care if shareholders discover their rent extraction because the managers are sufficiently entrenched that shareholders are unable to fire them or to cut their pay or benefits in a meaningful way is consistent with the evidence in the Sibneft case described by Desai et al. (2007). Sibneft managers were also the controlling shareholders of the firm. Minority shareholders had little ability to remove the managers or to determine their pay so the managers were not as concerned about hiding their rent extraction. Consequently, when the Russian Government promised more aggressive monitoring of Sibneft and other oil firms, shareholders reacted positively by bidding up oil firms' shares. While this assumption makes sense in some settings, it also begs the question of why managers incur the costs to set up obscure tax motivated transactions to extract rents if they are not concerned whether outside stakeholders discover their rent extraction. Furthermore, some of the corporate governance proxies used in this literature (e.g., institutional ownership) are inconsistent with this assumption in the sense that they focus on external monitoring rather than managerial entrenchment. If managers are not concerned about getting caught extracting rents, external monitors that do not have legal authority to punish entrenched managers for their rent extraction (i.e., the government) should not have a meaningful impact on managerial rent extraction.

I abstract from shareholders' interpretation of tax avoidance by examining actual future operating performance and other indicators of opportunistic behavior by managers

which could indicate a relation between tax avoidance and rent extraction if it exists. If tax avoidance is associated with economically significant managerial rent extraction from shareholders on average in a large sample of US firms, I expect to find that tax avoidance is associated with low relative future performance when governance is poor. Ultimately, shareholders likely only care about managerial rent extraction if it is of a sufficient economic magnitude to impact firm performance. Failing to find that tax avoidance is associated with poor future performance on average does not rule out that managers of some firms use tax avoidance to facilitate rent extraction, but it does raise the question of whether it is appropriate to make predictions that assume that tax avoidance is used to facilitate economically significant rent extraction in a large sample US setting.

Desai and Dharmapala (2009a) provide a summary of research on the corporate governance view of taxation. They define rent extraction broadly as managerial opportunism. I follow this definition in developing my hypotheses. The rent extraction envisioned by this theory could take many forms, such as higher compensation, making potentially value destroying investments that benefit managers but hurt shareholders, or simply retaining too much cash within the firm (Jensen 1986). I do not attempt to directly measure every form of managerial opportunism in this paper because managerial opportunism could take many forms, some of which are difficult to measure. Rather, I consider broad indicators of managerial opportunism representing the three types of decisions that managers make: operations, investments, and financing.

My first hypothesis and test relate to operating performance. Any economically significant direct theft or wasting of firm resources for managers' benefit should

ultimately result in lower cash flows and earnings for the firm. Consequently, if managers among poorly governed firms use tax avoidance to facilitate rent extraction, I expect tax avoidance among poorly governed firms to be related to relatively poor future performance. This prediction leads to my first hypothesis:

H1: Tax avoidance has a less positive or more negative relation with future performance among poorly governed firms relative to well governed firms.

I view my first hypothesis and test as the most direct test of the theory that managers use tax avoidance schemes to facilitate rent extraction from shareholders because performance is a direct measure of how well managers are managing a firm. However, it is possible that managers are able to hide poor performance, or that they only use tax avoidance schemes to extract rents when performance is higher than normal because then their rent extraction is least likely to be noticed. Consequently, I also predict and test for a relation between tax avoidance and other indicators of opportunistic behavior by managers.

My second and third hypotheses are motivated by Jensen (1986). Jensen (1986) argues that managers have strong incentives to grow the size of their firms and to retain cash within the firm rather than paying it out to shareholders. Consequently high levels of investment and low payouts to shareholders relative to firm fundamentals indicate managerial opportunism. For example, managers may make large investments that increase their power and pay but that do not immediately lead to lower operating performance. Managers may also pay out too little to shareholders because they have either already wasted that cash or because keeping cash within the firm rather than paying

it out to shareholders reduces the risk of firm distress, improves managers' job security, and allows managers to avoid the scrutiny of capital markets because they have less of a need to raise capital.

Managers can use tax avoidance as an excuse to facilitate both overinvestment and lower payouts to shareholders. As argued previously, tax avoidance gives managers a plausible explanation for making investments not directly related to firm operations. Furthermore, many multinationals have significant earnings in foreign subsidiaries. To the extent that these earnings are concentrated in low tax jurisdictions, managers can argue that repatriating those earnings would be costly both in terms of the additional taxes the firm must pay to repatriate the earnings (Foley et al. 2007) and in the sense of lowering reported earnings to the extent that the earnings are designated as permanently reinvested for financial reporting purposes (Graham, Hanlon and Shevlin 2011). Consequently, managers could argue that shareholders are better served by leaving the earnings overseas.¹⁰ Formally, my second and third hypotheses are as follows:

H2: Tax avoidance in poorly governed firms is associated with more overinvestment relative to well governed firms.

H3: Tax avoidance in poorly governed firms is associated with lower payouts to shareholders relative to well governed firms.

¹⁰ Both of these explanations could be legitimate reasons for managerial behavior. I note that I am not making a prediction about the tax avoidance main effect in my regressions below. My hypothesis is a joint hypothesis that tax avoidance facilitates opportunistic behavior by managers and that managers in poorly governed firms will act more opportunistically than managers in well governed firms. The legitimate tax explanation for making investments unrelated to normal firm operations or for not paying out cash to shareholders does not differ between well- and poorly-governed firms.

Consistent with prior literature on the corporate governance view of taxation, all of my hypotheses focus on the interaction between tax avoidance and corporate governance. My tests assume that managers of poorly governed firms have greater opportunities to extract rents or lower costs of extracting rents than managers at well-governed firms. In making these predictions, I am not predicting that tax avoidance itself lowers future performance, leads to overinvestment, or causes lower payouts to shareholders. Rather I am predicting that tax avoidance lowers the costs of managerial rent extraction by providing managers with a shield for engaging in obscure transactions that facilitate using firm resources for the manager's benefit, for making obscure investments or for not paying out cash to shareholders.

3. Empirical Proxies and Research Design

There are many measures in the literature of both tax avoidance and corporate governance. In choosing empirical proxies for my tests, I do not attempt to capture all aspects of corporate governance or of tax avoidance. Rather, I focus on the level of managerial entrenchment as an important indicator of the ability of managers to extract rents from a firm.¹¹ A manager whose firing would be very costly or who has control of the board is more likely to be able to extract rents without fear of negative personal consequences for such conduct. Thus, I use the entrenchment index from Bebchuk, Cohen and Ferrell (2009) and the Gompers et al. (2003) governance index to proxy for corporate governance.

The types of complex tax-motivated transactions that could facilitate managerial opportunism are more aggressive types of tax avoidance (e.g., I would not expect investing in municipal bonds to facilitate managerial rent extraction). Consequently, I focus on measures that attempt to capture more aggressive forms of tax avoidance: the tax shelter measure developed Wilson (2009), the adjusted book-tax differences measure

¹¹ It could be argued that the ability of managers to extract rents depends largely on the extent and strength of monitoring mechanisms in place at a firm. I do not use governance proxies that focus on monitoring because measuring and proxying for such a broad construct is difficult (Armstrong et al. 2010) and not much is known about the interactions between different monitoring mechanisms. From a practical standpoint, it is hard to understand how some of the common proxies for monitoring, such as institutional ownership, would keep managers from entering into complex transactions outwardly motivated for tax avoidance reasons but that are also entered into to extract rents from the firm. Institutions and any other outsiders only receive information about the firm from the managers of the firm. If managers want to hide their rent extraction, they are unlikely to provide information to outsiders that would allow outside stakeholders to unravel their rent extraction. Consequently, I focus on managerial entrenchment as the most relevant aspect of corporate governance in my setting.

of Desai and Dharmapala (2006), and the DTAX measure from Frank et al. (2009).^{12, 13}

Each of these measures is described in more detail in appendix A.

To test my first hypothesis I use the following model:

$$\text{PERFORM}_{t+1} = \beta_0 + \beta_1 \text{WGOV}_t + \beta_2 \text{TAXAVOID}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{LOGASSETS}_t + \beta_5 \text{R\&D}_t + \beta_6 \text{AGE}_t + \sum_i \beta_i \text{YEAR}_i + \varepsilon_t \quad (1)$$

WGOV_t is an indicator variable for weak governance (firms with above average entrenchment or governance index scores). PERFORM_{t+1} is earnings before extraordinary items (or cash from operations) divided by lagged total assets (for cross-sectional comparability). These two proxies for performance have different strengths and weaknesses. Prior literature (Dechow 1994) shows that earnings on average do a better job of capturing the information that goes into stock prices than cash flows. Furthermore, operating cash flows are generally “lumpier” than earnings and earnings are likely to be a more timely measure of performance. On the other hand, cash from operations is likely subject to less managerial discretion than earnings which requires more estimation by management and opportunistic managers can more easily inflate reported earnings than cash flows through manipulating their estimates of bad debt expense, lives of long-lived

¹² The disclosure of uncertain tax benefits (UTBs) under FIN 48 would also seem to be a good proxy for tax avoidance in my setting because it measures the effect of tax positions that are most likely to be overturned if caught and litigated by the tax enforcement agency (i.e., on the more aggressive end of the tax avoidance spectrum). I do not use UTBs as a tax avoidance proxy because of the period for which the disclosures are available. UTBs are only available for reporting years 2007 and later. The considerable economic distress experienced throughout most of the world over this time period makes it difficult to make generalizable inferences about the relation between tax avoidance and performance using UTBs because of the difficulty in controlling for the macroeconomic environment and the short-time series of data available.

