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ORIGINAL PAPER

The Impact of Corporate Tax Avoidance on Board of Directors and CEO Reputation

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Abstract
This study examines the impact of corporate tax avoidance on board of directors and chief executive officer (CEO) reputation. Our regression results show that when firms engage in tax avoidance, both directors and CEOs, on average, are rewarded by improvements in their reputations as proxied by an increased number of outside board seats. In particular, both independent directors and non-CEO executive directors undergo positive changes in reputation. We also find that CEOs of tax-aggressive firms experience enhanced reputations by gaining extra board seats. Our main regression results hold based on additional analyses. Overall, this study provides important empirical evidence confirming an association between tax avoidance and the individual reputations of directors and CEOs.

Keywords Tax avoidance · Corporate reputation · Board of directors · Chief executive officer (CEO)

JEL Classification H25 · H26 · M14

Introduction

"Starbucks suffers reputation slump over tax avoidance" trumpets the headline in *The Week* in October 2012. This is one example of many recent tax shaming campaigns across the globe including in the United States, the United Kingdom, and Australia (Barford and Holt 2013; Doran 2015; Perez-Truglia and Troiano 2015). These campaigns target and publicize firms for allegedly avoiding tax. They call for increased tax transparency and disclosure to expose aggressive tax practices, and pressure firms to cease their tax-avoidance behaviors out of reputational concerns. However, there are many who question the effectiveness of such campaigns in increasing corporate tax collections (e.g., Barford and Holt 2013; Harford 2016) as these campaigns essentially rely on the disclosure of tax avoidance as having a negative effect on a firm's reputation. In contrast, others view tax avoidance as a positive corporate pursuit which maximizes shareholder wealth that may improve a firm's reputation (Crocker and Slemrod 2005; Khurana and Moser 2013; TJN 2013a, b). Therefore, it is apparent that there is significant tension concerning the reputational effects of tax avoidance on firms which is yet to be explored theoretically and fully investigated empirically. Hence, the purpose of this study is to resolve this tension by examining the association between tax avoidance and the reputations of corporate boards of directors and chief executive officers (CEO).

Irrespective of whether corporate tax avoidance is considered an effective strategy that increases firm cash flows or a social irresponsibility that robs society of tax revenue, it is expected to affect the reputations of those involved (Graham et al. 2014). There are inconsistent views in the prior literature about the precise nature of these reputational consequences. Gallemore et al. (2014) found no association between tax sheltering and various reputational

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consequences, but qualify their results by indicating that such effects may nonetheless exist, but are simply undiscovered by the specific sample construction and statistical tests used in their study. A more recent study by Chyz and Gaertner (2018) stated that "to date, empirical evidence supporting significant reputational effects at both the firm and executive level is scant" (p. 106). One possible reason is that the reputational consequences of tax avoidance are multi-dimensional in nature and are thus difficult to observe and define (Graham et al. 2014). We respond to the calls for future research by Gallemore et al. (2014) and Chyz and Gaertner (2018) by examining the reputational consequences of tax avoidance on corporate directors and executives, which can possibly be either positive or negative.

Prior research in the literature suggests there may be a link between tax avoidance and corporate reputation (e.g., Hanlon and Slemrod 2009; Graham et al. 2014). Gallemore et al. (2014) was the first study to empirically examine this relationship, however, they found no association between tax sheltering (which constitutes an extreme case of tax avoidance) and any reputational effects exerted by shareholders, public media, customers, or tax authorities. They concede that such reputational effects may indeed exist but remain undetected. Lanis and Richardson (2016) indirectly linked tax avoidance and reputation, as proxied by corporate social responsibility (CSR), through the presence of independent directors. However, they did not directly examine the reputational effects of tax avoidance on individual directors, calling for future research into such effects on board reputation. Chyz and Gaertner (2018) found a significant association between high industry-benchmarked tax avoidance and forced CEO turnover. They also document that CEOs are more likely to be terminated when their firms pay relatively high taxes than industry peers which the authors find "opposite to the commonly held reputational cost view of tax avoidance advanced in the literature (p. 105)." Another study by Austin and Wilson (2017) observed that firms with valuable brands engage in less tax avoidance, suggesting there is a firm reputation effect of tax avoidance.

Given the multifaceted nature of the reputational consequences of tax avoidance (e.g., Hanlon and Heitzman 2010), this study adopts a different approach by focusing on the "individual reputational consequences" for both the board of directors and CEOs. Prior studies find that boards and CEOs are the most influential personnel in directing corporate tax policies (e.g., Crocker and Slemrod 2005; Armstrong et al. 2012) as they are responsible for shaping, approving, and monitoring a firm's tax planning strategies (Higgins et al. 2015), setting the "tone at the top" about tax activities (Dyreng et al. 2010), and appointing and setting the compensation incentives for tax directors (Armstrong et al. 2012).[1] In particular, Dyreng et al. (2010) found that CEOs have a greater impact on tax avoidance than CFOs. Brown (2011) showed that tax sheltering practices can spread from one firm to another via the presence of interlocked directors. Lanis and Richardson (2011) find that firms with a higher board independence have lower levels of tax avoidance.

The combined evidence from these studies show that boards and CEOs have overall responsibility for a firm's tax strategies such as determining its level of tax avoidance, so we observe the reputational consequences of tax avoidance for both the board of directors and CEOs. Our approach is both theoretically sound and empirically practicable as there is publicly available information on the number of outside board seats that are held by these individuals which serve as proxies for reputation.

We choose the number of outside directorships held by directors and executives as our empirical proxy for reputation for several reasons. First, it is the most widely used proxy for personal reputation in the literature (e.g., Wu 2004; Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007; Bugeja et al. 2009; Brochet and Srinivasan 2014; Jiang et al. 2016; Levit and Malenko 2016; Lel and Miller 2017). Second, there are competing views in the literature as to whether tax avoidance constitutes a beneficial corporate strategy that justifies reputational rewards or a form of corporate social misconduct that warrants penalties. Hence, we require an empirical proxy that can represent both enhancements and deteriorations of director and executive reputation which can both be captured by observing the number of outside directorships (e.g., Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007; Jiang et al. 2016; Levit and Malenko 2016). Our study is the first to employ this "two-directional" measure of reputation in the context of tax aggressiveness to provide empirical evidence on the impact of corporate tax avoidance on boards of directors and CEOs.

Following Hanlon and Heitzman (2010), this study defines tax avoidance as a broad continuum of activities from benign behaviors envisioned by tax policies at one end to outright tax evasion and fraud at the other. This definition of tax avoidance covers a spectrum of tax planning activities with outcomes ranging from certain to uncertain tax positions. The more uncertain is a firm's tax position, the more aggressive and risky the behavior and the further

[1] The term "tax director" is adopted from Armstrong et al. (2012) and refers to the executive or manager responsible for overseeing a firm's tax function (Armstrong et al. 2012). It does not necessarily refer to a member of the board of directors, although this may be the case in some cases. Finally, a tax director is responsible for one of the firm's largest outflows of cash and one of the largest expenses on the income statement, and provides expert advice to senior executives including strategic advice at the board level (Armstrong et al. 2012).

it sits along the tax-avoidance continuum (e.g., Hanlon and Heitzman 2010). Our definition of tax avoidance is broader than that used by Gallemore et al. (2014), which is limited to known tax shelter activity. We use three measures of tax avoidance in this study including tax sheltering, unrecognized tax benefits, and effective tax rates (ETRs) to capture this continuum of activities and fully explore the potentially positive or negative reputational effects associated with each level of tax avoidance.

Employing a sample of 1450 publicly listed U.S. firms over the 2000–2011 period (7431 firm-year observations), our regression results indicate that when firms participate in tax avoidance, both directors and CEOs, on average, are rewarded by improvements in their reputations as proxied by an increased number of outside board seats. Specifically, both independent directors and non-CEO executive directors undergo positive changes in reputation. We also find that CEOs of tax-aggressive firms experience enhanced reputations by gaining more board seats. Our main regression results hold based on auxiliary analyses.

This study makes several important contributions. First, it sheds light on whether tax avoidance either enhances or damages corporate reputation by using a novel empirical approach which captures both positive and negative reputational changes associated with tax avoidance. Building on prior studies that report mixed evidence on the reputational impacts of tax avoidance (e.g., Gallemore et al. 2014; Austin and Wilson 2015; Chyz and Gaertner 2018), we provide evidence which shows that tax avoidance is associated with improved board and CEO reputation. Second, this study uses several well-known tax-avoidance proxies to capture a broad spectrum of tax-avoidance practices, and finds that they have different impacts on independent director, CEO, and executive director reputations. Specifically, independent director reputation is positively associated with both aggressive and less aggressive forms of tax avoidance in contrast to executive directors who undergo improvements in reputation only when their firms engage in more aggressive forms of tax avoidance, while improvements in CEO reputation are only linked to less aggressive forms of tax avoidance. Third, we also contribute to the literature by showing that tax avoidance, like many other forms of corporate (mis)conduct, does have significant reputational consequences. However, unlike securities misconduct that harms shareholders' interests, tax avoidance leads to positive reputational impacts in line with the shareholder-centric view that minimizing tax payments increases firm value. Finally, our results provide several important insights for policymakers, regulators, and tax authorities who seek to understand the incentives and disincentives that either drive or deter corporate tax avoidance.

The remainder of this paper is organized as follows. "Theory and Hypotheses Development" reviews the relevant literature and develops our hypotheses. "Research Design" describes the research design, and "Empirical Results" reports and analyzes the empirical results. Finally, "Conclusion" concludes the paper.

Theory and Hypotheses Development

Tax Avoidance: The Pursuit of Cash Flows or a Social Irresponsibility?

Tim Cook, the CEO of Apple Inc, recently stated in the context of the European Commission's case against Apple Operations International that paying or avoiding tax is "not a matter of being patriotic or not patriotic. It doesn't go that the more you pay, the more patriotic you are" (McGregor 2016). This statement is fairly consistent with agency theory where management should develop a tax policy that maximizes shareholder wealth, although it is unclear at which point along the tax-avoidance continuum the maximization of shareholder wealth takes place (Crocker and Slemrod 2005). This view argues that tax represents a cost of operating a firm and thus the marginal benefits of a more tax-avoidant strategy include tax savings for shareholders (Freedman 2003; Avi-Yonah 2008; Hanlon and Slemrod 2009). In this shareholder-centric view, more tax avoidance is an acceptable management pursuit, absent any moral-ethical considerations, as it is expected to increase shareholder wealth (Crocker and Slemrod 2005; Khurana and Moser 2013; TJN 2013a, b). The response to a *New York Times* article in 2012 which claimed that Apple paid little to no taxes is consistent with that view. A YouGov BrandIndex report at the time stated that Apple's public reputation actually improved, suggesting that it was "virtually Teflon" to tax-related stigma (Elmer-DeWitt 2012; Martzilli 2012).

A contradictory view is that corporate tax payments constitute an act of social responsibility. Prior research has established a link between CSR and tax avoidance, finding that more socially responsible firms are less tax avoidant (e.g., Watson 2011; Huseynov and Klamm 2012; Lanis and Richardson 2012; Hoi et al. 2013). More directly, Freedman (2003), Slemrod (2004), Williams (2007), Freise et al. (2008), and Landolf and Symons (2008) all claimed that there is sufficient interest from the public for the payment of corporate taxes to be considered as a payment to the community generally. Taxes are paid to governments to ensure the financing of public goods, and firms not paying their "fair share" produce a significant, and potentially irrecoverable loss to society. This, in turn, produces reputational damage to a firm (Freedman 2003; Slemrod 2004; Williams 2007; Freise et al. 2008; Landolf and Symons 2008; Schön 2008).

In short, these competing theories produce significant tension about the potential impact of tax avoidance on director, corporate, and executive reputations. On the one

hand, directors and executive officers who guide and/or permit firms to avoid taxes may be regarded as acting in the shareholders' best interests, maximizing firm value and cash flows, which should positively enhance their reputations. On the other hand, acting contrary to societal expectations through tax avoidance may be regarded as unscrupulous conduct similar to securities fraud, thus negatively impairing the reputation of the directors and executives involved. Overall, this is likely to depend on the emphasis which is placed on the perceived benefits versus the costs of tax-avoidance activities. Therefore, it remains an empirical question which we seek to explore in this study.

Corporate Tax Avoidance Defined

Defining corporate tax avoidance is fundamental to determining the set of corporate activities and behaviors that should be investigated, and the choice of methodology in measuring their reputational effects. In fact, the definition and measurement of tax avoidance has been a major concern in the literature (e.g., Hanlon and Heitzman 2010; Lisowsky et al. 2013). Hanlon and Heitzman (2010) claimed that "not all measures are appropriate to all research questions" (p. 139). Lisowsky et al. (2013) used the term "tax avoidance" to cover all activities which reduce a firm's corporate tax from the level of the null hypothesis.[2] Given that our research question includes both positive and negative reputational consequences of a firm's tax policy, we follow their approach and define tax avoidance in the broadest sense of the term to encompass a spectrum of what may be considered acceptable and unacceptable tax behaviors. This range of activities forms a tax-avoidance continuum from ordinary tax-minimizing policies well within the boundaries of the law to the more contentious types of tax strategies that give rise to uncertain tax positions. In this framework, "tax aggressiveness" is conceptualized as a subset of tax avoidance "in which the underlying positions likely have weak legal support" (Lisowsky et al. 2013, p. 589). More importantly, this view of tax avoidance lends itself to measurement using several empirical proxies which, in turn, is consistent with anecdotal evidence of how stakeholders assess a firm's tax strategy (Graham et al. 2014). The term "tax sheltering" is categorized as the most extreme subset of tax avoidance. Prior studies that solely concentrate on that part of the continuum limit the *a priori* discussion of corporate tax avoidance and reputation, and the scope of empirical investigation.

[2] The condition of the null hypothesis is where there is no tax planning, tax aggressiveness, and tax avoidance, and the like. In particular, it is the point where the tax response of a firm would be a "random walk."

Reputational Consequences of Firm Policies

Corporate policies can affect the reputations of individual directors (Srinivasan 2005; Fich and Shivdasani 2007) and executive officers (Collins et al. 2008, 2009; Karpoff et al. 2008; Humphery-Jenner 2012; Agrawal and Cooper 2017). Reputational consequences are a key concern for executive directors, independent directors, and CEOs (Levit and Malenko 2016). Levit and Malenko (2016) claimed that directors seek to develop their reputation to gain more board seats and thereby obtain prestige, power, compensation, and access to valuable networks. The most widely used proxy for executive and director reputation is the number of outside directorships held by an individual (see Wu 2004; Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007; Bugeja et al. 2009; Brochet and Srinivasan 2014; Jiang et al. 2016; Levit and Malenko 2016; Lel and Miller 2017).

Changes in individual reputation can serve as penalties as well as rewards for individual directors and executives. Corporate wrongdoings such as securities fraud are associated with declines in director and executive reputation as proxied by net losses of outside board seats (e.g., Wu 2004; Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007; Brochet and Srinivasan 2014). This loss of board seats occurs as directors with damaged reputations are voted out during re-elections at shareholder meetings (Brochet and Srinivasan 2014). Firms sharing directors with fraud-tainted firms have particularly strong incentives to remove these directors from their boards to avoid spillover reputational damage (Fich and Shivdasani 2007). On the other hand, directors who are perceived to be "shareholder-friendly" or those from prestigious firms experience net gains of outside directorships (e.g., Jiang et al. 2016; Levit and Malenko 2016; Lel and Miller 2017).

Extensive prior evidence suggests that directors and executives with superior reputation gain more outside directorships (e.g., Chang and Sun 2016; Jiang et al. 2016; Lel and Miller 2017), whereas those with declining reputation experience a loss of board seats (e.g., Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007). One recent anecdotal example to illustrate this mechanism involves the former CEO of Volkswagen, Ferdinand Piech, who lost his board seat at Porsche SE following VW's emission testing scandal (Schwartz and Schuetze 2017).

Loss of outside board seats represents one of the many forms of penalty for executive officers. Prior studies also show that turnovers (e.g., Karpoff et al. 2008; Collins et al. 2009; Humphery-Jenner 2012) and impaired career opportunities (e.g., Desai et al. 2006; Collins et al. 2009; Correia and Klausner 2012) are personal consequences following corporate misconduct. In the context of tax avoidance, Gallemore et al. (2014) found no evidence of increased CEO turnover associated with tax sheltering, while Chyz and Gaertner

(2018) observed that firms with high tax avoidance experience a greater likelihood of forced CEO turnovers. However, turnover itself is insufficient to penalize CEOs unless it is coupled with impaired subsequent career prospects (Fama 1980; Desai et al. 2006). We posit that turnover and reemployment prospects provide a limited and thus problematic proxy for reputation for the purpose of our study for three reasons. First, executive turnover is an extreme form of penalty that is only invoked in exceptional circumstances, while we examine a wide spectrum of tax behaviors ranging from legitimate tax-minimizing strategies to avoidance (e.g., tax sheltering). We thus require a proxy able to capture varying degrees of changes in reputation. Second, given the lack of consensus in the literature as to whether tax avoidance is a desired corporate strategy or an instance of corporate social misconduct, we do not specify the direction of the change in reputation associated with tax avoidance and thus require a two-directional proxy that captures both improvements and declines in reputation. Turnover is a one-directional measure that only captures penalties but not rewards. Third, post-turnover reemployment prospects are only relevant to CEOs and executives, but not to independent directors (Desai et al. 2006; Collins et al. 2009; Correia and Klausner 2012). For these important reasons, we use the number of outside directorships to capture both favorable and detrimental changes in director and executive reputation in this study.

Prior research in the fraud literature uses a dummy variable to capture securities fraud allegations against a firm (e.g., Agrawal et al. 1999; Desai et al. 2006; Helland 2006; Fich and Shivdasani 2007; Humphery-Jenner 2012; Agrawal and Cooper 2017).[3] Helland (2006) used a dummy variable that captures fraud allegations by the Securities and Exchange Commission (SEC) to predict the net changes in the number of directorships held by a director as a proxy for reputation. Agrawal et al. (1999) employed a dummy variable that captures fraud and corporate crime reports in the *Wall Street Journal*. Humphery-Jenner (2012) used a dummy variable to denote securities lawsuits filed against a firm in predicting executive turnover. Other studies also adopt a similar approach by computing a dummy variable to capture accounting misstatements as a proxy for potential securities misconduct and to predict changes in executive reputation (e.g., Desai et al. 2006; Agrawal and Cooper 2017). Overall, in the literature, investigating the reputational effects of securities misconduct, financial fraud or misconduct, is generally captured as a dummy variable. Consistent with this research, we posit that, like allegations of securities misconduct, high levels of tax avoidance are likely to trigger changes in the individual reputations of directors and CEOs in firms.

[3] Securities fraud is typically defined as intentional misstatements of financial information on which information users rely to their detriment (see Hennes et al. 2008, p. 1488; Karpoff et al. 2017, p. 150). Like tax avoidance, there are various empirical measures of fraud in the literature that involve different levels of severity of conduct. Agrawal et al. (1999) uses a quite severe measure of fraud by assigning a value of one to their dummy variable if there is a fraud or crime related to a news article about the firm in the *Wall Street Journal* and zero otherwise. Helland (2006) and Humphery-Jenner (2012) both employ a more commonly used measure of alleged fraud by computing a dummy variable that equals one if any securities class action is filed against the firm in a given year and zero otherwise. Agrawal and Cooper (2017) and Desai et al. (2006) both use a broad definition of fraud that captures activities of the least severe nature and assign a value of one if the firm has issued any accounting misstatement and zero otherwise. Consequently, all of these studies use dummy variables to capture fraud that is defined at various levels of severity.

Reputational Consequences of Tax Avoidance

In terms of the reputational consequences of tax avoidance, the former Internal Revenue Service (IRS) Commissioner Doug Shulman stated that aggressive tax behavior:

> Can present a financial and restatement risk, and sometimes when the cases are high profile, a significant risk to corporate reputations. In today's business climate, the general public has little tolerance for overly aggressive tax planning (IRS 2009, p. 1).

To establish the level of public concern over corporate tax avoidance, the Citizens for Tax Justice (CTJ) reported survey results in 2011 where 67% of respondents in 2004, and 73% in 2009 believed that firms pay "too little" in corporate taxes (CTJ 2011). This was as per Gallup Poll respondents and called into question corporate reputations. While other research shows an *a priori* link between tax avoidance and reputation (e.g., Williams 2007; Avi-Yonah 2008; Landolf and Symons 2008), some studies have explored the link between tax avoidance and public attention. Allen et al. (2015) found that firms with higher analyst coverage are less likely to engage in tax avoidance. They observed that the association is less evident when firms have greater reputational concerns suggesting that reputational concerns serve as a substitute for analyst coverage in reducing tax avoidance. In contrast, Lee (2015) found that firms exposed to media coverage of tax avoidance are less likely to make tax-related disclosures, but the quality and level of tax-related disclosures are only analyzed instead of tax-avoidance practices. To date however, there is little research on the executive labor market impacts of tax avoidance. While Gallemore et al. (2014) found no significant increase in CEO turnover associated with tax sheltering, Chyz and Gaertner (2018) examined forced CEO turnovers, and showed that paying higher or lower taxes than the industry- and size-benchmarks is associated with a greater likelihood of forced turnover for CEOs. Austin and Wilson (2017) found an association between tax avoidance and reputation as proxied by valuable consumer brands.

Lanis and Richardson (2016) is another study which sheds some light (albeit indirectly) on the association between tax avoidance and reputation. They claim that an aggressive tax policy could erode the reputational capital of a firm and that by appointing more independent directors to the board, this should provide firms and their managers with the requisite knowledge and advice about having all-inclusive CSR and tax policies that should improve the reputation of the firm and its standing in the community. They argue that CSR and independent directors jointly affect tax avoidance, especially if independent directors are aware of the links between CSR, firm tax policies, and reputational costs. Lanis and Richardson (2016) found that appointing more independent directors to the board enhanced the reputation of a firm and its place in the community.[4]

Graham et al. (2014) surveyed 600 tax executives with respect to the incentives associated with tax planning activities. They argue that while many researchers speculate that reputational concerns affect the degree to which managers engage in tax planning, this premise is difficult to test using archival data. Their results show that reputation is important to tax strategy, with 70% of firms rating it as important or very important in their decision to avoid implementing a tax planning strategy that lacked business purpose or economic substance. However, Graham et al. (2014) cautioned that the role of reputation has been debated in the literature and has led to conflicting evidence with specific reference to prior research by Hanlon and Slemrod (2009) and Gallemore et al. (2014).

Gallemore et al. (2014) examined the effect of reputational costs on tax avoidance. They defined tax avoidance in their study as those firms revealed as having engaged in tax shelter activity over the 1995–2005 period. Gallemore et al. (2014) justified using firms that engaged in tax sheltering as a proxy for tax avoidance based on an earlier version of Graham et al. (2014) where the survey results are consistent with managers perceiving that aggressive tax avoidance would expose them (or their firms) to reputational costs. Thus, they assumed that a more extreme form of tax avoidance was more likely to have reputational consequences. They also claim that reputation is a multifaceted construct, so they assessed the impact of tax sheltering on several reputational consequences including those related to the firm, management, shareholders, customers, and tax authorities. In analyzing 118 firms classified as having engaged in tax sheltering, Gallemore et al. (2014) found little-to-no association between tax sheltering and any reputational consequences across a range of tests that they applied. Despite their findings, they provide the following critical explanation which fundamentally contributes to the motivation of our study.

> We are careful to note, however, that such an effect may indeed exist; but we are simply unable to find it empirically in our tests, perhaps because shelter firms are peculiar or because we have a small sample and/or low power (p. 1105).

In an attempt to provide an explanation for their findings, Gallemore et al. (2014) speculated that firms that do expect reputational consequences do not engage in tax shelter activity, and only those firms that are immune from reputational concerns engage in such behavior. They rule this explanation as unlikely on the grounds that it does not align with the wide variety of firms that they observe engaging in tax shelters, and they find no evidence that reputation significantly affects the likelihood of tax shelter participation.

Austin and Wilson (2017) explored the association between tax avoidance and consumer reputation (proxied by consumer brands). They found that firms with more valuable consumer brands have higher ETRs (i.e., are less tax aggressive), but there is scant evidence of an association when using tax shelter as the proxy for tax avoidance. Chyz and Gaertner (2018) analyzed firms in the bottom of the tax distribution relative to peers as a proxy for what boards might consider paying too little tax by observing "forced CEO turnover" and using a relative tax industry-benchmarked tax measure of GAAP and cash ETRs. They found that CEOs are more likely to undergo forced turnover when benchmarked tax rates are either relatively high or low, suggesting that negative reputational effects are at the extremes of their relative tax proxy. While Kubick et al. (2016) did not directly explore the association between tax avoidance and reputation in finding a link between tax avoidance and tax-related comment letters from the SEC, they did observe that the portion of tax avoidance that triggers comment letters is either subject to adjustment by the tax authorities or reputation penalties.

The purpose of our study is to revisit the research question by addressing the concerns of Gallemore et al. (2014) in terms of their narrow definition of tax avoidance that leads to a limited sample of unique firms which is small and possibly unrepresentative. We focus our attention on reputational consequences that have enjoyed the most support in the literature (i.e., board of directors and CEOs). More importantly, we revisit the research question in light of prior research by Graham et al. (2014) and Lanis and Richardson (2016) which conjectures that tax avoidance and reputation are likely to be linked empirically, so our study both complements and extends prior research (e.g., Gallemore et al. 2014; Austin and Wilson 2017; Chyz and Gaertner 2018) in three important ways. First, it has been shown that independent directors face reputational concerns that are different from those of CEOs (e.g., Fahlenbrach et al. 2014; Sila et al. 2015), justifying

[4] In an earlier but related study, Hoi et al. (2013) find that firms with excessive irresponsible CSR activities (i.e., a risk management strategy that a firm uses to possibly enhance its CSR reputation) are more aggressive in avoiding taxes.

separate study, so we examine the reputational changes of not only executive and independent directors, but also CEOs. Second, for executive directors and CEOs, turnover along with impaired career progression is the most severe form of personal penalty (Desai et al. 2006). However, even if executive officers do not lose their jobs, they may face large reputational penalties in the form of losing their outside board seats held in other firms. Our analysis of CEO reputational change thus extends research by Chyz and Gaertner (2018) by showing whether in the absence of turnover, CEOs and executive directors undergo declines in reputation as evidenced by losses of their outside board seats. Finally, while CEO turnover and limited career opportunities are essentially a form of "penalty" for tax avoidance, we expand the analysis into the impacts of tax avoidance by analyzing both positive and negative changes in reputation for directors and executives using a two-directional measure of the change in outside directorships. This helps to address concerns in the literature that the impact of tax avoidance on reputation might not be as previously assumed (see Chyz and Gaertner 2018).

Hypotheses Development

We conjecture that there is likely to be an association between tax avoidance and certain firm reputational consequences. We define tax avoidance as the downward management of taxable income through tax planning activities (Frank et al. 2009), so it involves tax planning activities that are legal or that may fall into an uncertain gray area where the eventual outcome is unknown. This definition accords with the concept of a continuum of tax avoidance ranging from activities that are actively encouraged by the tax system (e.g., R&D expenditures or investing in local government bonds) to outright illegal tax evasion (Hanlon and Heitzman 2010). In terms of reputation, we focus our attention on the impacts it has on the career opportunities of the board of directors and the CEO given the weight of research and empirical evidence (see above) supporting these impacts as the most valid, measurable, and relevant consequences.