¹³ One limitation of these proxies for tax avoidance is that the theory of Desai and Dharmapala (2006) does not rely on the existence of actual tax benefits. Their key argument is that managers can say that they are avoiding taxes to hide rent extraction whether or not they actually receive tax benefits from the transaction. Consequently, measures of actual levels of tax avoidance may not capture the behavior described by Desai and Dharmapala (2006). For this reason, I focus on measures designed to capture more aggressive types of tax avoidance such as the Wilson (2009) shelter measure, which is not meant to be a measure of overall firm tax avoidance.

assets, et cetera. I may find not find a relatively negative relation between tax avoidance and earnings among poorly governed firms because the form of the rent extraction is artificially inflated earnings, which increase bonuses, and enhance job security and managerial reputation. Using cash from operations as my performance proxy will provide a more powerful test of hypothesis 1 if tax avoidance is used specifically to boost reported earnings.¹⁴ My primary tests use one-year ahead earnings (cash flows) as the dependent variable. In untabulated analysis I also use future 3- and 5-year averages of earnings and cash flows in case the rent extraction takes longer than one year to manifest itself (i.e., if managers can hide poor performance for a year or two but cannot hide poor performance indefinitely, a multi-year test is more likely to detect rent extraction than a one-year test) and obtain similar results. My controls are similar to those in Core et al. (1999). I add controls for size, because more mature firms likely have fewer opportunities to make profitable investments of a sufficient size to boost performance; research and development, because firms with significant amounts of R&D likely have large intangible assets not on the balance sheet; firm age, as an additional size proxy and as a control for undervaluation of older firms' asset values on the balance sheet; and industry and year fixed effects.

My primary tests do not control for current earnings (cash flows). If tax avoidance facilitates ongoing rent extraction, controlling for current earnings (cash flows) would likely remove the effect I am trying to capture. A firm that has low earnings (cash flows)

¹⁴ It is possible that tax shelters are also used to boost cash from operations and not just reported earnings. This is one reason why I use future performance rather than current performance as my dependent variable, and why I perform additional tests of rent extraction that consider investing and financing decisions in addition to operating performance.

due to managerial rent extraction will continue to perform poorly in the future as long as that rent extraction continues. Controlling for current performance would change the research question to whether or not current tax avoidance is associated with an increased amount of rent extraction in the following year relative to the current year.¹⁵

My prediction is on the interaction term between tax avoidance and governance. If managers use tax avoidance to facilitate rent extraction, I expect a less positive or more negative relation between tax avoidance and future performance among poorly governed firms than among well governed firms. I report results including governance as an indicator variable for firms with above average entrenchment index (3 or greater) or governance index (10 or greater) scores but inferences are unchanged if I use raw governance scores or if I instead define poorly governed firms to be firms in the highest quintile of the governance indices.

To test my second hypothesis, I use a two-step procedure that follows Richardson (2006). In the first stage, I predict optimal levels of investment given firm fundamentals using the following regression model:

$$\text{INVEST}_t = \beta_0 + \beta_1 \text{MB}_{t-1} + \beta_2 \text{ROA}_{t-1} + \beta_3 \text{CASH}_{t-1} + \beta_4 \text{AGE}_{t-1} + \beta_5 \text{LEV}_{t-1} + \beta_6 \text{LOGASSETS}_{t-1} + \beta_7 \text{INVEST}_{t-1} + \sum_i \beta_i \text{YEAR}_i + \sum_j \beta_j \text{IND}_j + \varepsilon_t \quad (2)$$

INVEST is defined as (capital expenditures + research and development expense + acquisitions – proceeds from sale of fixed assets - depreciation) / lagged total assets. The invest measure is designed to capture new investment. Proceeds from the sale of fixed assets are subtracted from investment so that replacing one asset with another of similar

¹⁵ In untabulated tests, I add current performance to regression equation 1. The generally positive and significant relation between tax avoidance and future performance becomes insignificant and sometimes negative but inferences for the interaction between governance and tax avoidance are unchanged.

value is not counted as new investment. Depreciation expense is subtracted from investment because it proxies for the amount of investment necessary to maintain the firm's current stock of assets. MB is market value of equity divided by book value of equity and is included to control for growth opportunities; ROA is earnings before extraordinary items divided by lagged total assets and is included to control for profitability; CASH is cash scaled by beginning of year assets to control for cash available to invest; AGE is the current fiscal year less the first year the firm appears on the Compustat database and is included to control for the firm's stage in its lifecycle; LEV is long-term debt divided by lagged total assets and is included to control for firm leverage; and LOGASSETS is the natural log of firm assets to control for size. I use lagged values of each of these variables to predict current year investments. The residual from this regression is the measure of firm over-investment (positive) or under-investment (negative) during the year. In the second stage, I regress the residual from the first stage regression on tax avoidance, governance, the interaction between tax avoidance and governance, and a control for current year free cash flow:

$$\text{INVEST}_t^e = \beta_0 + \beta_1 \text{TAXAVOID}_t + \beta_2 \text{WGOV}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{FCF}_t + \varepsilon_t$$

(3)

FCF_t is calculated as (cash from operations + research and development expense)/lagged total assets – depreciation expense/lagged total assets – the predicted value of INVEST from the first stage regression (which is already scaled by lagged total assets). Free cash flow is included in the second stage rather than in the first stage to be consistent with Richardson (2006) who argues that current year free cash flow does not change the set of

investments available to the firm and therefore should not determine optimal investment policy. Hypothesis 2 predicts a positive coefficient for β_3 , which would be consistent with tax avoidance facilitating overinvestment among poorly governed firms. Since my hypothesis focuses on tax avoidance as a means to facilitate overinvestment, I limit the firms in the second stage regression to firms with positive residuals in the first stage (i.e., firms with higher than predicted levels of investment in the current year). Although I think tax avoidance is most likely to facilitate overinvestment, it is possible that tax avoidance will be associated with more underinvestment if managers use tax avoidance schemes to steal or otherwise waste firm resources, because they may have less cash available to invest. Consequently, in untabulated tests, I also test for a relation between tax avoidance and suboptimal investment policy by including all firms in the second-stage regression and using the absolute value of residuals from the first-stage regression as my measure of suboptimal investments. Results are similar to those reported below where I focus solely on overinvestment. I also include results with one-year ahead investments as the dependent variable in case managers do not immediately overinvest but wait until the following period.

To test my third hypothesis, I use the following model:

$$\text{PAYOUT}_t = \beta_0 + \beta_1 \text{WGOV}_t + \beta_2 \text{TAXAVOID}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{RE/TE}_{t-1} + \beta_5 \text{MB}_t + \beta_6 \text{SDCFO}_t + \beta_7 \text{LOGASSETS}_t + \beta_8 \text{CFO}_t + \beta_9 \text{CASH}_{t-1} + \varepsilon_t \quad (4)$$

PAYOUT is defined as (dividend paid on common shares + repurchases of common shares – proceeds from issuance of common shares).¹⁶ I report results using two

¹⁶ I also do not focus on cash balances or excess cash because it is not clear the theory predicts high cash balances or low cash balances. If managers are extracting rents by stealing cash than a negative relation between tax avoidance and cash balances is indicative of rent extraction. If managers wish to save cash

alternative scalars for payout: earnings before extraordinary items and lagged total assets. I note that this definition makes it possible for firms to have negative payout ratios if they issue common stock during the year, but empirically I find very few of these firms in my sample. My control variables are similar to DeAngelo et al. 2006. RE/TE_{t-1} is the lagged ratio of retained earnings to total stockholders equity to control for the fact that firms pay out more dividends in later stages of their life cycle; MB is the market-to-book ratio (calculated as market capitalization divided by total stockholders' equity) to control for investment opportunities; $SDCFO_t$ is the standard deviation of cash from operations calculated over the years t-6 through t-1 to control for the need to hold larger cash balances to mitigate the costs of financial distress; $LOGASSETS_t$ is the natural log of firm assets to control for size; FCF_t is free cash flow as defined above to control for cash generated in the current year which is available to pay out to common stockholders; CASH is cash and cash equivalents divided by total assets to control for the amount of cash available to be paid out at the start of the year.

Hypothesis 3 predicts a negative coefficient for β_3 in this regression, which would indicate a less positive or more negative relation between tax avoidance and payouts to common shareholders among poorly governed firms relative to well governed firms. Similar to the performance tests, I do not control for lagged payout under the assumption that opportunistic behavior by managers will last over multiple periods. If payout is low

within the firm to enhance job security and reduce capital market scrutiny (i.e., Jensen 1986) than a positive relation between tax avoidance and cash balances is consistent with managerial opportunism. However, in either case, payouts to shareholders should be low. Consequently, I focus on payouts to shareholders where I can make a clear directional prediction about the relation between tax avoidance and payouts among poorly governed firms if managers use tax avoidance as a means to extract rents from shareholders.

because managers are behaving opportunistically, controlling for lagged payout or including firm fixed effects would likely remove the effect I am trying to capture.