Tax Avoidance, Reputation, and the Board of Directors

The board of directors is considered to be a key mechanism for governing a firm. Seminal research by Fama and Jensen (1983) proclaimed that the board of directors is an important decision and control mechanism in the agency framework. It emphasized the importance of the separation of management decision-making functions from the control functions carried out at the board level. The board is the top decision control apparatus in a firm and is used to ratify and monitor its key decisions, and to hire, fire, and compensate top-level managers (Fama and Jensen 1983). Authority is given to the board by the shareholders to limit any residual loss arising from agency problems and to provide a relatively low-cost means for replacing or changing top management (Fama 1980). Evidence shows that the board of directors (e.g., director independence, backgrounds and experience, networks) effects tax avoidance (e.g., Brown 2011; Brown and Drake 2014; Lanis and Richardson 2014). Lanis and Richardson (2014) found an association between the number of outside directors on the board and tax avoidance. Brown (2011) observed that firms which share interlocked directors that serve tax-aggressive firms are more likely to engage in tax sheltering, while Brown et al. (2015) found an association between board network ties and tax avoidance. However, the literature is unclear about how tax avoidance affects the reputation of the board together or the independent directors and the executive (non-independent) directors separately. In fact, there are competing theories suggesting that directors' reputation could either improve or decline. Some multinational firms declare in their tax report that they "will not … pay more tax than is properly due under a reasonable interpretation of the law and upon receipt of a lawful demand" (Vodafone 2015). This equips directors with the incentive to engage in tax avoidance if the benefits exceed the costs of those activities (Scholes et al. 2005).[5] Agency theory claims that reducing a firm's effective tax burden is in the best interest of shareholders (Crocker and Slemrod 2005).

If indeed this is the expectation and the appropriate view of tax avoidance, it is likely that directors on the boards of tax-avoidant firms would enjoy positive reputational consequences, particularly if the tax avoidance leads to increased cash inflows and less cash flow volatility. There is also the claimed by Ordower (2010) that tax avoidance has become so acceptable that reputational effects from corporate tax avoidance may not exist:

> From the literature, one gets the impression that tax planning and tax avoidance is so prevalent in the countries with developed national economies that tax avoidance always has been or has become acceptable behavior (p. 50).

Following these arguments, any reputational consequences for directors of firms engaging in tax avoidance could either be positive as they are providing benefits to shareholders or for those firms not engaging in this behavior,

[5] The benefits from tax planning include reduced tax liabilities, increased cash flows, and maintenance of favorable credit ratings, while the costs include explicit direct costs (e.g., audit and litigation costs, consulting fees paid to outside consultants, fines and penalties from tax audits by a tax authority, and salaries and other costs related to running a tax department) (Edwards et al. 2016) and implicit indirect costs (e.g., low rates of return on investments in tax-favored assets as well as reputational costs) (Scholes et al. 2005). An additional indirect cost of tax avoidance for government and society as a whole is the declining tax revenues that create fiscal problems (Hansen et al. 1992).

the consequences for directors could be negative because they are not providing the same legitimate benefits as the other tax-avoidant firms. However, alternative theoretical arguments have also been presented that draw attention to the allegedly unethical and immoral nature of tax avoidance.

Hansen et al. (1992) claimed that planning, control, and decision-making should include ethical processes and outcomes rather than only striving to achieve profit maximization for shareholders. Rose (2007) argued that the board of directors has the ultimate responsibility for the firm's strategic decisions regarding all stakeholders and the community, thus ensuring that stakeholder and societal expectations are amply dealt with. This has led to government initiatives to reform corporate law in several countries (e.g., Australia and the U.K.) (Lanis and Richardson 2014). Such initiatives have extended the range of stakeholders to whom directors owe a duty to include all stakeholders in the community (Ibrahim et al. 2003). Thus, in this broader context of tax avoidance, it is likely that boards of more tax-aggressive firms are less reputable as they are not meeting community expectations to contribute to shared tax obligations (Lanis and Richardson 2014). Further, as per research by Freedman (2003) and Freise et al. (2008), when a firm is considered to be establishing a scheme or arrangement with the main purpose of avoiding tax, it is usually not thought to be paying its "fair share" of taxes to the government to ensure the financing of public goods (e.g., education, national defense, public health care, transport infrastructure, and law enforcement) (Lanis and Richardson 2014). This deficit in tax revenue produces a large and possibly irrecoverable loss to the community (Slemrod 2004; Williams 2007; Schön 2008).

Overall, it is possible that both positive and negative board reputation impacts arise from tax avoidance, but it is more probable that one should dominate the other. Therefore, unless an impact exactly cancels out the other, on aggregate, we develop the following hypothesis:

H1 All else equal, there is an association between corporate tax avoidance and the reputation of the board of directors.

The effectiveness of the board of directors in monitoring the management of the firm is a function of the mixture of executive and independent directors (Fama 1980; Fama and Jensen 1983). Tax-avoidance research focuses mainly on the effect of independent directors on firm tax avoidance. For instance, Minnick and Noga (2010) found that an assortment of governance metrics (e.g., board independence) is not significantly associated with the level of book or cash taxes, however, they provide some evidence which shows that the governance arrangements of a firm direct the tax management strategy that it pursues. They also found that more independent boards have a greater focus on foreign tax management, while larger boards focus more on managing domestic taxes. In contrast, Lanis and Richardson (2011) found that the inclusion of a higher proportion of independent members on the board reduces tax avoidance. Armstrong et al. (2015) report mixed results on board independence and tax avoidance, showing that effective corporate governance reduces extremely high levels of tax avoidance and increases relatively low-levels of tax avoidance. In general, these results show some variation in the tax response to the level of board independence.

One theory advanced in the literature that explains the variation in the tax response to board independence is that independent directors are likely to be in a better position than insiders to make superior decisions about tax strategies (Lanis and Richardson 2011). Prior research suggests that as well as their important role as monitors protecting shareholder interests, independent directors also improve the quality of corporate decisions by providing objective and unbiased expert advice, and counsel to the board (e.g., Anderson and Reeb 2004; Dahya and McConnell 2005).

The provision of expert advice could possibly be one of the main reasons for the appointment of independent directors to the board. Hermalin and Weisbach (1988) found that some CEOs choose independent directors who can provide superior advice and counsel, and bring valuable experience and expertise to the board. Pfeffer and Salancik (1978) and Hillman and Dalziel (2003) claimed that such directors supply a firm with the resources essential to its long-term success and survival. Independent directors also contribute to a skilled and well-informed board as they are usually drawn from experienced professionals and experts with broad expertise in several important areas such as business strategy, finance, and operations (Fich 2005; Linck et al. 2008).

Prior studies find that independent directors have greater incentives to protect their reputations than executive directors, and that the reputations of independent versus executive directors are assessed differently in the director labor market (Brochet and Srinivasan 2014; Fahlenbrach et al. 2014; Jiang et al. 2016; Bugeja et al. 2017). For example, Aharony et al. (2015) found that independent directors experience higher turnover following environmental and intellectual property lawsuits against their firms. This suggests that independent directors are more sensitive to reputational changes following corporate conduct which is politically sensitive (such as environmental disputes). Corporate tax avoidance is a highly political issue, as evidenced by significant media coverage and public outcry associated with each corporate tax scandal (e.g., Barford and Holt 2013; Doran 2015; Perez-Truglia and Troiano 2015). Therefore, whether tax avoidance is viewed to enhance or impair director reputations, we expect the reputations of independent directors to be more sensitive to corporate tax avoidance than the reputations of executive directors. Accordingly, we develop the following hypothesis:

H2 All else equal, the association between corporate tax avoidance and independent director reputation is stronger than the association between corporate tax avoidance and executive reputation.

Tax Avoidance, Reputation, and CEOs

In line with economic theory, firms should increase their level of tax avoidance until the marginal costs exceed the marginal benefits (e.g., Crocker and Slemrod 2005; De Waegenaere et al. 2010; McCarty 2012). One of the costs often referred to is the "reputational cost" for those individuals involved in corporate tax avoidance (Armstrong et al. 2015; Austin and Wilson 2017). Not only is the reputation of CEOs important for both the firm and the individual, CEOs are also directly involved in a firm's tax decisions. In other situations such as involvement in earnings misstatements or certain types of lawsuits, the reputational effects for CEOs can be observed and measured. However, as with directors, the anticipated direction of any CEO reputational effect associated with the level of a firm's tax avoidance may depend on which viewpoint is adopted.

Reputation is important for both the CEO and the firm. The most important decisions for the board are appointing, compensating and, if required, firing the CEO. When assessing candidates for appointment, the board cannot know whether the CEO will be effective because their future performance is unobservable. The board therefore uses a candidate's reputation as a proxy for their future ability. Further, the reputation of the CEO can also produce a lower cost of capital (Cao et al. 2015) and can contribute to an increase in the share price such as when "Chainsaw" Al Dunlap was appointed to the Sunbeam Corporation (Ranft et al. 2006).

CEOs have influence over the tax consequences of the firm by setting the "tone at the top" with respect to a firm's tax activities and by determining the incentives for those executives involved in implementing tax strategies (Gaertner 2014). As per the Fama and Jensen (1983) agency framework, CEOs are responsible for the initiation and implementation of key decisions in the firm such as its tax strategy. The income tax expense is one of the largest single items on the income statement and a significant outflow from operating cash flows. However, CEOs are agents of the board and the board is responsible for hiring, firing, and compensating them. Consistent with the agency framework (Fama 1980; Fama and Jensen 1983), the reputational concerns of directors align CEOs' incentives with those of shareholders (Ruiz-Verdú and Singh 2014).

If there are incentives for tax avoidance included in CEO compensation (e.g., after-tax measures of performance), it is the same directors that approved those incentives who will initially determine any reputational consequences for the CEO such as rewarding or firing. CEOs involved in initiating and implementing tax strategies also face the risk of personal penalties if a tax arrangement is deemed to be overly aggressive. Thus, CEOs require higher levels of compensation to take-on the greater risks associated with tax avoidance (Chen and Chu 2005; Gaertner 2014). Gaertner (2014) found that CEO incentives based on after-tax earnings measures are not only related to higher levels of tax avoidance (i.e., lower GAAP and cash ETRs), but also to higher levels of CEO cash compensation. Armstrong et al. (2015) showed that effective corporate governance tends to reduce high levels of tax avoidance and increase low-levels of tax avoidance.

Consistent with directors, there are competing theories about the direction of any reputational consequences for CEOs involved in tax avoidance. As per the agency theory framework, providing additional cash flows for distribution to shareholders or implementing value-increasing investments may improve the reputation of the CEO. However, as per the societal approach, the decision by the CEO to engage in tax avoidance could undermine the legitimacy of a firm and lead to a reduction in the CEO's reputation. It is possible that both effects may arise from tax avoidance, but it is expected that one will dominate the other, so we develop the following hypothesis.

H3 All else equal, there is an association between corporate tax avoidance and the reputation of the CEO.

Research Design

Sample Selection Procedure and Data Source

Our sample selection procedure is reported in Table 1 (Panel A). Financial accounting data were collected from Compustat Database, while executive and director data were gathered from the ExecuComp and RiskMetrics Directors Databases, respectively. Our sample initially consisted of all 2789 current and former Standard and Poor's 1500 firms with available data from ExecuComp over the 2000–2011 period. However, we removed 172 firms whose data were missing from Compustat or RiskMetrics (587 firm-years). We also removed firm-years for which any variable was missing from Eq. (6) below. To observe the change in CEO reputation, for a firm-year observation to be included in the sample, we required that the CEO remained in that position during the period from year 0 to year + 2. After removing 9044 firm-years that experienced CEO turnovers, or with other CEO variables missing, 9358 firm-years (or 1714 unique firms) remained in the sample. We also removed 264 firms with Global Industry Classification Standard (GICS) codes 40 (financials) and 50 (utilities) from our sample. Our

Table 1 Sample selection and industry breakdown

Panel A: Sample selection for firm-year observations		
Sample selection	Firm-years	Unique Firms
Number of firm-years with available information from ExecuComp Database (2000–2011)	18,989	2789
Less: Firms with missing data from RiskMetrics or Compustat Databases	587	172
	18,402	2617
Less: Firms with missing variables for Eq. (6)—change in CEO reputation over |0,+2| period	9044	903
	9358	1714
Less: Firms in the Financial (GICS 40) or Utilities (GICS 50) industries	1927	264
Final sample	7431	1450

Panel B: Industry breakdown				
Industry (GICS)	Industry description	Number of firms	Number of firm-year observations	Relative frequency (%)
10	Energy	110	564	7.59
15	Materials	118	680	9.15
20	Industrials	242	1536	20.67
25	Consumer discretionary	311	1508	20.29
30	Consumer staples	87	430	5.79
35	Health care	208	995	13.39
45	Information technology	347	1626	21.88
50	Telecommunication service	27	92	1.24
	Total	1450	7431	100.00

This table reports the sample selection for the period 2000–2011 and industry breakdown of the sample firms. Panel A reports the selection of firm-year observations for the regression analyses in this study. Panel B reports the industry breakdown of the firms and firm-year observations. For a firm-year observation to be included in the regressions analyses predicting the change in CEO reputation, the firm-year must experience no CEO turnover during the $|0+2|$ or $|-1+2|$ period. Due to missing data in the variables, the number of observations included in the regression analysis varies across the regression model specifications. The industry classification is based on two-digit GICS codes. Firms with codes 40 (Financials) and 50 (Utilities) are excluded from the sample

final sample therefore consists of 7431 firm-year observations (or 1450 unique firms).

Table 1 (Panel B) reports the industry breakdown of the firm-year observations in the sample using the two-digit GICS codes. Amongst the ten remaining industries, information technology (GICS 45) is most broadly represented in the sample, totaling 347 firms, followed by consumer discretionary (GICS 25) of 311 firms, and industrials (GICS 20) of 242 firms.

Dependent Variables

We compute several dependent variables to capture the changes in director and executive reputation. Consistent with the reputation literature (e.g., Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007; Brochet and Srinivasan 2014; Jiang et al. 2016; Levit and Malenko 2016; Lel and Miller 2017), we use the change in the number of outside directorships held on other major boards as our measure of director and CEO reputation which is consistent with the non-directional nature of our investigation. Following prior research that measures the collective reputation of a corporate board, we use the average number of outside board seats held by all directors on the board (e.g., Wu 2004). We first measure board reputation by observing the collective change in director reputation, $\Delta BRD_{t|0+2|}$, calculated as the difference between the average number of outside board seats held by all directors on the board in year 0, and the average board seats held by all directors in year + 2.[6] Second, we separately examine independent and executive director reputation following prior studies (e.g., Srinivasan 2005; Helland 2006; Fich and Shivdasani 2007). $\Delta IND_{t|0+2|}$ is calculated as the difference between the average directorships held by

[6] This measure captures all changes in board reputation, attributable to two potential causes: (1) changes in individual directors' reputations (i.e., the same director gaining or losing board seats), or (2) the departure and appointments of different directors, bringing new reputational capital onto the board. In additional analyses, we isolate the first cause only by excluding the effects of director turnover. We calculate a different measure of board reputation ($\Delta BRD^{*}_{t|0+2|,t|0+2|}$), by identifying directors who remain on the board over the entire duration of the observation period $|0+2|$ (or $|-1+2|$), and computing the change in the average number of board seats held by those directors only. We also repeat our analyses for independent director reputation ($\Delta IND^{*}_{t|0+2|,t|0+2|}$).

independent directors in year 0 and in year + 2. Adhering to the same methodology, we compute the reputation change of non-CEO executive directors ($\Delta EXE_{t|0+2|}$) and all executive directors including CEOs ($\Delta EXECEO_{t|0+2|}$). Third, we measure CEO reputation ($\Delta CEO_{t|0+2|}$) as the change in the number of outside directorships held by the CEO from year 0 through year + 2 (Helland 2006). Finally, we recalculate all dependent variables using an alternative observation period |− 1 + 2| from year − 1 to year + 2. All variables used in our empirical analysis are defined in Appendix 1.

Independent Variables

Our independent variable of interest is denoted by corporate tax avoidance (*TA*). Prior studies normally rely on multiple proxy measures of tax avoidance because each measure has its own limitations (Hanlon and Heitzman 2010). We employ three proxy measures of tax avoidance in this study denoted by tax sheltering (*SHELTER*), predicted unrecognized tax benefits (*P_UTB*), and effective tax rate (*ETR*). Our three empirical proxies of tax avoidance represent a broad range of tax-avoidance practices along the tax-avoidance continuum from particularly aggressive forms of corporate tax practices (i.e., *SHELTER* and *P_UTB*) to more common and less aggressive forms of tax-avoidance (tax management) practices (i.e., *ETR*) (Hanlon and Heitzman 2010). This allows us to provide important insights into the impact of more aggressive versus less aggressive forms of tax-avoidance practices on director and executive reputation.

Our first measure of tax avoidance, *SHELTER*, captures particularly aggressive forms of tax-avoidance practices (Wilson 2009). It is calculated by employing the following model using logit regression estimates as reported in Wilson's (2009) study (Table 5, Column 1). A higher value of *SHELTER* indicates a greater probability of engaging in tax sheltering activity.[7]

$$\begin{aligned} SHELTER = & -4.30 + 6.63 * BTD - 1.72 * LEV \\ & + 0.66 * SIZE + 2.26 * ROA + 1.62 \\ & * FOREIGN\_INCOME + 1.56 * RD \end{aligned} \quad (1)$$

where *BTD* is the book-tax difference: book income less taxable income scaled by total assets; *LEV* is the long-term debt scaled by total assets; *SIZE* is the natural logarithm of total assets; ROA is the net-income scaled by total assets; *FOREIGN_INCOME* is a dummy variable coded as 1 for firms with foreign income, and 0 otherwise; and *RD* is the R&D expenses scaled by total assets.

Our second proxy measure of tax avoidance, *P_UTB*, also captures relatively extreme forms of tax-avoidance practices (Hanlon and Heitzman 2010). It is calculated using the following equation of Rego and Wilson (2012).[8] Larger values of *P_UTB* represent higher levels of tax avoidance:[9]

$$\begin{aligned} P\_UTB = & -0.004 + 0.011 * ROA + 0.001 * SIZE \\ & + 0.010 * FOR\_SALE + 0.092 * RD \\ & - 0.002 * DISC\_ACCR + 0.003 * LEV \\ & + 0.000 * MB + 0.014 * SGA \\ & - 0.018 * SALES\_GR \end{aligned} \quad (2)$$

where *ROA* is the net-income scaled by total assets; *SIZE* is the natural logarithm of total assets; *FOR_SALE* is the foreign sales scaled by total sales; *RD* is the R&D expenses scaled by total assets; *DISC_ACCR* is the discretionary accruals, computed using the performance-adjusted modified Jones (1991) model; *LEV* is the long-term debt scaled by total assets; MB is the market-to-book ratio; *SGA* is the selling and general administrative expenses; and *SALES_GR* is the annual growth rate in sales.

Our third proxy measure of tax avoidance, *ETR*, captures less aggressive and more common forms of tax-minimizing practices (Hanlon and Heitzman 2010). Following Dyreng et al. (2008, 2010), we measure *ETR* over a one-year period as the sum of tax expense (current and deferred) scaled by the sum of pre-tax accounting income. Negative measures of *ETR* indicate that a firm receives an income tax refund in a given year, in which case we set the *ETR* measure at zero (Dyreng et al. 2008). Lower values of *ETR* represent higher levels of tax avoidance.[10]

In computing the independent variables that capture our tax *TA* measures (*SHELTER, P_UTB* and *ETR*), we follow prior fraud literature that has explored the changes in

[7] Kim et al. (2011) and Rego and Wilson (2012) find that Wilson's (2009) tax shelter model has construct validity.

[8] We use the predicted value of UTB rather than actual UTB as recorded in the Compustat Database for two reasons. First, a significant number of observations of UTB in Compustat contain missing values. Therefore, including this measure in our regressions would result in a reduction of up to 80% of our sample size. Second, predicted UTB is a widely accepted measure of tax avoidance in the relevant literature and has been used in numerous tax studies (e.g., Rego and Wilson 2012; Boone et al. 2013; Olsen and Stekelberg 2016).

[9] Unrecognized tax benefits (UTBs) are accrued balance sheet liabilities that are identified as per FIN 48.18. They are that part of the tax benefit listed in a firm's tax return that is not expected to be sustained following a tax audit. Hanlon and Heitzman (2010) claim that higher UTBs infer more uncertainty in a firm's tax position and are indicative of the level of uncertainty in its tax avoidance. As an accounting accrual, UTBs are reliant on management judgement and may be affected by financial reporting incentives, so UTBs are a composite measure that reflect both tax avoidance and tax-based earnings management activity (Boone et al. 2013).

[10] In our additional analyses where we employ a continuous measure of *ETR*, we adjust the sign of the *ETR* variable by multiplying it with − 1, so that the direction of the expected sign is consistent with those of the other two measures of tax avoidance (*SHELTER* and *P_UTB*), which makes the results easier to interpret.

executive and director reputation (e.g., Desai et al. 2006; Helland 2006; Fich and Shivdasani 2007; Humphery-Jenner 2012; Agrawal and Cooper 2017). As discussed in "Reputational Consequences of Firm Policies", prior studies in this area define securities fraud as a dummy variable that equals one to capture any securities fraud allegation, and zero otherwise. This dummy variable is used to predict the changes in director and executive reputation. We use a similar approach in computing our *TA* variables by assigning a value of one to those firms that are tax aggressive, and zero otherwise. We follow research by Donohoe and Knechel (2014) in this regard and classify a firm as being tax aggressive if it falls within the highest tercile of *SHELTER* and *P_UTB* (or the lowest tercile of *ETR*) by year in a two-digit GICS industry. These tax-avoidance dummies capture a firm's risk of coming under scrutiny by the IRS (Donohoe and Knechel 2014).[11]

Control Variables

We include several control variables in our regression models from prior research such as firm size ($LogTA_{t-1}$), performance (ROA_{t-1}), and board independence ($\%OUTSIDE_{t-1}$) (Fee and Hadlock 2004; Desai et al. 2006). In predicting the collective reputations of directors (i.e., independent or executive), we control for board characteristics such as percentage of female directors (BRD_GENDER_t), average director age (BRD_AGE_t), average duration of tenure (BRD_TENURE_t), average stock ownership (BRD_OWN_t), and the average existing number of outside board seats held by the directors (BRD_SEATS_t). Directors who hold a higher number of existing board seats are more likely to experience negative changes in board seats due to an overcommitment of their time. In predicting CEO reputation change, we include executive-level controls such as age (CEO_AGE_t), gender (CEO_GENDER_t), internal appointment ($INTERNAL_t$), tenure (CEO_TENURE_t), stock ownership (CEO_OWN_t), and the number of existing directorships held by the CEO at the beginning of the observation period (CEO_SEATS_t) (Desai et al. 2006; Fich and Shivdasani 2007). Finally, we incorporate year and industry dummy variables in our regression models to control for year and industry-sector effects.

Regression Models

To examine H1 relating to board reputation, we estimate the following ordinary least squares (OLS) regression model, where the dependent variable is the change in board reputation:

$$\begin{aligned}\Delta BRD_{t|0+2|,t|-1+2|} = {} & \alpha + \beta_1 TA_t + \beta_2 LogTA_{t-1} + \beta_3 ROA_{t-1} \\ & + \beta_4 \%OUTSIDE_{t-1} + \beta_5 BRD\_GENDER_t \\ & + \beta_6 BRD\_AGE_t + \beta_7 BRD\_TENURE_t \\ & + \beta_8 BRD\_OWN_t + \beta_9 BRD\_SEATS_t \\ & + \sum industry\_dummies \\ & + \sum year\_dummies + \varepsilon \end{aligned} \quad (3)$$

We next investigate H2 by separately examining the changes in the reputation of independent and executive directors (excluding or including CEOs). In the following OLS regression models, the dependent variables measure the change in independent and executive director reputation in turn. We also replace the board-level control variables in Eq. (3) with control variables that capture the same characteristics of independent and executive directors in Eqs. (4)–(5):

$$\begin{aligned}\Delta IND_{t|0+2|,t|-1+2|} = {} & \alpha + \beta_1 TA_t + \beta_2 LogTA_{t-1} + \beta_3 ROA_{t-1} \\ & + \beta_4 \%OUTSIDE_{t-1} + \beta_5 IND\_GENDER_t \\ & + \beta_6 IND\_AGE_t + \beta_7 IND\_TENURE_t \\ & + \beta_8 IND\_OWN_t + \beta_9 IND\_SEATS_t \\ & + \sum industry\_dummies \\ & + \sum year\_dummies + \varepsilon \end{aligned} \quad (4)$$

$$\begin{aligned}\Delta EXE|\Delta EXECEO_{t|0+2|,t|-1+2|} = {} & \alpha + \beta_1 TA_t + \beta_2 LogTA_{t-1} \\ & + \beta_3 ROA_{t-1} + \beta_4 \%OUTSIDE_{t-1} + \beta_5 EXE\_GENDER_t \\ & + \beta_6 EXE\_AGE_t + \beta_7 EXE\_TENURE_t + \beta_8 EXE\_OWN_t \\ & + \beta_9 EXE\_SEATS_t + \sum industry\_dummies \\ & + \sum year\_dummies + \varepsilon \end{aligned} \quad (5)$$

Finally, we examine H3 by estimating the following OLS regression model predicting the change in CEO reputation:

$$\begin{aligned}\Delta CEO_{t|0+2|,t|-1+2|} = {} & \alpha + \beta_1 TA_t + \beta_2 LogTA_{t-1} + \beta_3 ROA_{t-1} \\ & + \beta_4 \%OUTSIDE_{t-1} + \beta_5 CEO\_GENDER_t \\ & + \beta_6 CEO\_AGE_t + \beta_7 CEO\_TENURE_t \\ & + \beta_8 CEO\_OWN_t + \beta_9 INTERNAL_t \\ & + \beta_{10} CEO\_SEATS_t \\ & + \sum industry\_dummies \\ & + \sum year\_dummies + \varepsilon \end{aligned} \quad (6)$$

Empirical Results

Descriptive Statistics

Table 2 reports the descriptive statistics for the dependent (ΔBRD, ΔIND, ΔEXE or $\Delta EXECEO$, and ΔCEO),

[11] In our additional analyses, we also use a series of continuous tax-avoidance variables (*SHELTER, P_UTB*, and *ETR*) as independent variables instead of the tax-avoidance dummy variables, producing substantially similar results (see Table 12).

independent (*SHELTER, P_UTB*, and *ETR*) and control variables (*GENDER, AGE, OWN, TENURE, INTERNAL*, and *SEATS*). The dependent variables ΔBRD, ΔIND, ΔEXE, and ΔCEO over the $|0+2|$ period ($|-1+2|$ period) have a mean of −0.002 (−0.0003), −0.018 (−0.021), −0.034 (−0.029), and 0.083 (0.119), respectively, and a median of zero. For the raw independent variables, the mean (median) for *SHELTER, P_UTB*, and *ETR* are 1.771 (1.851), 0.007 (0.006), and 0.309 (0.335), respectively which are consistent with prior research (e.g., McGuire et al. 2012; Boone et al. 2013; Hoi et al. 2013). We convert these variables into the tax-avoidance dummy variables (*TA_SHELTER, TA_PUTB*, and *TA_ETR*) using the procedures described in the previous section of this paper. Finally, the descriptive statistics of the control variables are also reported in Table 2.

Pearson Correlation Coefficients

The Pearson correlation results are shown in Table 3. In particular, Panels A–D report the correlation coefficients between the explanatory variables for Eqs. (3)–(6), respectively. We find only moderate levels of collinearity between the explanatory variables (e.g., Hair et al. 2010). The highest correlation coefficient 0.531 is between *TA_SHELTER* and *logTA* ($p<0.01$), whereas other correlation coefficients between different pairs of explanatory variables are below 0.500.[12]

Regression Results

Tax Avoidance and Change in Board Reputation (H1)

Table 4 reports the results from the OLS regressions that examine the association between board reputation and tax avoidance (Eq. (3)), with estimated coefficients and *p* values in parentheses. The *p* values are based on the Huber/White/Sandwich estimator of standard errors (e.g., Wooldridge 2010), and two-tailed tests of significance are employed. In addition, the coefficients for the year and industry-sector effects are not reported for the sake of brevity. Finally, the tax-avoidance proxy measures are ranked from the more extreme end to the less extreme end of the tax-avoidance continuum (Hanlon and Heitzman 2010) in descending order.