Given that H2 and H3 are both motivated by the agency theory of Jensen (1986), my investment and payout tests likely do not represent independent tests. Rather, I view these tests as two alternative ways to measure a relation between tax avoidance and opportunistic behavior by managers if it exists. Because I anticipate that investment decisions are made prior to payout decisions, I control for investment opportunities in my payout tests but do not control for payouts in my investment tests.

4. Sample Selection and Descriptive Statistics

I begin my sample in 1994 to ensure consistent tax accounting across all years, which makes the tax avoidance measures more comparable from year to year. I delete observations with missing regression variables or variables needed to calculate the various measures of tax avoidance. I do not expect loss firms to have strong incentives to avoid taxes so I delete firm-year observations with negative pre-tax accounting earnings, negative current tax expense or net operating loss carryforwards.¹⁷ Some firms may have financial reporting losses because of book-tax conforming tax avoidance but interpreting “book-tax differences” for loss firms is more difficult so I remove them from the sample. These data restrictions leave me with a sample of 7,998 firm year observations for tests involving the entrenchment index and 9,064 firm-year observations for tests involving the governance index. The entrenchment index is obtained from Bebchuk’s faculty website. All other variables are obtained from Compustat. Missing observations for E-Index and G-Index are set equal to the value from the prior year.

I provide descriptive statistics for my main regression variables in table 1. My sample firms are relatively large firms with mean assets of approximately \$6 billion. My firms are also relatively profitable with mean return on assets of 8.6%. The median firm has been in the Compustat database for about 16 years.

¹⁷ Removing loss firms from my sample subjects my results to the common caveats about generalizability to loss firms. My tests can only provide evidence about the interactions between tax avoidance and rent extraction among relatively well-performing firms. I think this is a reasonable tradeoff given the weaker incentives loss firms have to avoid taxes and the difficulty in interpreting book-tax differences as tax avoidance for loss firms.

5. Results

The results of estimating equation 1 are reported in Table 2. Results for control variables are generally consistent with expectations – larger and older firms have lower relative future performance and research intensive firms have higher relative performance. I also find in general that weakly governed firms have lower relative future performance, although the coefficients are not always statistically significant. I find positive and significant coefficients on the $TAXAVOID_t$ main effect in several specifications (in particular specifications that use the Wilson 2009 or Frank et al. 2009 measure), consistent with more profitable firms engaging in more tax avoidance and/or with tax avoidance being a positive signal in general about managerial talent. I find no evidence of a negative and significant coefficient on the $GOV * TAXAVOID$ interaction term in any of my tests. These findings beg the question of why Desai and Dharmapala (2009b) find that tax avoidance among well-governed firms is positively associated with Tobin's Q, but tax avoidance among poorly governed firms is not associated with Tobin's Q if poor governance does not mitigate the generally positive relation between tax avoidance and future performance.¹⁸

Table 3 reports the results of estimating equation 2 and 3 (investment policy). The results of the first stage regression are shown in panel A. Most of the variables used to predict investment are significant in the predicted direction with the exception of the

¹⁸ One difference between my study and Desai and Dharmapala (2009b) is that they use institutional ownership to proxy for governance. It is possible that the governance and entrenchment indices do not capture the relevant aspects of governance that allow managers to use tax avoidance as a shield to extract rents and institutional ownership does capture the relevant aspects of governance. I find this explanation unlikely for reasons explained above, but I acknowledge that these measures are imperfect measures of firm governance and that my lack of significant results could be due to using proxies for governance that do not capture all relevant aspects of corporate governance.

market-to-book ratio which is insignificant. Overall explanatory power is reasonably high with R^2 around 20%.

Panel B presents the results of second-stage regression on firms with positive investment residuals from the first stage. As expected, I find a positive and significant coefficient on free cash flow in this regression, consistent with Richardson (2006). This finding is consistent with firms with higher free cash flow overinvesting more. I also find a positive and significant coefficient on the governance main effect in several specifications, consistent with poorly governed firms overinvesting more. The results on the interaction term between tax avoidance and governance are inconsistent with tax avoidance being used as an excuse to overinvest in poorly governed firms. None of the coefficient estimates on the interaction of tax avoidance and governance are significantly positive but several are significantly negative. Panel C presents the results of the second-stage regression for one-year ahead investments. The intercept is positive as expected since I focus on overinvestment. Other explanatory variables, including current year free cash flows are generally insignificant, and do not appear to be associated with one-year ahead investment policy. Overall, my findings are not consistent with hypothesis 2.

Table 4 reports the results of estimating equation 4 (payout policy) to test my third hypothesis. Estimated coefficients for control variables are all consistent with expectations and statistically significant in all cases except for LOGASSETS in one specification. I find a generally negative relation between tax avoidance and payouts to shareholders when earnings before extraordinary items are the scalar, but not when assets are the scalar. The negative relation between tax avoidance and payouts when earnings is

the scalar is consistent with high tax avoiding firms being more profitable. As with my other tests, my primary focus is on the interaction between tax avoidance and governance. My estimated coefficients are negative and significant in both tests that use the entrenchment index as the governance proxy and adjusted book-tax differences from Desai and Dharmapala (2006) as the tax avoidance proxy. All other specifications result in insignificant coefficients on the interaction between tax avoidance and governance. These findings provide only weak support for hypothesis 3. Overall, I am unable to provide any consistent evidence that managers of US firms on average use tax avoidance to facilitate rent extraction.

6. Supplemental Analysis

The tests so far are designed to provide evidence on whether tax avoidance is indicative of economically significant rent extraction among broad samples of U.S. firms. Given the lack of significant results, I perform several additional analyses. First, I consider whether the lack of significant results for my performance and investment tests is due to a lack of power. Second, I use a more limited subsample of firms that have high operations complexity (measured by the number of subsidiaries the firm has), and a more limited subsample that only includes the pre-SOX period. I perform this second set of tests to perform higher power tests of the rent extraction hypothesis. The proposed link between tax avoidance and rent extraction in Desai and Dharmapala (2006) is the ability to use tax avoidance to enter into complex transactions designed to hide the purpose of the transaction so limiting the sample to firms with more complex operations should increase the power of my tests. Similarly, tax shelters were much more prevalent in the pre-SOX period and the known anecdotes of US firms using tax motivated schemes to extract rents are also from the pre-SOX time period so focusing on this time period should increase the power of my tests. Third, I examine the relation between excess compensation and tax avoidance as an alternative proxy for rent extraction.

Power

It is possible that I do not find results consistent with my first two hypotheses because my tests are not sufficiently powerful. To assess the power of my performance tests, I first convert each tax avoidance measure to an indicator variable equal to 1 for

high tax avoiding firms¹⁹ for each tax avoidance measure, and focus on regressions that include weak governance as an indicator variable. I do this for ease of interpretation, since my primary test variable is an interaction term. I find in all cases that my standard errors are sufficiently small to detect a 0.5%-0.6% effect on performance at the 5% significance level. In other words, my tests are all sufficiently powerful to detect a roughly 50 basis point difference between future performance of well governed, high tax avoiding firms and poorly governed, high tax avoiding firms, holding other regression variables constant. I note that this is approximately one-tenth of the sample standard deviation for each of my performance measures, so lack of power does not seem to be a serious concern.

I also note that I find a generally negative relation between tax avoidance and overinvestment and this relation is more negative among poorly governed firms in most specifications, so the lack of evidence in support of hypothesis 2 is not due to large standard errors. Similarly, the estimated coefficient on the interaction between tax avoidance and governance is positive (opposite my prediction) in half of my payout tests. Overall, lack of power does not appear to be a significant contributor to my statistically insignificant results for the investment and payout tests, and the performance tests are sufficiently powerful to detect relatively small differences in performance between well and poorly governed, high tax avoiding firms.

High complexity subsample

¹⁹ My conclusions are the same whether I label firms in the top half, top tercile, or top quintile of each tax avoidance measure as high tax avoiders.

I next test for evidence that tax avoidance facilitates rent extraction among firms with higher than average complexity of operations. These tests are meant to more directly address the proposed link between tax avoidance and rent extraction: both require complexity and obfuscation.²⁰ I use the number of material subsidiaries a firm has as a proxy for the complexity of firm operations.²¹ Because larger firms may naturally have more subsidiaries, I scale firm sales by the number of firm subsidiaries to calculate a measure of sales per subsidiary. A smaller number of sales per subsidiary reflects higher complexity of operations. Consequently, I focus on a sample of below median sales per subsidiary as my high complexity subsample. I draw similar conclusions in untabulated results if I instead use a sample of firms with tax haven operations as my high complexity subsample, if I use a sample of firms in the bottom quartile of sales per subsidiary as my high complexity subsample or if I use firms with an above average raw number of subsidiaries as my high complexity subsample. Since I view the performance tests as the most direct test of a relation between tax avoidance and rent extraction, I only tabulate results for hypothesis 1. However, the results for the other tests also do not change significantly when including only high complexity firms in the sample.

The results of the performance tests for the high complexity subsample are reported in Panel A of Table 5. I continue to find no evidence that the interaction between tax avoidance and corporate governance is associated with poor relative future

²⁰ One might ask why I do not originally focus on high complexity and high opacity firms given that I argue that these subsamples provide a higher power test of the theory that tax avoidance is used to facilitate managerial rent extraction. My primary tests are meant to speak to the generalizability of the Desai and Dharmapala (2006) theory to broad samples of US firms because subsequent literature that uses this theory (e.g., Kim et al. 2010) uses similarly broad samples of US firms.