Consistent with our expectation for H1, we find that *TA_SHELTER* is significant with a positive estimated coefficient in predicting $\Delta BRD_{t|0+2|}$ ($p<0.10$) and $\Delta BRD_{t|-1+2|}$ ($p<0.01$) in models (1) and (2). Likewise, our second measure of tax avoidance, *TA_PUTB*, is also positively and significantly associated with $\Delta BRD_{t|0+2|,t|-1+2|}$ in Models (3)–(4) ($p<0.01$). Further, we find that *ETR* is significant in predicting $\Delta BRD_{t|0+2|}$ ($p<0.05$) and $\Delta BRD_{t|-1+2|}$ ($p<0.01$) in models (5) and (6). Our regression results show that directors on the board, on average, appear to be rewarded by an increase in reputation when the firm engages in tax avoidance. We also find that the control variables are associated with the change in board reputation as per prior research (e.g., Liu et al. 2016). Directors from larger firms (*LogTA*) and more independent boards (*%OUTSIDE*), with lower stock ownership (*BRD_OWN*), shorter tenure (*BRD_TENURE*), and fewer existing board seats (*BRD_SEATS*) are more likely to experience an increase in directorships ($p<0.05$ or better).

Tax Avoidance and Change in Independent Versus Executive Director Reputation (H2)

We also separately analyze the reputational change for independent versus executive directors. We present the regression results for Eq. (4) in Table 5. We observe that the coefficients of *TA_SHELTER* and *TA_PUTB* are positive and significant in predicting $\Delta IND_{t|0+2|,t|-1+2|}$ ($p<0.05$ in model (1), $p<0.01$ in models (2)–(4)). *TA_ETR* is also significant in predicting $\Delta IND_{t|-1+2|}$ in model (6) but not in predicting $\Delta IND_{t|0+2|}$ in Model (5). The statistical significance of the tax aggressiveness variables is similar to those shown in Table 4. For the control variables, we find that an increase in average board seats held is associated with larger firm size (*LogTA*), greater board independence (*%OUTSIDE*), shorter tenure (*IND_TENURE*), and fewer existing directorships (*IND_SEATS*) ($p<0.01$), as expected. Overall, these results show that independent directors experience increased popularity amongst other corporate boards when their firms engage in tax avoidance.

Next, we consider executive director reputation as a part of testing H2. Table 6 reports the regression results for change in reputation for executive directors excluding CEOs. We find that *TA_SHELTER* is positive and statistically significant in predicting $\Delta EXE_{t|0+2|,t|-1+2|}$ models (1) and (2) ($p<0.05$), but the other tax-avoidance variables are not significant. In contrast, Table 7 reports the results from Eq. (5) predicting $\Delta EXECEO_{t|0+2|,t|-1+2|}$, which measures the reputation change of executive directors *including* CEOs. The estimated coefficient of *TA_SHELTER* is positive and significant in predicting $\Delta EXECEO_{t|0+2|,t|-1+2|}$ in Models (1)–(2) ($p<0.10$ and $p<0.01$, respectively). Finally, the estimated coefficient of *TA_ETR* is also positively and significantly associated with $\Delta EXECEO_{t|0+2|,t|-1+2|}$ in models (5) and (6) ($p<0.01$).

[12] We also compute variance inflation factors (VIFs) when estimating our regression models to test for multicollinearity between the explanatory variables. We observe that no VIFs exceed five and thus conclude that multicollinearity is not a problem in our study (e.g., Hair et al. 2010).

Table 2 Descriptive statistics

	n	Mean	Median	SD	Maximum	Minimum
ΔBRD|0 + 2|	7428	−0.002	0.000	0.298	0.833	−0.871
ΔBRD|− 1 + 2|	7428	0.0003	0.000	0.353	0.956	−1.015
ΔIND|0 + 2|	7425	−0.018	0.000	0.385	1.084	−1.170
ΔIND|− 1 + 2|	7420	−0.021	0.000	0.453	1.250	−1.307
ΔEXE|0 + 2|	4402	−0.034	0.000	0.587	2.000	−2.000
ΔEXE|− 1 + 2|	4369	−0.029	0.000	0.678	2.041	−2.250
ΔEXECEO|0 + 2|	7428	0.025	0.000	0.492	1.500	−1.500
ΔEXECEO|− 1 + 2|	7417	0.017	0.000	0.580	1.500	−1.968
ΔCEO|0 + 2|	7428	0.083	0.000	0.492	2.000	−1.000
ΔCEO|− 1 + 2|	6522	0.119	0.000	0.563	2.000	−1.000
ΔBRD*|0 + 2|	7419	0.004	0.000	0.261	0.750	−0.750
ΔBRD*|− 1 + 2|	7414	0.004	0.000	0.316	0.893	−0.900
ΔIND*|0 + 2|	7407	−0.005	0.000	0.341	1.000	−1.000
ΔIND*|− 1 + 2|	7428	−0.002	0.000	0.298	0.833	−0.871
TA_SHELTER	7430	0.329	0.000	0.470	1.000	0.000
TA_PUTB	7430	0.329	0.000	0.470	1.000	0.000
TA_ETR	7430	0.328	0.000	0.469	1.000	0.000
SHELTER	7430	1.771	1.851	1.565	5.363	−2.635
P_UTB	7430	0.007	0.006	0.006	0.027	−0.010
ETR	7430	0.310	0.335	0.159	0.000	1.000
logTA	7431	7.583	7.404	1.509	12.186	3.479
ROA	7431	0.106	0.101	0.087	0.370	−0.555
%OUTSIDE	7431	0.708	0.733	0.156	0.923	0.250
BRD_GENDER	7429	0.106	0.111	0.094	0.600	0.000
BRD_AGE	7429	60.587	60.750	3.874	70.205	50.568
BRD_OWN	7429	1.050	0.250	2.028	11.576	0.000
BRD_TENURE	7429	8.937	8.364	3.757	20.624	2.250
BRD_SEATS	7429	0.867	0.818	0.548	2.500	0.000
IND_GENDER	7426	0.128	0.125	0.120	1.000	0.000
IND_AGE	7426	61.560	61.625	4.282	72.808	50.750
IND_OWN	7424	0.190	0.057	0.465	3.354	0.001
IND_TENURE	7426	7.783	7.333	3.321	19.517	2.000
IND_SEATS	7426	0.966	0.889	0.622	2.750	0.000
EXE_GENDER	5214	0.044	0.000	0.149	1.000	0.000
EXE_AGE	5213	60.797	61.000	7.744	79.685	42.000
EXE_OWN	5209	2.092	0.607	3.693	21.513	0.000
EXE_TENURE	5214	13.556	11.500	9.602	44.000	0.000
EXE_SEATS	5213	0.611	0.200	0.848	4.000	0.000
EXECEO_GENDER	7429	0.036	0.000	0.136	1.000	0.000
EXECEO_AGE	7429	57.435	57.600	5.913	71.500	43.000
EXECEO_OWN	7426	2.409	1.110	3.480	19.858	0.022
EXECEO_TENURE	7429	11.111	9.750	7.202	33.000	1.000
EXECEO_SEATS	7429	0.566	0.333	0.657	2.782	0.000
CEO_GENDER	7431	0.024	0.000	0.152	1.000	0.000
CEO_AGE	7431	54.936	55.000	6.708	73.000	40.000
CEO_OWN	7431	2.000	0.315	4.935	29.436	0.000
CEO_TENURE	7431	7.253	5.000	7.165	33.000	0.000
INTERNAL	7431	0.600	1.000	0.490	1.000	0.000
CEO_SEATS	7431	0.525	0.000	0.754	3.000	0.000
BRD*_GENDER	7419	0.107	0.111	0.102	0.400	0.000
BRD*_AGE	7419	60.058	60.125	3.932	69.841	50.077

Table 2 (continued)

	n	Mean	Median	SD	Maximum	Minimum
BRD*_OWN	7417	0.958	0.345	1.512	8.289	0.007
BRD*_TENURE	7419	8.641	8.000	3.845	20.409	2.000
BRD*_SEATS	7419	0.872	0.833	0.563	2.556	0.000
IND*_GENDER	7407	0.130	0.143	0.132	0.500	0.000
IND*_AGE	7407	61.093	61.000	4.417	72.750	49.735
IND*_OWN	7405	0.176	0.052	0.446	3.324	0.001
IND*_TENURE	7407	7.461	7.000	3.413	19.443	1.600
IND*_SEATS	7407	0.979	1.000	0.657	3.000	0.000

This table provides the descriptive statistics of variables included in the regression analysis. All variables are defined in Appendix 1

In short, our results show that independent directors undergo improvements in their reputations when firms engage in tax avoidance of any form. We also find some evidence that executive directors' reputations improve when firms use high-risk practices of tax sheltering, while CEO reputations improve with low-risk tax practices as captured by ETR. Therefore, our results tend to support H2 as the association between tax avoidance and reputation is stronger overall for independent directors as opposed to executive directors or CEOs.

Tax Avoidance and Change in CEO Reputation (H3)

Table 8 presents the regression results for Eq. (6) which examines the association between tax avoidance and CEO reputation. Consistent with H3, we find a positive and significant coefficient of *TA_ETR* in predicting $\Delta CEO_{t|0+2|,t1+2|}$ in models (5) and (6), similar to the results shown in Table 7 ($p < 0.01$). These results provide support for H3 that CEOs experience improved reputation when their firms engage in tax-avoidance practices as evidenced by the positive net change in outside board appointments. However, we do not observe significant associations between ΔCEO and *TA_SHELTER* or *TA_PUTB*. Our combined evidence shows that the association between CEO reputation and tax avoidance is stronger when we examine a less extreme form of tax avoidance as captured by *ETR*. The control variables are associated with CEO reputation in a manner consistent with prior research (e.g., Liu et al. 2016). An increase in CEO outside directorships is associated with larger firms (*LogTA*), more independent boards (*%OUTSIDE*), lower stock ownership (*CEO_OWN*), shorter tenure (*CEO_TENURE*), and fewer existing board seats (*CEO_SEATS*) ($p < 0.01$).

Overall, our results show that both directors and CEOs undergo a positive change in reputation when their firms engage in tax avoidance. However, they are affected in a different way by various forms of tax avoidance. In fact, we find that while all of the tax-avoidance proxies (*TA*_SHELTER, *TA_PUTB*, and *TA_ETR*) are associated with improved independent director reputation, CEOs tend to experience improved reputation following less aggressive forms of tax avoidance (*TA_ETR*).

Additional Analyses

To confirm our main regression results presented in Tables 4, 5, 6, 7, and 8, we conduct additional analyses including (1) propensity score matching, (2) Fama–Macbeth (1973) estimation method, (3) alternative measures of director reputation, (4) alternative measures of tax avoidance, and (5) an alternative levels regression model specification.[13]

Propensity Score Matching

We implement a propensity matching approach. Following prior studies (e.g., Lennox et al. 2013; Armstrong et al. 2014), in the first step, we run separate probit regression models predicting the likelihood of a firm being tax aggressive (as proxied by *TA_SHELTER, TA_PUTB*, and *TA_ETR*) by using the following explanatory variables from McGuire et al. (2012): *SIZE, DISCACCR, NOL, CNOL, EQINC, FINC, RD, LEV, BTM, PPE, ROA, CASH, DEPRE, BIG4*, and *SECTIER*. The predicted estimates from these models are used as the propensity scores for each firm-year observation. Second, we perform one-to-one matched pairs for *TA_SHELTER, TA_PUTB*, and *TA_ETR*, imposing the condition that the difference between propensity scores must be lower than 0.01 between each matched pair of observations.

[13] For reasons of brevity, we only report the additional analyses corresponding to those main regression results that are found to be statistically significant in prior analyses. However, the full set of analyses are available from the corresponding author upon request.

Table 3 Pearson correlation results

	Correlation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Pearson correlation matrix for the changes in board reputation regressions												
(1)	TA_SHELTER	1.000										
(2)	TA_PUTB	0.290***	1.000									
(3)	TA_ETR	0.100***	0.199***	1.000								
(4)	logTA	0.531***	0.292***	0.070***	1.000							
(5)	ROA	0.110***	0.026**	−0.196***	−0.000	1.000						
(6)	%OUTSIDE	0.141***	0.113***	0.063***	0.191***	−0.033***	1.000					
(7)	BRD_GENDER	0.193***	0.088***	0.007	0.328***	0.101***	0.195***	1.000				
(8)	BRD_AGE	0.037***	0.029**	0.021*	0.112***	−0.025**	0.142***	−0.091***	1.000			
(9)	BRD_OWN	−0.146***	−0.094***	−0.050***	−0.207***	0.019*	−0.371***	−0.112***	−0.005	1.000		
(10)	BRD_TENURE	−0.088***	−0.076***	−0.060***	−0.132***	0.041***	−0.308***	−0.169***	0.397***	0.308***	1.000	
(11)	BRD_SEATS	0.327***	0.224***	0.097***	0.481***	−0.025**	0.316***	0.232***	0.066***	−0.246***	−0.261***	1.000
Panel B: Pearson correlation matrix for the changes in independent director reputation regressions												
(1)	TA_SHELTER	1.000										
(2)	TA_PUTB	0.290***	1.000									
(3)	TA_ETR	0.100***	0.199***	1.000								
(4)	logTA	0.531***	0.292***	0.070***	1.000							
(5)	ROA	0.110***	0.026**	−0.196***	−0.000	1.000						
(6)	%OUTSIDE	0.141***	0.113***	0.063***	0.191***	−0.033***	1.000					
(7)	IND_GENDER	0.182***	0.082***	−0.012	0.310***	0.095***	0.119***	1.000				
(8)	IND_AGE	0.010	−0.002	0.014	0.060***	−0.026**	0.062***	−0.181***	1.000			
(9)	IND_OWN	−0.103***	−0.052***	−0.016	−0.182***	−0.011	−0.042***	−0.095***	−0.006	1.000		
(10)	IND_TENURE	−0.017	−0.008	−0.005	−0.036***	0.036***	−0.081***	−0.126***	0.399***	0.140***	1.000	
(11)	IND_SEATS	0.292***	0.199***	0.080***	0.434***	−0.020*	0.224***	0.214***	0.013	−0.089***	−0.141***	1.000
Panel C: Pearson correlation matrix for the changes in executive director reputation regressions												
(1)	TA_SHELTER	1.000										
(2)	TA_PUTB	0.290***	1.000									
(3)	TA_ETR	0.100***	0.199***	1.000								
(4)	logTA	0.531***	0.292***	0.070***	1.000							
(5)	ROA	0.110***	0.026**	−0.196***	−0.000	1.000						