²¹ I thank Scott Dyreng and Brad Lindsay for sharing this data with me.

performance in any specification. Even among firms with above average complexity of operations, tax avoidance among poorly governed firms is not indicative of poor relative future performance.

Pre-SOX subsample

As I argue above, the Sarbanes-Oxley act likely increased the cost of rent extraction for managers of US firms. Furthermore, the most well-known cases of managers using taxes as a shield to extract rents from their firm (Enron and Dynegy) both come from this time period. The Internal Revenue Service also began a significant crackdown on tax shelter use around the same time period. Consequently, focusing on the years prior to 2003 may provide a higher power test of the rent extraction hypothesis.

The results of the performance tests in the pre-SOX period are reported in Panel B of Table 5. As with the high complexity subsample, I only tabulate results for my performance test, but the results of the investing and payout tests are similar to the results for the full sample. In general, results are similar to those for the full sample, although statistical significance declines somewhat due to the smaller sample size. I continue to find that poor governance is generally associated with poor future performance and that tax avoidance is generally associated with strong future performance, although these results are not statistically significant in some specifications. I find no evidence that tax avoidance is associated with relatively weaker performance when governance is poor compared to when governance is strong in any specification. Again, I am unable to provide evidence that tax avoidance is associated with rent extraction in this more limited subsample of observations.

Managerial compensation

Finally, I examine the relation between tax avoidance and managerial compensation. The ideal empirical measure of rent extraction would capture both benefits to managers and costs to shareholders. Some prior literature on rent extraction focuses on excess compensation to managers (e.g., Bebchuk and Fried 2003) because pay to managers in excess of economic fundamentals represents a direct loss for shareholders and a direct gain for managers. While testing for a relation between tax avoidance and excess compensation is theoretically appealing, it also has several shortcomings in my setting. First, any model of excess compensation requires a well-specified model of the economics determinants of compensation. A positive relation between tax avoidance and excess compensation could be interpreted as evidence of rent extraction or it could be interpreted as evidence that shareholders compensate managers to engage in tax avoidance that generally benefits shareholders.

The interaction between corporate governance and tax avoidance adds another difficulty in interpreting any difference in the relation between tax avoidance and compensation in well-governed versus poorly governed firms. Any difference in the relation (positive or negative) between excess compensation and tax avoidance between well and poorly governed firms could be interpreted as evidence that tax avoidance is indicative of rent extraction. One could interpret a relatively more positive relation between tax avoidance and excess compensation among poorly governed firms as evidence that managers of poorly governed firms use tax-motivated transactions to extract more pay from the firm. One could interpret a relatively more negative relation

between tax avoidance and excess compensation among poorly governed firms as evidence that Boards of Directors are concerned about managers extracting rents via tax avoidance activities when governance is poor, and consequently not providing managers with strong incentives to avoid taxes. Since it is possible, *ex ante*, to interpret a positive or a negative relation between tax avoidance and excess compensation in poorly governed firms relative to well governed firms as evidence that tax avoidance facilitates rent extraction, I do not include a hypothesis about executive compensation and tax avoidance. Nevertheless, I provide evidence on the relation between tax avoidance and executive compensation in Table 6. I include CEOs and CFOs as the primary executives with sufficient power to use tax avoidance schemes to influence pay. Consequently, I have a larger number of observations for the compensation analysis than for prior tests. However, some firms do not have executive compensation data available on the Execucomp database so the compensation tests do not have twice as many observations as prior tests.

Most of my control variables are significant in the predicted direction and overall explanatory power is similar to prior research (e.g., Core, Holthausen, and Larcker 1999). Consistent with Core et al. (1999), I find that poor governance is positively related to executive pay using the entrenchment index. Results are weaker using the governance index. This disparity is consistent with the argument of Bebchuk et al. (2009) that entrenched managers extract rents through higher compensation.

I also find a positive and significant relation between tax avoidance and compensation in five out of six specifications. This evidence is consistent with Rego and

Wilson (2010) who argue that firms compensate managers to avoid taxes. This interpretation is also consistent with my performance tests that provide evidence consistent with high tax avoiding firms being relatively more profitable than other firms. In the specifications that use the SHELTER or DDBTD measures of tax avoidance, I find a relatively less positive relation between tax avoidance and managerial compensation among poorly governed firms than among well governed firms.²² One interpretation of this result is that Boards of Directors recognize that managers of poorly governed firms may use tax motivated transactions to extract rents from the firm and consequently do not offer managers direct incentives to avoid taxes. Such an interpretation is consistent with the corporate governance view of tax avoidance. However, this interpretation relies on Boards of Directors acting in shareholders' best interests to mitigate managerial rent extraction, which is inconsistent with the assumption that these firms are poorly governed. The results of my supplemental analysis are generally consistent with my main findings in the sense that they provide little support for the theory that tax avoidance facilitates economically significant rent extraction among US firms.

²²Another approach to testing whether tax avoidance among poorly governed firms is indicative of rent extraction, consistent with Core et al. 1999, would be to first regress compensation on tax avoidance among poorly governed firms and then in the second stage to regress future performance on the proportion of compensation that is attributable to tax avoidance. A negative relation between the proportion of compensation that is attributable to tax avoidance and future performance would be consistent with tax avoidance facilitating rent extraction via excess compensation. Such an approach is not feasible for me given that I generally find no significant relation between tax avoidance and compensation when governance is poor.

7. Conclusion

The corporate governance view of tax avoidance as proposed by Desai and Dharmapala (2006) and Desai et al. (2007) has received considerable attention in recent years but little work has been done to directly correlate tax avoidance with rent extraction in poorly governed US firms where most subsequent studies apply this theory. I am unable to provide evidence that tax avoidance among poorly governed firms is more negatively associated with future performance relative to tax avoidance among well governed firms. In general, these findings are consistent with 1) tax avoidance having lower costs or higher benefits for relatively profitable firms or 2) more talented managers avoiding more taxes than less talented managers. I also find no consistent evidence that tax avoidance is associated with other indicators of managerial opportunism (overinvestment and low payouts to shareholders).

As in any empirical research, my tests are joint tests of the theory that tax avoidance is related to rent extraction among poorly governed firms and that my empirical proxies for tax avoidance, corporate governance, and rent extraction are valid measures of those constructs. My inability to find significant results in these tests could be due to poor empirical proxies rather than poor theory. Consequently, these results should be viewed as an attempt to test the broad applicability of the theory of Desai and Dharmapala (2006) to US firms using commonly used measures in the literature rather than an attempt to invalidate their theory. There are known cases in which managers used tax avoidance as an excuse to engage in transactions that allowed managers to extract rents from the firm, even in the U.S. (e.g., Dynegy and Enron), and no proxy for rent

extraction, tax avoidance or corporate governance can perfectly capture these underlying constructs. My research question is whether this anecdotal evidence generalizes to a broad set of US firms and whether the economic magnitude of any such rent extraction is sufficient to affect firm performance. I also note that all of my measures of tax avoidance and corporate governance are commonly used in the literature so my evidence can speak to the interpretation of tests that use similar sets of empirical proxies, even if the proxies themselves are not perfect measures of tax avoidance or corporate governance. In summary, my evidence provides a caution for research that assumes a relation between tax avoidance and rent extraction without considering the specific circumstances that facilitate the existence of this relation. The evidence in support of this theory is much stronger in Russia where governance mechanisms are much weaker than in the US.

References

- Armstrong, C., W. Guay, and J. Weber. 2010. The Role of Information and Financial Reporting in Corporate Governance and Contracting. Working Paper, University of Pennsylvania and MIT.
- Bebchuk, L., A. Cohen, and A. Ferrell. 2009. What Matters in Corporate Governance. *Review of Financial Studies* 22:783-827.
- Bebchuk, L., J. Fried. 2003. Executive Compensation as an Agency Problem. *Journal of Economic Perspectives* 17: 71-92.
- Blaylock, B., T. Shevlin, and R. Wilson. 2010. Tax Avoidance, Large Positive Book-tax Differences and Earnings Persistence. Working Paper, University of Washington and Iowa.
- Chen, S., X. Chen, Q Cheng, and T. Shevlin. 2009. Are Family Firms more Tax Aggressive than Non-family Firms. *Journal of Financial Economics* 95:41-61.
- Core, J., R. Holthausen, and D. Larcker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51:371-406.
- Dechow P. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics* 18(1):3-42.
- Desai, M., and D. Dharmapala. 2006. Corporate Tax Avoidance and High Powered Incentives. *Journal of Financial Economics* 79:145-179.
- Desai, M., and D. Dharmapala. 2009a. Taxation and Corporate Governance: An Economic Approach. Working Paper, Harvard University and University of Illinois.
- Desai, M., and D. Dharmapala. 2009b. Corporate Tax Avoidance and Firm Value. *The Review of Economics and Statistics* 91(3): 537-546.
- Desai, M., A. Dyck, and L. Zingales. 2007. Theft and Taxes. *Journal of Financial Economics* 84:591-623.
- Dhaliwal, D., S. Huang, W. Moser, and R. Pereira. 2011. Corporate Tax Avoidance and the Level and Valuation of Firm Cash Holdings. Working papers, University of Arizona, Arkansas and Missouri.
- Donahoe, M., and G. McGill. 2010. The Ex Ante and Ex Post Effects of Increased Book-tax Difference Disclosures on Firm Valuation. Working paper, University of Florida.

Dyreng, S., M. Hanlon and E. Maydew. 2008. Long-run Corporate Tax Avoidance. *The Accounting Review* 83:61-82.

Dyreng, S., M. Hanlon and E. Maydew. 2010. The Effects of Executives on Corporate Tax Avoidance. *The Accounting Review* forthcoming.

Edwards, C. 2005. Do employee stock options encourage corporate tax shelters? Working paper, University of North Carolina.

Erickson, M., M. Hanlon, and E. Maydew. 2004. How Much Will Firms Pay for Earnings That Do Not Exist? Evidence of Taxes Paid on Allegedly Fraudulent Earnings. *The Accounting Review* 79:387-408.

Foley, C.F., J. Hartzell, S. Titman, and G. Twite. 2007. Why do Firms Hold so much Cash? A Tax-based Explanation. *Journal of Financial Economics* 83: 579-607.

Frank, M., L. Lynch, and S. Rego. 2009. Tax Reporting Aggressiveness and its Relation to Aggressive Financial Reporting. *The Accounting Review* 84:467-496.

Graham, J., M. Hanlon, and T. Shevlin. 2011. Real Effects of Accounting Rules: Evidence from Multinational Firms Investment Location and Profit Repatriation Decisions. *Journal of Accounting Research* 49: 137-185.

Guedhami, O. and J. Pittman. 2008. The Importance of IRS Monitoring to Debt Pricing in Private Firms. *Journal of Financial Economics* 90:38-58.

Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate Governance and Equity Prices. *Quarterly Journal of Economics* 118:107-55.

Hanlon, M., and S. Heitzman. 2010. A Review of Tax Research. Working Paper, MIT and University of Oregon.

Hanlon, M., J. Hoopes, and N. Shroff. 2010. Uncle Sam is Watching: The Effect of Tax Authority Monitoring and Enforcement on Financial Reporting Quality. Working paper, MIT, and University of Michigan.

Hanlon, M., and J. Slemrod. 2009. What does Tax Aggressiveness Signal? Evidence from Stock Price Reactions to News about Tax Shelter Involvement. *Journal of Public Economics* 93:126-141.

Jensen, M., 1986. Agency Costs of Free Cash Flow, Corporate Finance and Takeovers. *The American Economic Review* 76(2):323-329.

- Jones, J. 1991. Earnings Management During Import Relief Investigations. *Journal of Accounting Research* 29:193-228.
- Kim, J., Y. Li, and L. Zhang, 2010. Corporate Tax Avoidance and Stock Price Crash Risk: Firm-level Analysis. *Journal of Financial Economics* forthcoming.
- Koester, A. 2011. Investor Valuation of Tax Avoidance through Uncertain Tax Positions. Working paper, University of Washington.
- Lisowsky, P., D. Mescall, G. Novack, and J. Pittman. 2010. The Importance of Tax Aggressiveness to Corporate Borrowing Costs. Working paper, University of Illinois.
- Palmrose, Z., V. Richardson, and S. Scholz. 2004. Determinants of Market Reactions to Restatement Announcements. *Journal of Accounting and Economics* 37: 59-89.
- Rego, S. 2003. Tax-avoidance Activities of U.S. Multinational Corporations. *Contemporary Accounting Research* 20(4):805-833.
- Rego, S. and R. Wilson. 2010. Executive Compensation, Equity Risk Incentives and Corporate Tax Aggressiveness. Working paper, University of Iowa.
- Richardson, S. 2006. Over-investment of free cash flow. *Review of Accounting Studies* 11:159-189.
- Seidman, J., and B. Stomberg. 2011. Why are Option Compensation and Tax Sheltering Negatively Related, Working paper, University of Texas.
- Shackelford, D., and T. Shevlin. 2001. Empirical tax research in accounting. *Journal of Accounting and Economics* 31:321-378.
- Wilson, R. 2009. An Examination of Corporate Tax Shelter Participants. *The Accounting Review* 84:969-999.
- Zimmerman, J. 1983. Taxes and Firm Size. *Journal of Accounting and Economics* (5): 119-149.

Table 1: Descriptive Statistics – Selected Variables (N=7,998)

	Mean	Std. Dev.	Min	25th Perc.	Median	75th Perc.	Max
Earnings _t	414.7	1258	-388.0	36.51	94.10	281.0	23931
Assets _t	6052	26201	37.18	611.7	1473	4201	797769
EIndex _t	2.569	1.344	0.000	2.000	3.000	3.000	6.000
Gindex _t	9.376	2.696	2.000	7.000	9.000	11.00	19.00
ROA _t	0.086	0.056	0.005	0.046	0.076	0.115	0.244
ROA _{t+1}	0.083	0.055	0.005	0.043	0.073	0.112	0.244
CFO _{t+1}	0.133	0.076	-0.045	0.082	0.125	0.177	0.317
INVEST _t	0.000	0.087	-0.147	-0.048	-0.019	0.022	0.381
PAYOUT _t	0.620	0.605	-0.137	0.116	0.454	0.935	2.000
SHELTER _t	0.475	0.217	0.038	0.353	0.499	0.626	0.930
DDBTD _t	-0.041	0.094	-0.189	-0.099	-0.018	0.017	0.215
DTAX _t	0.001	0.024	-0.172	-0.008	-0.002	0.007	0.105
LOGASSETS _t	7.448	1.432	3.616	6.416	7.295	8.343	13.59
RE/TE _t	0.703	0.639	-2.786	0.459	0.743	0.976	2.000
MB _t	1.682	3.778	-4.532	1.021	2.105	3.534	10.00
SDCFO _t	0.045	0.028	0.000	0.024	0.039	0.060	0.256
CASH _t	0.084	0.094	0.000	0.019	0.050	0.117	0.677
AGE _t	28.635	15.749	2.000	14.00	28.00	43.00	58.00
LEV _t	0.177	0.157	0.000	0.041	0.159	0.268	1.607
FCF _t	0.034	0.082	-0.163	-0.015	0.027	0.073	0.323

Variable Definitions:

Earnings_t = Income before extraordinary items

Assets_t = Total assets

EIndex_t = Index of restrictions on shareholder rights as defined by Bebchuk et al. (2009)

Gindex_t = Index of restrictions on shareholder rights as defined by Gompers et al. (2003)

ROA_t = Income before extraordinary items/ lag total assets

CFO_t = Cash from operations/ lag total assets

INVEST_t = (Capital expenditures + research and development expense + acquisitions – proceeds from sale of fixed assets + depreciation) / lagged total assets

PAYOUT_t = (Dividends to common stockholders + repurchases of common stock – proceeds from sales of common stock) / lagged total assets

SHELTER_t = Likelihood that a firm is currently engaged in a tax shelter (Wilson 2009)

DDBTD_t = Adjusted book-tax differences (Desai and Dharmapala 2006)

DTAX_t = Adjusted permanent book-tax differences (Frank et al. 2009)

LOGASSETS_t = Ln (total assets)

RE/TE_t = Retained earnings/total stockholder's equity

MB_t = Market capitalization/total stockholders equity

SDCFO_t = Standard deviation of cash from operations/total assets measured over the years t-6 through t-1

CASH_t = Cash and cash equivalents/lagged total assets

AGE_t = Fiscal year – first year appearing on Compustat database

LEV_t = Long-term debt/total assets

FCF_t = (cash from operations + research and development expense)/lagged total assets – depreciation expense/lagged total assets – the predicted value of INVEST_t from equation 2

All continuous regression variables are winsorized at the 1st and 99th percentiles.

Table 2: Tax Avoidance and Future Performance

Panel A: Entrenchment Index (Bebchuk et al 2009) N=7,998

$$\text{PERFORM}_{t+1} = \beta_0 + \beta_1 \text{WGOV}_t + \beta_2 \text{TAXAVOID}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{LOGASSETS}_t + \beta_5 \text{R\&D}_t + \beta_6 \text{AGE}_t + \sum_i \beta_i \text{YEAR}_i + \sum_j \beta_j \text{IND}_j + \varepsilon_t$$

(1)

Dependent Variable	ROA				CFO			
	Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value	
WGOV _t	-	-0.008	-1.420	0.079		-0.003	-0.390	0.347
SHELTER _t	?	0.025	2.860	0.004	Adj. R ²	0.031	2.880	0.004
WGOV _t *SHELTER _t	-	0.002	0.240	0.405	0.205	-0.001	-0.050	0.480
LOGASSETS _t	-	-0.004	-3.340	0.001		-0.003	-1.710	0.044
R&D _t	+	0.124	2.700	0.004		0.173	3.040	0.001
AGE _t	?	0.000	-1.890	0.059		0.000	-3.490	0.001
WGOV _t	-	-0.007	-2.610	0.005		-0.003	-0.890	0.188
DDBTD _t	?	0.001	0.070	0.942	Adj. R ²	0.011	0.540	0.588
WGOV _t *DDBTD _t	-	-0.002	-0.120	0.454	0.199	0.004	0.160	0.436
LOGASSETS _t	-	-0.003	-2.450	0.007		-0.001	-0.860	0.195
R&D _t	+	0.126	2.620	0.005		0.176	2.980	0.001
AGE _t	?	0.000	-1.700	0.090		0.000	-3.310	0.001
WGOV _t	-	-0.007	-2.480	0.013		-0.005	-1.440	0.075
DTAX _t	?	0.201	3.300	0.001	Adj. R ²	0.157	2.370	0.018
WGOV _t *DTAX _t	-	0.007	0.100	0.924	0.200	0.025	0.280	0.389
LOGASSETS _t	-	-0.003	-2.250	0.025		-0.001	-0.780	0.219
R&D _t	+	0.200	5.300	<0.001		0.258	5.290	<0.001
AGE _t	?	0.000	-1.270	0.204		0.000	-2.940	0.002