Table 3 (continued)

	Correlation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(6)	%OUTSIDE	0.141***	0.113***	0.063***	0.191***	−0.033***	1.000					
(7)	EXE_GENDER	0.043***	0.010	0.030**	0.081***	0.060***	−0.057***	1.000				
(8)	EXE_AGE	0.021	0.044***	0.005	0.051***	−0.008	0.128***	−0.078***	1.000			
(9)	EXE_OWN	−0.123***	−0.061***	−0.053***	−0.172***	0.001	−0.157***	0.082***	0.044***	1.000		
(10)	EXE_TENURE	−0.081***	−0.053***	−0.073***	−0.129***	−0.000	−0.056***	−0.097***	0.529***	0.316***	1.000	
(11)	EXE_SEATS	0.200***	0.124***	0.066***	0.271***	−0.020	0.155***	−0.013	0.098***	−0.100***	−0.112***	1.000

	Correlation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel D: Pearson correlation matrix for the changes in CEO reputation regressions													
(1)	TA_SHELTER	1.000											
(2)	TA_PUTB	0.290***	1.000										
(3)	TA_ETR	0.100***	0.199***	1.000									
(4)	logTA	0.531***	0.292***	0.070***	1.000								
(5)	ROA	0.110***	0.026**	−0.196***	−0.000	1.000							
(6)	%OUTSIDE	0.141***	0.113***	0.063***	0.191***	−0.033***	1.000						
(7)	CEO_GENDER	−0.015	−0.015	0.004	−0.015	0.001	0.037***	1.000					
(8)	CEO_AGE	−0.002	0.000	0.003	0.032***	0.015	0.003	−0.054***	1.000				
(9)	CEO_OWN	−0.119***	−0.089***	−0.057***	−0.202***	0.041***	−0.232***	0.021*	0.207***	1.000			
(10)	CEO_TENURE	−0.111***	−0.077***	−0.058***	−0.175***	0.002	−0.149***	−0.051***	0.431***	0.487***	1.000		
(11)	INTERNAL	0.083***	−0.019*	−0.027**	0.139***	0.084***	−0.092***	−0.007	−0.038***	−0.064***	−0.158***	1.000	
(12)	CEO_SEATS	0.160***	0.093***	0.059***	0.220***	−0.013	0.115***	0.047***	0.134***	−0.109***	0.005	0.065***	1.000

This table reports the correlation matrix of the Pearson correlation coefficients. All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

Table 4 Regression results—board reputation and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR	
	ΔBRD $\|0+2\|$	ΔBRD $\|-1+2\|$	ΔBRD $\|0+2\|$	ΔBRD $\|-1+2\|$	ΔBRD $\|0+2\|$	ΔBRD $\|-1+2\|$
Models	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.011	0.025	0.003	0.007	−0.011	−0.012
	(0.874)	(0.747)	(0.966)	(0.924)	(0.872)	(0.876)
TA_TAX	0.015*	0.026***	0.019***	0.026***	0.016**	0.021***
	(0.068)	(0.005)	(0.008)	(0.001)	(0.025)	(0.007)
logTA	0.024***	0.034***	0.025***	0.036***	0.026***	0.038***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	−0.006	−0.043	0.000	−0.030	0.021	−0.002
	(0.876)	(0.355)	(0.990)	(0.509)	(0.580)	(0.972)
%OUTSIDE	0.070***	0.095***	0.069**	0.095***	0.070***	0.097***
	(0.009)	(0.002)	(0.010)	(0.002)	(0.009)	(0.002)
BRD_GENDER	0.034	0.047	0.037	0.050	0.035	0.049
	(0.382)	(0.293)	(0.343)	(0.254)	(0.360)	(0.268)
BRD_AGE	0.000	−0.000	0.000	−0.001	0.000	−0.001
	(0.931)	(0.678)	(0.949)	(0.639)	(0.961)	(0.638)
BRD_OWN	−0.004**	−0.005***	−0.004**	−0.005***	−0.004**	−0.005***
	(0.017)	(0.007)	(0.016)	(0.007)	(0.017)	(0.007)
BRD_TENURE	−0.006***	−0.007***	−0.006***	−0.007***	−0.006***	−0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
BRD_SEATS	−0.255***	−0.351***	−0.255***	−0.352***	−0.255***	−0.351***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.209	0.266	0.209	0.267	0.209	0.266
N	7427	7427	7427	7427	7427	7427

This table reports the results from the OLS regressions estimating the change in board reputation as proxied by the number of outside board seats held by all directors. All variables are defined in Appendix 1. p values in parentheses

*$p<0.10$, **$p<0.05$, ***$p<0.01$ (two-tailed tests)

Using this propensity score matched sample, we re-estimate Eqs. (3)–(6).[14] The regression results are reported in Table 9.

The estimated coefficients of *TA_SHELTER* are positive and significant in predicting both board reputation in models (1)–(2) ($p<0.05$ and $p<0.01$, respectively) and independent director reputation ($\Delta IND_{t|0+2|}$) in models (7)–(8) ($p<0.10$ and $p<0.05$, respectively). Further, *TA_ETR* is statistically significant in predicting $\Delta EXECEO_{t|0+2|,t|-1+2|}$ in models (17)–(18) ($p<0.05$ and $p<0.10$, respectively), consistent with the results in Table 7. Finally, in predicting $\Delta CEO_{t|0+2|,t|-1+2|}$, the estimated coefficient of *TA_ETR* is significant and positive ($p<0.01$) in models (19)–(20), consistent with the results in Table 8. Finally, *TA_ETR* also becomes significant in predicting CEO reputation in models (23)–(24). The coefficients and statistical significance of the other independent variables remain largely unchanged. Taken together, these regression results confirm our main regression results reported in Tables 4, 5, 6, 7, and 8.

Fama–Macbeth (1973) Estimation Method

To mitigate concerns of potential serial dependence of regression errors, we re-estimate the main regression models in Eqs. (3)–(6) by using the Fama and MacBeth (1973) estimation method.

As reported in Table 10, in models (1)–(12) the coefficients of *TA_SHELTER, TA_PUTB*, and *TA_ETR* are positive and significant in predicting changes in board ($\Delta BRD_{t|0+2|,t|-1+2|}$) and independent director reputation ($\Delta IND_{t|0+2|,t|-1+2|}$) ($p<0.10$ or better). Likewise, in

[14] The number of observations included in each regression model is subject to missing values in the control variables. Thus, the final N reported for each regression model may be smaller than the total number of pair-matched observations using the propensity score.

Table 5 Regression results—independent director reputation and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR	
	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.022	− 0.003	0.010	− 0.030	− 0.010	− 0.056
	(0.792)	(0.973)	(0.904)	(0.742)	(0.908)	(0.543)
TA_TAX	0.021**	0.034***	0.031***	0.039***	0.014	0.023**
	(0.045)	(0.003)	(0.001)	(0.000)	(0.112)	(0.018)
logTA	0.035***	0.046***	0.036***	0.049***	0.038***	0.052***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	− 0.027	− 0.057	− 0.018	− 0.041	0.003	− 0.008
	(0.574)	(0.307)	(0.695)	(0.454)	(0.954)	(0.893)
%OUTSIDE	0.126***	0.163***	0.123***	0.161***	0.127***	0.165***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
IND_GENDER	0.009	0.041	0.012	0.045	0.011	0.045
	(0.825)	(0.337)	(0.757)	(0.291)	(0.786)	(0.295)
IND_AGE	− 0.001	− 0.001	− 0.001	− 0.001	− 0.001	− 0.001
	(0.230)	(0.265)	(0.255)	(0.288)	(0.231)	(0.267)
IND_OWN	− 0.004	0.000	− 0.004	0.001	− 0.004	0.001
	(0.663)	(0.963)	(0.658)	(0.937)	(0.670)	(0.913)
IND_TENURE	− 0.007***	− 0.008***	− 0.007***	− 0.008***	− 0.007***	− 0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
IND_SEATS	− 0.311***	− 0.413***	− 0.312***	− 0.414***	− 0.311***	− 0.413***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.240	0.305	0.240	0.306	0.239	0.305
N	7422	7413	7422	7413	7422	7413

This table reports the results from the OLS regressions estimating the change in independent director reputation as proxied by the number of outside board seats held by independent directors. All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

predicting executive director reputation change, *TA_ETR* is positive and significant in models (17)–(18) ($p < 0.05$). The coefficient of *TA_SHELTER* is positively and significantly associated with $\Delta EXECEO_{t|-1+2|}$ in model (14) ($p < 0.01$). Further, *TA_PUTB* also becomes significant in predicting $\Delta EXECEO_{t|0,+2|,t|-1+2|}$ in models (15)–(16) ($p < 0.10$). Finally, *TA_ETR* is positively associated with changes in CEO reputation in models (23)–(24) ($p < 0.01$). Overall, these results further confirm our main regression results shown in Tables 4, 5, 6, 7, and 8.

Alternative Measures of Director Reputation

We next consider some alternative measures of board and independent director reputation in our additional analyses. Our original dependent variables $\Delta BRD_{t|0+2|,t|-1+2|}$ ($\Delta IND_{t|0+2|,t|-1+2|}$) capture the collective change in board (independent director) reputation caused by either (1) changes in individual directors' reputation, or (2) director turnover bringing different reputational capital onto the board. To disentangle these two causes of reputational change, we calculate alternative reputation variables $\Delta BRD^*_{t|0+2|,t|-1+2|}$ ($\Delta IND^*_{t|0+2|,t|-1+2|}$) by including only those directors (independent directors) who have remained on the board throughout the observation period |0 + 2| or |− 1 + 2| to isolate the changes in board (independent director) reputation caused by the same directors gaining or losing outside board seats rather than those instigated by director turnover. We re-estimate Eqs. (3) and (4) by using these alternative dependent variables.

In untabulated results, the *TA_SHELTER* coefficient is positively and significantly associated with $\Delta BRD^*_{t|0+2|,t|-1+2|}$ ($p < 0.05$). Similarly, *TA_PUTB* is positive and significant in predicting $\Delta BRD^*_{t|-1+2|}$, and *TA_ETR*

Table 6 Regression results—executive director (excluding CEO) reputation and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR	
	ΔEXE |0 + 2|	ΔEXE |− 1 + 2|	ΔEXE |0 + 2|	ΔEXE |− 1 + 2|	ΔEXE |0 + 2|	ΔEXE |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)
Constant	− 0.116	− 0.147	− 0.189	− 0.226	− 0.181	− 0.224
	(0.376)	(0.297)	(0.142)	(0.103)	(0.160)	(0.104)
TA_TAX	0.048**	0.056**	− 0.009	− 0.002	0.012	0.009
	(0.026)	(0.020)	(0.619)	(0.931)	(0.519)	(0.659)
logTA	0.016**	0.026***	0.024***	0.035***	0.023***	0.034***
	(0.017)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.050	− 0.024	0.087	0.017	0.098	0.027
	(0.592)	(0.832)	(0.353)	(0.879)	(0.314)	(0.817)
%OUTSIDE	0.244***	0.356***	0.251***	0.365***	0.248***	0.363***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EXE_GENDER	0.033	0.049	0.032	0.048	0.031	0.048
	(0.564)	(0.457)	(0.574)	(0.465)	(0.584)	(0.470)
EXE_AGE	0.002	0.002	0.002	0.002	0.002	0.001
	(0.171)	(0.291)	(0.160)	(0.292)	(0.173)	(0.300)
EXE_OWN	− 0.000	− 0.002	− 0.000	− 0.002	− 0.000	− 0.002
	(0.903)	(0.379)	(0.864)	(0.350)	(0.872)	(0.354)
EXE_TENURE	− 0.004***	− 0.005***	− 0.004***	− 0.005***	− 0.004***	− 0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EXE_SEATS	− 0.340***	− 0.445***	− 0.338***	− 0.443***	− 0.339***	− 0.444***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.199	0.252	0.198	0.251	0.198	0.251
N	4397	4361	4397	4361	4397	4361

This table reports the results from the OLS regressions estimating the change in executive director reputation as proxied by the number of outside board seats held by executive and linked directors (excluding the CEO). All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

is significantly associated with $\Delta BRD^*_{t|0+2|,t|-1+2|}$ ($p < 0.01$ and $p < 0.05$, respectively). In the untabulated results concerning the changes in independent director reputation ($\Delta IND^*_{t|0+2|,t|-1+2|}$), the *TA_SHELTER* coefficient is positive and significant ($p < 0.01$). The estimated coefficients of both *TA_PUTB* and *TA_ETR* also are positively and significantly associated with $\Delta IND^*_{t|-1+2|}$ ($p < 0.05$). Thus, these results confirm our main regression results given in Tables 4 and 5.

Alternative Measures of Tax Avoidance

As additional analyses, we also re-run our regression models in Eqs. (3)–(6) by using a series of non-change continuous *TA* variables (*SHELTER, P_UTB*, and *ETR*) in lieu of the *TA* dummy variables computed as per the procedures used by Donohoe and Knechel (2014) in our main analysis.

As reported in Table 11, *SHELTER* and *P_UTB* are both significant with positive coefficients in predicting the changes in board reputation ($p < 0.10$ in model (1) and $p < 0.01$ in models (2)–(4)). The estimated coefficient of *ETR* is also significant in predicting $\Delta BRD_{t|-1+2|}$ in model (6). Likewise, in the regressions predicting the changes in independent director reputation, *SHELTER* and *P_UTB* are also significant and positive ($p < 0.10$ in model (7) and $p < 0.01$ in models (8)–(10)). Further, in the regressions predicting the change in executive director reputation, both *P_UTB* and *ETR* have positive and significant estimated coefficients ($p < 0.10$ or better).[15] We finally observe that *ETR*

[15] We transform our *ETR* variable into negative values by multiplying it by − 1, so that the expected sign of the estimated coefficient of *ETR* is consistent with the other two proxies of tax avoidance, *SHELTER* and *P_UTB* (i.e., a higher value indicating a higher level of tax avoidance).