Table 2 continued: Tax Avoidance and Future Performance

Panel B: Governance Index (Gompers et al 2003) N = 9,064

Dependent Variable	ROA				CFO				
	Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value		
WGOV _t	-	-0.005	-0.820	0.206	0.000	0.050	0.479		
SHELTER _t	?	0.029	3.960	<0.001	Adj. R ²	0.035	3.870	<0.001	Adj. R ²
WGOV _t *SHELTER _t	-	0.001	0.070	0.471	0.192	-0.002	-0.150	0.442	0.217
LOGASSETS _t	-	-0.005	-4.100	<0.001		-0.003	-2.440	0.007	
R&D _t	+	0.125	2.990	0.002		0.169	3.360	<0.001	
AGE _t	?	0.000	-1.680	0.094		0.000	-3.270	0.001	
WGOV _t	-	-0.004	-1.490	0.068		0.000	0.030	0.488	
DDBTD _t	?	-0.012	-0.890	0.375	Adj. R ²	0.001	0.040	0.968	Adj. R ²
WGOV _t *DDBTD _t	-	0.012	0.570	0.286	0.187	0.019	0.700	0.242	0.213
LOGASSETS _t	-	-0.003	-3.040	0.002		-0.002	-1.450	0.073	
R&D _t	+	0.128	2.900	0.002		0.172	3.290	0.001	
AGE _t	?	0.000	-1.390	0.164		0.000	-3.020	0.003	
WGOV _t	-	-0.005	-1.820	0.035		-0.002	-0.690	0.244	
DTAX _t	?	0.223	4.260	<0.001	Adj. R ²	0.159	2.770	0.006	Adj. R ²
WGOV _t *DTAX _t	-	-0.024	-0.320	0.375	0.193	0.036	0.390	0.348	0.214
LOGASSETS _t	-	-0.003	-2.710	0.004		-0.002	-1.390	0.083	
R&D _t	+	0.204	5.590	<0.001		0.268	5.800	<0.001	
AGE _t	?	0.000	-0.900	0.369		0.000	-2.350	0.019	

43

All variables are as defined in Table 1. P-values are one-sided if a directional prediction is made, two-sided otherwise. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered by firm.

Table 3: Tax Avoidance and Investment

Panel A: First-stage Regression: $INVEST_t = \beta_0 + \beta_1 MB_{t-1} + \beta_2 ROA_{t-1} + \beta_3 CASH_{t-1} + \beta_4 AGE_{t-1} + \beta_5 LEV_{t-1} + \beta_6 LOGASSETS_{t-1} + \beta_7 INVEST_{t-1} + \sum_i \beta_i YEAR_i + \sum_j \beta_j IND_j + \varepsilon_t$ (2)

		E Index N=7,998 $R^2 = 0.209$			G Index N=9,064 $R^2 = 0.199$		
		Estimate	T-Stat	P-Value	Estimate	T-Stat	P-Value
Intercept	?	0.012	0.780	0.434	0.014	0.900	0.369
MB _{t-1}	+	-0.000	-0.230	0.412	0.000	0.610	0.271
ROA _{t-1}	+	0.237	10.810	<0.001	0.223	10.540	<0.001
CASH _{t-1}	+	0.061	4.400	<0.001	0.060	4.660	<0.001
AGE _{t-1}	-	-0.001	-8.980	<0.001	-0.001	-9.190	<0.001
LEV _{t-1}	-	-0.045	-5.920	<0.001	-0.044	-6.000	<0.001
LOGASSETS _{t-1}	+	0.006	6.600	<0.001	0.006	6.750	<0.001
INVEST _{t-1}	+	0.200	17.600	<0.001	0.194	18.170	<0.001

Table 3 continued: Tax Avoidance and Investment

Panel B: Second-stage Regression: $INVEST_t^e = \beta_0 + \beta_1 TAXAVOID_t + \beta_2 WGOV_t + \beta_3 TAXAVOID_t * WGOV_t + \beta_4 FCF_t + \varepsilon_t(3)$

Gov. Proxy	E Index				G Index				
	Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value		
Intercept	+	0.089	13.510	<0.001		0.096	16.390	<0.001	
WGOV _t	+	0.019	2.170	0.015	Adj. R ²	0.017	2.000	0.023	Adj. R ²
SHELTER _t	?	-0.031	-2.420	0.016	0.046	-0.037	-3.220	0.001	0.044
WGOV _t *SHELTER _t	+	-0.030	-1.740	0.041		-0.032	-1.920	0.028	
FCF _t	+	0.095	4.540	<0.001		0.093	4.550	<0.001	
Intercept	+	0.074	22.140	<0.001		0.079	27.090	<0.001	
WGOV _t	+	0.005	1.280	0.100	Adj. R ²	0.002	0.410	0.340	Adj. R ²
DDBTD _t	?	-0.022	-0.820	0.414	0.036	-0.027	-1.050	0.292	0.038
WGOV _t *DDBTD _t	+	-0.001	-0.030	0.488		0.021	0.550	0.291	
FCF _t	+	0.079	3.790	<0.001		0.073	3.600	<0.001	
Intercept	+	0.077	21.740	<0.001		0.081	26.630	<0.001	
WGOV _t	+	0.003	0.680	0.249	Adj. R ²	-0.001	-0.340	0.367	Adj. R ²
DTAX _t	?	-0.170	-1.400	0.162	0.040	-0.277	-2.640	0.008	0.033
WGOV _t *DTAX _t	+	-0.431	-2.610	0.005		-0.270	-1.640	0.051	
FCF _t	+	0.066	2.730	0.003		0.062	2.650	0.004	

$INVEST_t^e$ = the residual from the first-stage regression of investments on economic determinants of investment policy (Panel A)

Table 3 continued: Tax Avoidance and Investment

Panel C: One-period ahead investment: $INVEST_{t+1}^c = \beta_0 + \beta_1 TAXAVOID_t + \beta_2 WGOV_t + \beta_3 TAXAVOID_t * WGOV_t + \beta_4 FCF_t + \varepsilon_t$ (3)

Gov. Proxy	E Index N=2,329				G Index N=2,454				
	Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value		
Intercept	?	0.072	6.910	<0.001	0.079	8.74	<0.001		
WGOV _t	+	0.013	0.960	0.168	Adj. R ²	0.007	0.47	0.320	Adj. R ²
SHELTER _t	?	0.010	0.540	0.592	0.001	0.005	0.27	0.784	0.001
WGOV _t *SHELTER _t	+	-0.024	-0.960	0.168		-0.016	-0.63	0.264	
FCF _t	+	0.039	1.470	0.072		0.025	0.92	0.180	
<hr/>									
Intercept	?	0.078	20.050	<0.001		0.082	23.70	<0.001	
WGOV _t	+	0.000	-0.070	0.474	Adj. R ²	-0.001	-0.14	0.446	Adj. R ²
DDBTD _t	?	0.027	0.750	0.451	0.001	0.014	0.41	0.679	0.001
WGOV _t *DDBTD _t	+	-0.025	-0.480	0.314		0.046	0.90	0.185	
FCF _t	+	0.038	1.410	0.08		0.024	0.91	0.183	
<hr/>									
Intercept	?	0.076	19.8	<0.001		0.082	23.60	<0.001	
WGOV _t	+	0.001	0.300	0.382	Adj. R ²	-0.002	-0.52	0.302	Adj. R ²
DTAX _t	?	0.043	0.290	0.774	0.001	0.035	0.28	0.778	0.001
WGOV _t *DTAX _t	+	0.048	0.250	0.403		0.122	0.61	0.270	
FCF _t	+	0.023	0.800	0.213		0.011	0.37	0.354	

All variables are as defined in Table 1. P-values are one-sided if a directional prediction is made, two-sided otherwise. Continuous variables are winsorized at the 1st and 99th percentiles.

Table 4: Tax Avoidance and Payout Policy

$$\text{PAYOUT}_t = \beta_0 + \beta_1 \text{WGOV}_t + \beta_2 \text{TAXAVOID}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{RE/TE}_{t-1} + \beta_5 \text{MB}_{t-1} + \beta_6 \text{SDCFO}_t + \beta_7 \text{LOGASSETS}_t + \beta_8 \text{CFO}_t + \beta_9 \text{CASH}_{t-1} + \varepsilon_t \quad (4)$$

Panel A: Scalar = Earnings Before Extraordinary Items

47

		E Index N=7,998				G Index N = 9,064			
		Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value	
Intercept		0.172	2.14	0.033		0.230	2.80	0.005	
WGOV _t	?	0.080	1.20	0.230		0.057	0.84	0.401	
SHELTER _t	?	-0.318	-3.32	0.001	Adj. R ²	-0.395	-4.66	<0.001	Adj. R ²
WGOV _t *SHELTER _t	-	-0.112	-1.02	0.154	0.065	-0.056	-0.49	0.312	0.059
RE/TE _{t-1}	+	0.154	7.87	<0.001		0.154	7.62	<0.001	
MB _{t-1}	-	-0.000	-2.47	0.007		-0.000	-2.35	0.009	
SDCFO _t	-	-1.734	-4.02	<0.001		-1.330	-3.03	0.001	
LOGASSETS _t	+	0.067	7.46	<0.001		0.066	6.88	<0.001	
FCF _t	+	0.436	2.99	0.001		0.438	3.05	0.001	
CASH _{t-1}	+	0.695	4.92	<0.001		0.639	4.59	<0.001	
<hr/>									
Intercept		0.156	2.10	0.036		0.202	2.62	0.009	
WGOV _t	?	0.011	0.49	0.625		0.019	0.79	0.429	
DDBTD _t	?	-0.156	-0.98	0.326	Adj. R ²	-0.226	-1.53	0.126	Adj. R ²
WGOV _t *DDBTD _t	-	-0.547	-2.39	0.009	0.061	-0.263	-1.10	0.136	0.051
RE/TE _{t-1}	+	0.151	7.69	<0.001		0.150	7.30	<0.001	
MB _{t-1}	-	-0.000	-3.15	0.001		-0.000	-3.10	0.001	
SDCFO _t	-	-1.731	-4.01	<0.001		-1.348	-3.05	0.001	
LOGASSETS _t	+	0.048	5.84	<0.001		0.044	4.98	<0.001	
FCF _t	+	0.339	2.34	0.010		0.334	2.32	0.010	
CASH _{t-1}	+	0.549	4.02	<0.001		0.475	3.48	<0.001	

Table 4 continued: Tax Avoidance and Payout Policy

Panel A Continued:

E Index	N=7,998				G Index	N = 9,064			
		Estimate	T-Stat	P-Value			Estimate	T-Stat	P-Value
Intercept		0.167	2.25	0.012		0.207	2.66	0.008	
WGOV _t	?	0.016	0.67	0.503		0.009	0.36	0.720	
DTAX _t	?	-1.790	-3.38	<0.001	Adj. R ²	-1.987	-4.02	<0.001	Adj. R ²
WGOV _t *DTAX _t	-	-0.205	-0.29	0.387	0.062	-0.454	-0.61	0.270	0.055
RE/TE _{t-1}	+	0.148	7.19	<0.001		0.145	6.78	<0.001	
MB _{t-1}	-	-0.000	-2.98	0.002		-0.000	-2.92	0.002	
SDCFO _t	-	-1.719	-3.87	<0.001		-1.334	-2.89	0.002	
LOGASSETS _t	+	0.047	5.63	<0.001		0.045	5.06	<0.001	
FCF _t	+	0.446	2.99	0.001		0.449	3.03	0.001	
CASH _{t-1}	+	0.628	4.34	<0.001		0.552	3.87	<0.001	

Panel B: Scalar Lagged Total Assets

E Index	N=7,998				G Index	N = 9,064			
		Estimate	T-Stat	P-Value			Estimate	T-Stat	P-Value
Intercept		0.014	1.35	0.176		0.013	1.29	0.197	
WGOV _t	?	0.004	0.35	0.723		0.008	0.67	0.500	
SHELTER _t	?	0.007	0.46	0.321	Adj. R ²	0.008	0.93	0.354	Adj. R ²
WGOV _t *SHELTER _t	-	-0.009	-0.54	0.294	0.198	-0.013	-0.70	0.243	0.205
RE/TE _{t-1}	+	0.019	6.82	<0.001		0.020	7.33	<0.001	
MB _{t-1}	-	0.000	-5.01	<0.001		0.000	-4.49	<0.001	
SDCFO _t	-	-0.283	-5.16	<0.001		-0.247	-4.27	<0.001	
LOGASSETS _t	+	0.001	1.34	0.099		0.001	1.22	0.111	
FCF _t	+	0.244	8.47	<0.001		0.252	8.63	<0.001	
CASH _{t-1}	+	0.101	5.83	<0.001		0.100	5.18	<0.001	

Table 4 continued: Tax Avoidance and Payout Policy

Panel B Continued:

E Index	N=7,998				G Index	N = 9,064			
		Estimate	T-Stat	P-Value			Estimate	T-Stat	P-Value
Intercept		0.017	1.81	0.070		0.015	1.71	0.088	
WGOV _t	?	-0.003	-1.01	0.315		0.001	0.37	0.710	
DDBTD _t	?	0.019	1.09	0.275	Adj. R ²	-0.005	-0.28	0.783	Adj. R ²
WGOV _t *DDBTD _t	-	-0.050	-1.86	0.032	0.199	0.008	0.26	0.396	0.205
RE/TE _{t-1}	+	0.019	6.78	<0.001		0.020	7.36	<0.001	
MB _{t-1}	-	-0.000	-4.89	<0.001		-0.000	-4.33	<0.001	
SDCFO _t	-	-0.282	-5.18	<0.001		-0.246	-4.26	<0.001	
LOGASSETS _t	+	0.002	1.63	0.051		0.002	1.51	0.065	
FCF _t	+	0.244	8.92	<0.001		0.253	9.08	<0.001	
CASH _{t-1}	+	0.101	6.24	<0.001		0.101	5.68	<0.001	
<hr/>									
Intercept		0.016	1.81	0.071		0.015	1.69	0.092	
WGOV _t	?	-0.002	-0.67	0.504		0.000	-0.02	0.987	
DTAX _t	?	-0.047	-0.58	0.563	Adj. R ²	-0.043	-0.70	0.481	Adj. R ²
WGOV _t *DTAX _t	-	0.084	0.90	0.185	0.210	-0.016	-0.15	0.439	0.217
RE/TE _{t-1}	+	0.019	6.45	<0.001		0.020	6.93	<0.001	
MB _{t-1}	-	-0.000	-4.98	<0.001		-0.000	-4.40	<0.001	
SDCFO _t	-	-0.292	-5.37	<0.001		-0.252	-4.29	<0.001	
LOGASSETS _t	+	0.002	1.73	0.042		0.002	1.69	0.046	
FCF _t	+	0.259	8.58	<0.001		0.271	8.73	<0.001	
CASH _{t-1}	+	0.105	6.02	<0.001		0.104	5.45	<0.001	

49

All variables are as defined in Table 1. P-values are one-sided if a directional prediction is made, two-sided otherwise. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered by firm.

Table 5: Supplemental Analysis, Tax Avoidance and Performance in Limited Subsamples

Panel A: Tax Avoidance and Future Performance, High Complexity Subsample (N=3,999)

$$\text{PERFORM}_{t+1} = \beta_0 + \beta_1 \text{WGOV}_t + \beta_2 \text{TAXAVOID}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{LOGASSETS}_t + \beta_5 \text{R\&D}_t + \beta_6 \text{AGE}_t + \sum_i \beta_i \text{YEAR}_i + \sum_j \beta_j \text{IND}_j + \varepsilon_t$$

(1)

Dependent Variable	ROA		CFO		ROA		CFO				
	Estimate	T-Stat	Estimate	T-Stat	Estimate	T-Stat	Estimate	T-Stat			
WGOV _t	-	0.001	0.23	0.003	0.36	WGOV _t	-	-0.007	-2.48**	-0.004	-3.26***
SHELTER _t	?	0.022	2.81***	0.029	2.54***	DTAX _t	?	0.201	3.30***	0.212	2.27**
WGOV _t *SHELTER _t	-	-0.001	-0.07	0.000	-0.02	WGOV _t *DTAX _t	-	0.007	0.10	-0.004	-0.12
LOGASSETS _t	-	-0.005	-3.89***	-0.004	-2.09**	LOGASSETS _t	-	-0.003	-2.25**	-0.003	-2.37***
R&D _t	+	0.078	1.87**	0.115	2.27**	R&D _t	+	0.200	5.30***	0.199	5.27***
AGE _t	?	-0.000	-1.85*	-0.000	-2.74***	AGE _t	?	-0.000	-1.27	-0.000	-1.23
WGOV _t	-	0.001	0.29	0.004	0.88						
DDBTD _t	?	0.001	0.03	-0.012	-0.44						
WGOV _t *DDBTD _t	-	-0.003	-0.14	0.026	0.73						
LOGASSETS _t	-	-0.005	-3.35***	-0.003	-2.53***						
R&D _t	+	0.078	1.80**	0.125	2.60***						
AGE _t	?	-0.000	-1.78*	-0.000	-1.65*						

Table 5 continued: Supplemental Analysis, Tax Avoidance and Performance in Limited Subsamples

Panel B: Tax Avoidance and Future Performance, Pre-SOX period

$$\text{PERFORM}_{t+1} = \beta_0 + \beta_1 \text{WGOV}_t + \beta_2 \text{TAXAVOID}_t + \beta_3 \text{TAXAVOID}_t * \text{WGOV}_t + \beta_4 \text{LOGASSETS}_t + \beta_5 \text{R\&D}_t + \beta_6 \text{AGE}_t + \sum_i \beta_i \text{YEAR}_i + \sum_j \beta_j \text{IND}_j + \varepsilon_t \quad (1)$$