Table 7 Regression results—executive director (including CEO) reputation and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR	
	ΔEXECEO |0 + 2|	ΔEXECEO |− 1 + 2|	ΔEXECEO |0 + 2|	ΔEXECEO |− 1 + 2|	ΔEXECEO |0 + 2|	ΔEXECEO |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)
Constant	− 0.215**	− 0.153	− 0.241***	− 0.196*	− 0.254***	− 0.213**
	(0.019)	(0.138)	(0.007)	(0.051)	(0.005)	(0.033)
TA_TAX	0.027*	0.042***	0.013	0.018	0.039***	0.038***
	(0.064)	(0.010)	(0.281)	(0.202)	(0.001)	(0.005)
logTA	0.022***	0.029***	0.026***	0.035***	0.026***	0.036***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	− 0.024	− 0.072	− 0.008	− 0.046	0.038	− 0.001
	(0.700)	(0.296)	(0.902)	(0.502)	(0.544)	(0.992)
%OUTSIDE	0.316***	0.388***	0.317***	0.390***	0.316***	0.390***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EXECEO_GENDER	− 0.000	0.025	− 0.000	0.025	− 0.003	0.022
	(1.000)	(0.595)	(0.994)	(0.589)	(0.934)	(0.633)
EXECEO_AGE	0.001	− 0.001	0.001	− 0.001	0.001	− 0.001
	(0.401)	(0.336)	(0.436)	(0.300)	(0.467)	(0.286)
EXECEO_OWN	− 0.005***	− 0.007***	− 0.005***	− 0.007***	− 0.005***	− 0.007***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
EXECEO_TENURE	− 0.003***	− 0.003***	− 0.003***	− 0.003***	− 0.002***	− 0.003***
	(0.004)	(0.004)	(0.005)	(0.004)	(0.008)	(0.006)
EXECEO_SEATS	− 0.323***	− 0.445***	− 0.322***	− 0.444***	− 0.323***	− 0.445***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.168	0.243	0.168	0.242	0.169	0.243
N	7424	7410	7424	7410	7424	7410

This table reports the results from the OLS regressions estimating the change in executive director reputation as proxied by the number of outside board seats held by executive and linked directors (including the CEO). All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

is significant and positively associated with the changes in CEO reputation ($p < 0.01$ and $p < 0.05$) in models (23)–(24), respectively. Overall, these results pertaining to the tax-avoidance variables are similar to those from our main analysis reported in Tables 4, 5, 6, 7, and 8.

Alternative Levels Model Specification

To provide further evidence of the association between corporate tax avoidance and board and CEO reputation, we employ an alternative levels regression model specification. In particular, for the dependent variables, we measure the static levels of director and CEO reputation as proxied by the number outside board seats held in lead year + 1 and year + 2 in our additional analyses. Further, for the independent variables, we use continuous non-change proxies of tax avoidance in year 0 (*SHELTER, P_UTB*, and *ETR*). The results from the OLS regression are presented in Table 12.

In short, we find that all tax-avoidance variables are uniformly significant with positive estimated coefficients in predicting the levels of future director and CEO reputation across all regression models ($p < 0.01$).[16] Consequently, these additional levels regression model results further confirm our main regression results reported in Tables 4, 5, 6, 7 and 8 by showing that the associations between tax avoidance, director and executive reputation, and CEO reputation

[16] We also carry out additional analyses by re-specifying the levels model using dummy-dependent and dummy-independent variables. As per the calculation of the *TA* variables by Donohoe and Knechel (2014), we also compute the dependent variables of independent director, executive director, and CEO reputation as dummy variables. Our untabulated results show that the coefficients for the *TA* variables (*TA_SHELTER, TA_PUTB*, and *TA_ETR*) are uniformly significant in predicting the dummy reputation variables based on terciles computed in each year and industry ($p < 0.10$ or better).

Table 8 Regression results—CEO reputation and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR	
	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)
Constant	− 0.164*	− 0.245**	− 0.172**	− 0.268***	− 0.182**	− 0.287***
	(0.065)	(0.022)	(0.045)	(0.008)	(0.032)	(0.005)
TA_TAX	0.011	0.025	0.013	0.022	0.047***	0.051***
	(0.450)	(0.160)	(0.310)	(0.145)	(0.000)	(0.001)
logTA	0.020***	0.027***	0.021***	0.030***	0.022***	0.031***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	− 0.057	− 0.099	− 0.052	− 0.086	0.003	− 0.026
	(0.351)	(0.174)	(0.390)	(0.229)	(0.962)	(0.723)
%OUTSIDE	0.216***	0.312***	0.215***	0.313***	0.212***	0.311***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO_GENDER	− 0.035	− 0.035	− 0.034	− 0.035	− 0.035	− 0.035
	(0.286)	(0.350)	(0.290)	(0.355)	(0.279)	(0.352)
CEO_AGE	0.000	0.000	0.000	0.000	0.000	0.000
	(0.578)	(0.712)	(0.585)	(0.710)	(0.636)	(0.756)
CEO_OWN	− 0.005***	− 0.006***	− 0.005***	− 0.006***	− 0.005***	− 0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO_TENURE	− 0.004***	− 0.006***	− 0.004***	− 0.006***	− 0.004***	− 0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INTERNAL	− 0.011	− 0.004	− 0.010	− 0.003	− 0.010	− 0.002
	(0.330)	(0.773)	(0.366)	(0.848)	(0.386)	(0.862)
CEO_SEATS	− 0.206***	− 0.269***	− 0.206***	− 0.269***	− 0.207***	− 0.270***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.107	0.146	0.107	0.146	0.109	0.147
N	7427	6522	7427	6522	7427	6522

This table reports the results from the OLS regressions estimating the change in CEO reputation as proxied by the number of outside board seats held by the CEO. All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

are not spurious and are consistent based on different regression model specifications.[17]

Conclusion

This study investigates the impact of corporate tax avoidance on board of directors and CEO reputation. Our regression results show that when firms engage in tax-avoidance strategies, both independent directors and executive directors undergo positive changes in reputation as evidenced by the net gains in the number of outside directorships held. Our findings also indicate that CEOs experience improved reputation when their firms engage in less extreme forms of tax avoidance. Finally, our main results hold based on additional analyses.

This study makes the following important contributions to the literature. First, it improves our understanding about whether tax avoidance enhances or damages corporate reputation by using a novel empirical approach that captures both positive and negative reputational changes associated with tax avoidance. We extend prior research that has presented mixed evidence on the reputational impacts of tax avoidance (e.g., Austin and Wilson 2015; Gallemore et al. 2014; Chyz and Gaertner 2018) by reporting significant and consistent empirical evidence showing that tax avoidance is associated

[17] In addition, we carry out further analyses using levels regression model specifications based on the propensity score matching approach and the Fama–Macbeth (1973) estimation method. The untabulated results from these robustness tests are qualitatively similar to those reported in Table 12.

Table 9 Propensity score matching regression results—director and CEO reputation, and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR		TA_SHELTER		TA_PUTB		TA_ETR	
	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Constant	0.011	0.100	0.017	0.160	0.222**	0.249**	− 0.145	− 0.008	− 0.106	0.055	0.295**	0.321**
	(0.941)	(0.555)	(0.889)	(0.237)	(0.021)	(0.021)	(0.463)	(0.972)	(0.472)	(0.728)	(0.014)	(0.017)
TA_TAX	0.029**	0.041***	− 0.003	− 0.011	0.012	0.009	0.029*	0.043**	0.004	− 0.007	0.009	0.009
	(0.020)	(0.004)	(0.815)	(0.380)	(0.153)	(0.339)	(0.063)	(0.016)	(0.757)	(0.638)	(0.381)	(0.435)
logTA	0.027***	0.042***	0.015***	0.027***	0.028***	0.043***	0.040***	0.051***	0.023***	0.037***	0.039***	0.057***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.067	0.068	0.044	− 0.037	0.058	0.018	0.059	0.083	0.045	− 0.014	0.050	0.076
	(0.443)	(0.520)	(0.545)	(0.680)	(0.319)	(0.787)	(0.595)	(0.519)	(0.603)	(0.887)	(0.492)	(0.349)
%OUTSIDE	0.033	0.042	0.045	0.084	0.001	0.015	0.129**	0.124*	0.125**	0.162***	0.042	0.079
	(0.513)	(0.476)	(0.315)	(0.102)	(0.970)	(0.705)	(0.029)	(0.070)	(0.024)	(0.008)	(0.331)	(0.104)
GENDER	0.086	0.091	− 0.002	0.008	0.053	0.057	0.045	0.127	0.078	0.075	0.082	0.059
	(0.291)	(0.327)	(0.980)	(0.919)	(0.332)	(0.373)	(0.591)	(0.153)	(0.294)	(0.322)	(0.136)	(0.337)
AGE	0.002	− 0.001	0.003*	0.001	− 0.003*	− 0.003**	0.002	0.000	0.004*	0.001	− 0.005***	− 0.005***
	(0.329)	(0.737)	(0.100)	(0.807)	(0.066)	(0.030)	(0.407)	(0.891)	(0.072)	(0.629)	(0.004)	(0.002)
OWN	− 0.010***	− 0.013***	− 0.006**	− 0.008**	− 0.012***	− 0.013***	0.007	0.016	− 0.030**	− 0.011	− 0.007	− 0.007
	(0.004)	(0.000)	(0.050)	(0.020)	(0.000)	(0.000)	(0.682)	(0.335)	(0.035)	(0.409)	(0.561)	(0.546)
TENURE	− 0.008***	− 0.009***	− 0.007***	− 0.006***	− 0.006***	− 0.006***	− 0.010***	− 0.011***	− 0.009***	− 0.008***	− 0.007***	− 0.009***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
INTERNAL	− 0.266***	− 0.366***	− 0.238***	− 0.338***	− 0.246***	− 0.353***	− 0.310***	− 0.410***	− 0.301***	− 0.395***	− 0.302***	− 0.415***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SEATS	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.233	0.288	0.196	0.250	0.204	0.274	0.254	0.313	0.226	0.290	0.237	0.312
N	1942	1942	2759	2759	4119	4119	1942	1936	2758	2753	4115	4112
Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR		TA_SHELTER		TA_PUTB		TA_ETR	
	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Constant	− 0.291	− 0.279	0.059	0.246	− 0.421***	− 0.285**	− 0.443**	− 0.713***	0.021	0.050	− 0.366***	− 0.437***
	(0.209)	(0.268)	(0.710)	(0.172)	(0.001)	(0.049)	(0.043)	(0.009)	(0.892)	(0.794)	(0.004)	(0.004)

Table 9 (continued)

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR		TA_SHELTER		TA_PUTB		TA_ETR	
	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
TA_TAX	0.030	0.048*	−0.016	−0.025	0.032**	0.030*	0.075***	0.092***	0.004	−0.006	0.062***	0.064***
	(0.191)	(0.063)	(0.390)	(0.219)	(0.031)	(0.067)	(0.001)	(0.001)	(0.847)	(0.777)	(0.000)	(0.000)
logTA	0.031***	0.052***	0.013*	0.022***	0.038***	0.046***	0.028***	0.033**	0.015**	0.023***	0.028***	0.033***
	(0.006)	(0.000)	(0.073)	(0.006)	(0.000)	(0.000)	(0.008)	(0.010)	(0.030)	(0.006)	(0.000)	(0.000)
ROA	0.052	0.044	0.037	−0.007	0.106	0.024	0.104	0.129	0.024	−0.062	0.129	0.124
	(0.736)	(0.795)	(0.723)	(0.952)	(0.247)	(0.817)	(0.532)	(0.512)	(0.813)	(0.608)	(0.156)	(0.228)
%OUTSIDE	0.336***	0.364***	0.270***	0.356***	0.298***	0.332***	0.127	0.311***	0.199***	0.276***	0.205***	0.315***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.106)	(0.001)	(0.005)	(0.001)	(0.000)	(0.000)
GENDER	0.039	0.128	−0.084	−0.016	−0.099*	−0.090	0.214**	0.067	−0.068	−0.058	−0.137***	−0.173***
	(0.706)	(0.331)	(0.111)	(0.831)	(0.053)	(0.172)	(0.040)	(0.683)	(0.262)	(0.396)	(0.002)	(0.000)
AGE	−0.001	−0.005*	0.001	−0.003	0.000	−0.002	−0.000	−0.000	0.001	−0.001	0.001	0.002
	(0.799)	(0.054)	(0.475)	(0.192)	(0.786)	(0.249)	(0.988)	(0.865)	(0.729)	(0.718)	(0.283)	(0.263)
OWN	−0.007**	−0.014***	−0.004	−0.007**	−0.003	−0.007***	−0.009***	−0.010***	−0.005**	−0.008***	−0.007***	−0.008***
	(0.039)	(0.000)	(0.178)	(0.027)	(0.118)	(0.003)	(0.000)	(0.000)	(0.022)	(0.000)	(0.000)	(0.000)
TENURE	−0.002	−0.001	−0.005***	−0.005***	−0.002*	−0.003*	−0.003	−0.006**	−0.007***	−0.008***	−0.005***	−0.006***
	(0.301)	(0.738)	(0.003)	(0.006)	(0.057)	(0.072)	(0.123)	(0.013)	(0.000)	(0.000)	(0.000)	(0.000)
INTERNAL	−0.309***	−0.430***	−0.311***	−0.455***	−0.336***	−0.463***	−0.029	−0.023	0.020	0.041*	−0.019	0.020
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.258)	(0.447)	(0.312)	(0.087)	(0.239)	(0.278)
SEATS	–	–	–	–	–	–	−0.203***	−0.245***	−0.208***	−0.279***	−0.232***	−0.283***
	–	–	–	–	–	–	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.152	0.216	0.153	0.258	0.173	0.254	0.111	0.139	0.105	0.159	0.136	0.170
N	1942	1939	2758	2754	4117	4114	1942	1665	2759	2384	4119	3606

This table reports the results from the OLS regressions using a sample matched by propensity scores based on the predicted likelihood of high tax avoidance from the first-stage model. All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