N=3,417

Dependent Variable

Dependent Variable	ROA		CFO			ROA		CFO			
	Estimate	T-Stat	Estimate	T-Stat		Estimate	T-Stat	Estimate	T-Stat		
WGOV _t	-	-0.010	-1.01	-0.012	-1.04	WGOV _t	-	-0.006	-1.76**	-0.008	-1.72**
SHELTER _t	?	0.042	2.99***	0.047	2.61***	DTAX _t	?	0.167	1.63	0.209	1.9*
WGOV _t *SHELTER _t	-	0.009	0.49	0.017	0.74	WGOV _t *DTAX _t	-	0.078	0.61	0.123	0.76
LOGASSETS _t	-	-0.007	-5.04***	-0.007	-3.44***	LOGASSETS _t	-	-0.004	-2.74***	-0.003	-1.65**
R&D _t	+	0.194	5.97***	0.240	5.28***	R&D _t	+	0.232	5.32***	0.280	4.59***
AGE _t	?	-0.000	-2.23**	-0.000	-2.44**	AGE _t	?	0.000	-1.07	-0.000	-1.79*
WGOV _t	-	-0.006	-1.91**	-0.005	-1.14						
DDBTD _t	?	-0.020	-1.00	-0.006	-0.23						
WGOV _t *DDBTD _t	-	-0.005	-0.17	0.019	0.46						
LOGASSETS _t	-	-0.005	-3.59***	-0.004	2.26**						
R&D _t	+	0.199	5.60***	0.247	5.18***						
AGE _t	?	-0.000	-1.62	-0.000	-1.89*						

All variables are as defined in Table 1. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels respectively. P-values are one-sided if a directional prediction is made, two-sided otherwise. Continuous variables are winsorized at the 1st and 99th percentiles.

Table 6: Tax Avoidance and Compensation

$$COMP_t = \beta_0 + \beta_1 SHELTER_t + \beta_2 WGOV_t + \beta_3 SHELTER_t * WGOV_t + \beta_4 SALES_{t-1} + \beta_5 TENURE_{t-1} + \beta_6 RET_t + \beta_7 RET_{t-1} + \beta_8 BM_{t-1} + \beta_9 FOREIGN_t + \beta_{10} ROA_t + \beta_{11} ROA_{t-1} + \sum_i \beta_i YEAR_i + \sum_j \beta_j IND_j + \varepsilon_t \quad (2)$$

Gov. Proxy		E Index	Obs. =	13,715		G Index	Obs. =	13,365	
		Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value	
SHELTER _t	+	0.162	3.15	0.001		0.227	4.52	<0.001	
WGOV _t	+	0.114	3.05	0.002		0.136	3.56	<0.001	
SHELTER _t *WGOV _t	?	-0.119	-1.70	0.090		-0.247	-3.47	<0.001	
SALES _{t-1}	+	0.437	71.51	<0.001		0.441	70.81	<0.001	
TENURE _t	+	0.103	14.60	<0.001	Adj. R ²	0.103	14.47	<0.001	Adj. R ²
RET _t	+	0.147	6.78	<0.001	0.439	0.150	6.87	<0.001	0.427
RET _{t-1}	+	0.143	6.81	<0.001		0.131	6.13	<0.001	
BM _{t-1}	-	-0.358	-11.13	<0.001		-0.328	-10.05	<0.001	
FOREIGN _t	+	0.142	7.12	<0.001		0.141	6.94	<0.001	
ROA _t	+	1.099	6.73	<0.001		1.136	6.85	<0.001	
ROAt-1	-	-0.228	-1.54	0.123		-0.234	-1.55	0.061	
DDBTD _t	+	0.261	2.25	0.001		0.243	2.25	0.006	
WGOV _t	+	0.040	2.31	0.021		0.004	0.20	0.838	
DDBTD _t *WGOV _t	?	-0.390	-2.43	0.015		-0.280	-1.70	0.089	
SALES _{t-1}	+	0.441	73.98	<0.001		0.444	73.24	<0.001	
TENURE _t	+	0.103	14.56	<0.001	Adj. R ²	0.103	14.39	<0.001	Adj. R ²
RET _t	+	0.146	6.77	<0.001	0.439	0.149	6.79	<0.001	0.442
RET _{t-1}	+	0.143	6.80	<0.001		0.129	6.03	<0.001	
BM _{t-1}	-	-0.357	-11.09	<0.001		-0.331	-10.14	<0.001	
FOREIGN _t	+	0.162	8.30	<0.001		0.164	8.31	<0.001	
ROA _t	+	1.165	7.24	<0.001		1.194	7.31	<0.001	
ROAt-1	-	-0.263	-1.78	0.075		-0.271	-1.79	0.073	

Table 6 continued: Tax Avoidance and Compensation

Gov. Proxy	E Index			Obs. = 13,715	G Index			Obs. = 13,365
	Estimate	T-Stat	P-Value		Estimate	T-Stat	P-Value	
DTAX _t	+	0.804	1.32	0.094	-0.177	-0.31	0.622	
WGOV _t	+	0.061	3.46	<0.001	0.001	0.05	0.480	
DTAX _t * WGOV _t	?	-0.112	-0.15	0.885	1.628	2.13	0.033	
SALES _{t-1}	+	0.451	68.15	<0.001	0.455	67.54	<0.001	
TENURE _t	+	0.119	15.08	<0.001	0.120	15.08	<0.001	Adj. R ²
RET _t	+	0.165	6.64	<0.001	0.172	6.82	<0.001	0.438
RET _{t-1}	+	0.123	5.11	<0.001	0.116	4.77	<0.001	
BM _{t-1}	-	-0.352	-9.33	<0.001	-0.325	-8.55	<0.001	
FOREIGN _t	+	0.172	7.79	<0.001	0.170	7.60	<0.001	
ROA _t	+	1.321	6.53	<0.001	1.358	6.64	<0.001	
ROAt-1	-	-0.160	-0.87	0.193	-0.208	-1.11	0.133	

3 FOREIGN_t = 1 for firms with foreign operations, zero otherwise.

All other variables are as defined in Table 1. P-values are one-sided if a directional prediction is made, two-sided otherwise. Continuous variables are winsorized at the 1st and 99th percentiles.

Appendix 1: Definition of Tax Avoidance Measures

1) SHELTER: (Wilson 2009) is the estimated likelihood that a firm is currently engaged in a tax shelter. It is calculated as follows:

$$\text{SHELTER} = e^z / (1 + e^z)$$

$$z = -0.67 + 11.11 * (\text{Pre-tax income}_t - \text{Current tax expense}_t / .35 - \Delta \text{NOL}_t) - 0.32 * (\text{Long-term Debt}_t / \text{Assets}_t) + 0.22 * \text{Log}(\text{Assets}_t) + 0.48 * (\text{Pre-tax income}_t / \text{assets}_{t-1}) + 0.55 * \text{Foreign Ops. Indicator}_t - 0.81 * (\text{Research and development expense}_t / \text{assets}_{t-1})$$

2) DDBTD: (Desai and Dharmapala 2006) is a measure of book-tax differences adjusted for earnings management. It is measured as the residual from the following regression:

$$\text{MPBTD} = \beta_0 + \beta_1 * \text{Accruals} + \text{Firm Fixed Effects} + \varepsilon$$

$$\text{MPBTD} = (\text{US pretax income} - (\text{US income tax} - \text{US deferred tax}) / .35 - \text{state income tax} - \text{Other tax}) / \text{assets}_{t-1} - \text{equity in earnings} / \text{assets}_{t-1}$$

$$\text{Accruals} = (\text{Earnings before extraordinary items} - \text{cash from operations}) / \text{assets}_{t-1}$$

3) DTAX: (Frank et al. 2009) is a measure of discretionary non-temporary book-tax differences. It is measured as the residual from the following regression performed by 2-digit SIC industry and year:

$$\text{PERMDIF}_t = \beta_0 + \beta_1 \text{INTAN}_t + \beta_2 \text{MININT}_t + \beta_3 \text{STATETAX}_t + \beta_4 \Delta \text{NOL}_t + \beta_5 \text{PERMDIF}_{t-1} + \beta_6 \text{EQEARN} + \varepsilon$$

$$\text{PERMDIF}_t = (\text{Pre-tax income}_t - \text{current tax expense}_t / .35 - \text{deferred tax expense}_t / .35) / \text{assets}_{t-1}$$

$$\text{INTAN}_t = \text{Intangible assets}_t / \text{assets}_{t-1}$$

$$\text{MININT}_t = \text{Minority interest income}_t / \text{assets}_{t-1}$$

$$\text{STATETAX}_t = (\text{State income tax}_t - \text{deferred state income tax}_t) / \text{assets}_{t-1}$$

$$\Delta \text{NOL}_t = (\text{Net operating loss}_t - \text{net operating loss}_{t-1}) / \text{assets}_{t-1}$$

DDBTD and DTAX are winsorized at the 1st and 99th percentiles to reduce the effects of outliers on regression coefficients. I do not winsorize SHELTER because it is already bound between 0 and 1.

Vita

Bradley Blaylock was born and grew up in Colorado. He is interested in corporate taxation and capital markets research. He received a Bachelor of Science degree in Accounting and a Masters of Accountancy degree from Brigham Young University in 2006. In 2011, he received Master of Science and Doctor of Philosophy degrees in Business Administration from the University of Washington.