Table 10 Fama–Macbeth regression results—director and CEO reputation, and tax avoidance

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR		TA_SHELTER		TA_PUTB		TA_ETR	
	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Constant	0.044	0.073	0.034	0.049	0.017	0.026	0.062	0.039	0.045	0.006	0.019	−0.023
	(0.656)	(0.505)	(0.732)	(0.676)	(0.863)	(0.821)	(0.548)	(0.722)	(0.667)	(0.957)	(0.859)	(0.840)
TA_TAX	0.017*	0.031**	0.020**	0.028***	0.017***	0.021**	0.023**	0.038***	0.032***	0.041***	0.014*	0.022**
	(0.070)	(0.013)	(0.011)	(0.000)	(0.005)	(0.011)	(0.048)	(0.008)	(0.001)	(0.000)	(0.066)	(0.025)
logTA	0.023***	0.032***	0.025***	0.036***	0.026***	0.038***	0.033***	0.045***	0.035***	0.048***	0.038***	0.051***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	−0.015	−0.064	−0.005	−0.046	0.022	−0.012	−0.036	−0.086	−0.022	−0.064	0.004	−0.025
	(0.719)	(0.274)	(0.914)	(0.436)	(0.583)	(0.827)	(0.467)	(0.240)	(0.672)	(0.379)	(0.922)	(0.693)
%OUTSIDE	0.066***	0.090***	0.066***	0.091***	0.067***	0.093***	0.137***	0.175***	0.134***	0.173***	0.138***	0.178***
	(0.010)	(0.003)	(0.009)	(0.004)	(0.009)	(0.003)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
GENDER	0.037	0.055	0.039	0.060	0.038	0.059	0.005	0.037	0.008	0.041	0.007	0.042
	(0.396)	(0.211)	(0.356)	(0.187)	(0.388)	(0.200)	(0.879)	(0.347)	(0.787)	(0.306)	(0.824)	(0.307)
AGE	−0.000	−0.001	−0.000	−0.001	−0.000	−0.001	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002
	(0.829)	(0.540)	(0.749)	(0.481)	(0.744)	(0.483)	(0.162)	(0.225)	(0.169)	(0.228)	(0.165)	(0.210)
OWN	−0.005**	−0.006***	−0.005**	−0.006***	−0.005**	−0.006**	−0.006	−0.002	−0.006	−0.001	−0.006	−0.001
	(0.017)	(0.009)	(0.016)	(0.009)	(0.018)	(0.011)	(0.421)	(0.736)	(0.428)	(0.798)	(0.440)	(0.906)
TENURE	−0.006***	−0.007***	−0.006***	−0.006***	−0.006***	−0.006***	−0.006***	−0.007***	−0.006***	−0.007***	−0.006***	−0.007***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.004)	(0.000)	(0.004)	(0.000)	(0.004)	(0.000)
INTERNAL	−0.248***	−0.346***	−0.248***	−0.346***	−0.247***	−0.345***	−0.303***	−0.408***	−0.304***	−0.409***	−0.302***	−0.407***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SEATS	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.190	0.258	0.192	0.259	0.190	0.257	0.225	0.298	0.227	0.299	0.224	0.296
N	7427	7427	7427	7427	7427	7427	7422	7413	7422	7413	7422	7413
Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR		TA_SHELTER		TA_PUTB		TA_ETR	
	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Constant	−0.208*	−0.145	−0.224**	−0.192	−0.240**	−0.214*	−0.142	−0.229*	−0.163	−0.252*	−0.179*	−0.282**
	(0.070)	(0.232)	(0.049)	(0.138)	(0.028)	(0.086)	(0.203)	(0.094)	(0.116)	(0.055)	(0.084)	(0.034)

Table 10 (continued)

Dependent variable	TA_SHELTER		TA_PUTB		TA_ETR		TA_SHELTER		TA_PUTB		TA_ETR	
	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
TA_TAX	0.027	0.049***	0.016*	0.022*	0.042**	0.039**	0.016	0.032	0.014	0.023	0.051***	0.052***
	(0.122)	(0.006)	(0.099)	(0.099)	(0.014)	(0.016)	(0.454)	(0.181)	(0.134)	(0.130)	(0.000)	(0.000)
logTA	0.024***	0.030***	0.026***	0.036***	0.027***	0.037***	0.020**	0.028***	0.022***	0.031***	0.023***	0.033***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.021)	(0.009)	(0.001)	(0.001)	(0.001)	(0.000)
ROA	− 0.031	− 0.109	− 0.015	− 0.076	0.032	− 0.027	− 0.057	− 0.111	− 0.048	− 0.088	0.014	− 0.022
	(0.653)	(0.120)	(0.825)	(0.290)	(0.652)	(0.720)	(0.318)	(0.176)	(0.369)	(0.238)	(0.768)	(0.752)
%OUTSIDE	0.309***	0.392***	0.309***	0.393***	0.308***	0.395***	0.201***	0.304***	0.202***	0.300***	0.199***	0.302***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GENDER	− 0.012	0.046	− 0.015	0.046	− 0.017	0.042	− 0.065	− 0.069	− 0.067	− 0.066	− 0.073	− 0.072
	(0.878)	(0.530)	(0.838)	(0.543)	(0.811)	(0.571)	(0.226)	(0.145)	(0.222)	(0.149)	(0.181)	(0.129)
AGE	0.000	− 0.002**	0.000	− 0.002**	0.000	− 0.002**	0.000	0.000	0.000	0.000	0.000	0.000
	(0.774)	(0.043)	(0.936)	(0.044)	(0.950)	(0.044)	(0.783)	(0.871)	(0.832)	(0.862)	(0.905)	(0.928)
OWN	− 0.005***	− 0.007***	− 0.005***	− 0.007***	− 0.005***	− 0.007***	− 0.004***	− 0.005***	− 0.004***	− 0.005***	− 0.004***	− 0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TENURE	− 0.002*	− 0.002	− 0.002*	− 0.002	− 0.001	− 0.002	− 0.004***	− 0.006***	− 0.004***	− 0.006***	− 0.004***	− 0.006***
	(0.087)	(0.104)	(0.098)	(0.137)	(0.135)	(0.148)	(0.001)	(0.000)	(0.001)	(0.000)	(0.002)	(0.000)
INTERNAL	− 0.315***	− 0.437***	− 0.313***	− 0.435***	− 0.315***	− 0.437***	− 0.011	− 0.004	− 0.009	− 0.002	− 0.009	− 0.003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.274)	(0.780)	(0.367)	(0.901)	(0.342)	(0.867)
SEATS	–	–	–	–	–	–	− 0.206***	− 0.271***	− 0.206***	− 0.271***	− 0.207***	− 0.271***
	–	–	–	–	–	–	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.187	0.259	0.187	0.259	0.188	0.259	0.131	0.172	0.131	0.174	0.132	0.173
N	7424	7410	7424	7410	7424	7410	7427	6522	7427	6522	7427	6522

This table reports the results from the Fama–MacBeth regressions estimating the change in director and CEO reputation. All variables are defined in Appendix 1. *p* values in parentheses
*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

Table 11 Regression results—continuous tax-avoidance variables

Dependent variable	SHELTER		P_UTB		ETR		SHELTER		P_UTB		ETR	
	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔBRD |0 + 2|	ΔBRD |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|	ΔIND |0 + 2|	ΔIND |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Constant	0.014	0.031	0.005	0.008	−0.001	0.003	0.023	0.000	0.006	−0.037	−0.004	−0.043
	(0.838)	(0.696)	(0.940)	(0.914)	(0.992)	(0.971)	(0.784)	(0.998)	(0.946)	(0.690)	(0.962)	(0.637)
TAX	0.005*	0.009***	2.626***	3.139***	0.032	0.048**	0.007*	0.012***	3.479***	3.950***	0.016	0.038
	(0.070)	(0.007)	(0.000)	(0.000)	(0.129)	(0.045)	(0.061)	(0.004)	(0.000)	(0.000)	(0.535)	(0.188)
logTA	0.023***	0.033***	0.024***	0.036***	0.027***	0.038***	0.034***	0.045***	0.035***	0.049***	0.038***	0.052***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	−0.015	−0.057	−0.005	−0.036	0.014	−0.011	−0.038	−0.076	−0.025	−0.047	−0.008	−0.022
	(0.708)	(0.227)	(0.892)	(0.426)	(0.720)	(0.811)	(0.447)	(0.184)	(0.600)	(0.389)	(0.874)	(0.693)
%OUTSIDE	0.070***	0.096***	0.066**	0.092***	0.072***	0.099***	0.127***	0.165***	0.120***	0.158***	0.129***	0.169***
	(0.009)	(0.002)	(0.014)	(0.003)	(0.007)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GENDER	0.034	0.046	0.036	0.049	0.034	0.047	0.009	0.041	0.013	0.044	0.009	0.042
	(0.379)	(0.297)	(0.345)	(0.269)	(0.380)	(0.284)	(0.822)	(0.339)	(0.750)	(0.300)	(0.819)	(0.324)
AGE	0.000	−0.001	0.000	−0.001	0.000	−0.000	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.938)	(0.658)	(0.929)	(0.647)	(0.943)	(0.661)	(0.231)	(0.269)	(0.292)	(0.320)	(0.228)	(0.264)
OWN	−0.004**	−0.005***	−0.004**	−0.005***	−0.004**	−0.005***	−0.004	0.001	−0.004	0.001	−0.004	0.001
	(0.019)	(0.008)	(0.019)	(0.008)	(0.015)	(0.006)	(0.700)	(0.914)	(0.691)	(0.886)	(0.661)	(0.941)
TENURE	−0.006***	−0.007***	−0.006***	−0.007***	−0.006***	−0.007***	−0.007***	−0.008***	−0.007***	−0.008***	−0.007***	−0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INTERNAL	−0.254***	−0.351***	−0.256***	−0.353***	−0.254***	−0.350***	−0.311***	−0.413***	−0.313***	−0.415***	−0.310***	−0.412***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SEATS	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.209	0.266	0.210	0.268	0.209	0.266	0.240	0.305	0.241	0.307	0.239	0.305
N	7427	7427	7427	7427	7427	7427	7422	7413	7422	7413	7422	7413
Dependent variable	SHELTER		P_UTB		ETR		SHELTER		P_UTB		ETR	
	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Constant	−0.233**	−0.172*	−0.237***	−0.190*	−0.219**	−0.184*	−0.165*	−0.248**	−0.168**	−0.272***	−0.152*	−0.253**
	(0.012)	(0.099)	(0.008)	(0.059)	(0.015)	(0.069)	(0.064)	(0.019)	(0.049)	(0.007)	(0.075)	(0.014)

Table 11 (continued)

Dependent variable	SHELTER		P_UTB		ETR		SHELTER		P_UTB		ETR	
	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔEXE CEO |0 + 2|	ΔEXE CEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|	ΔCEO |0 + 2|	ΔCEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
TAX	0.004	0.009	1.833*	2.498**	0.104***	0.092**	0.003	0.007	2.211**	1.985	0.094***	0.101**
	(0.396)	(0.114)	(0.068)	(0.027)	(0.004)	(0.022)	(0.492)	(0.213)	(0.031)	(0.101)	(0.007)	(0.018)
logTA	0.024***	0.031***	0.025***	0.034***	0.027***	0.036***	0.020***	0.027***	0.020***	0.030***	0.022***	0.032***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	− 0.020	− 0.074	− 0.012	− 0.051	0.025	− 0.016	− 0.062	− 0.108	− 0.058	− 0.088	− 0.022	− 0.052
	(0.749)	(0.292)	(0.850)	(0.453)	(0.690)	(0.819)	(0.333)	(0.149)	(0.340)	(0.216)	(0.720)	(0.477)
%OUTSIDE	0.319***	0.391***	0.315***	0.387***	0.320***	0.394***	0.217***	0.314***	0.212***	0.312***	0.218***	0.317***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GENDER	− 0.001	0.025	− 0.000	0.025	− 0.003	0.022	− 0.034	− 0.034	− 0.033	− 0.034	− 0.035	− 0.037
	(0.988)	(0.590)	(0.999)	(0.592)	(0.943)	(0.630)	(0.292)	(0.370)	(0.304)	(0.368)	(0.278)	(0.330)
AGE	0.001	− 0.001	0.001	− 0.001	0.001	− 0.001	0.000	0.000	0.000	0.000	0.000	0.000
	(0.410)	(0.323)	(0.451)	(0.278)	(0.442)	(0.313)	(0.586)	(0.722)	(0.581)	(0.706)	(0.600)	(0.733)
OWN	− 0.005***	− 0.007***	− 0.005***	− 0.007***	− 0.005***	− 0.007***	− 0.005***	− 0.006***	− 0.005***	− 0.006***	− 0.005***	− 0.006***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TENURE	− 0.003***	− 0.003***	− 0.003***	− 0.003***	− 0.003***	− 0.003***	− 0.004***	− 0.006***	− 0.004***	− 0.006***	− 0.004***	− 0.006***
	(0.004)	(0.004)	(0.005)	(0.005)	(0.006)	(0.004)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INTERNAL	− 0.322***	− 0.444***	− 0.322***	− 0.444***	− 0.322***	− 0.444***	− 0.011	− 0.004	− 0.010	− 0.002	− 0.011	− 0.003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.336)	(0.789)	(0.407)	(0.865)	(0.353)	(0.825)
SEATS	–	–	–	–	–	–	− 0.206***	− 0.269***	− 0.207***	− 0.269***	− 0.207***	− 0.269***
	–	–	–	–	–	–	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	0.168	0.242	0.168	0.243	0.168	0.243	0.107	0.146	0.107	0.146	0.108	0.146
N	7424	7410	7424	7410	7424	7410	7427	6522	7427	6522	7427	6522

This table reports the results from the OLS regressions that employ continuous tax-avoidance variables in estimating the change in director and CEO reputation. All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

Table 12 Regression results—levels regression model

Dependent variable	SHELTER		P_UTB		ETR		SHELTER		P_UTB		ETR	
	BRD |0 + 2|	BRD |− 1 + 2|	BRD |0 + 2|	BRD |− 1 + 2|	BRD |0 + 2|	BRD |− 1 + 2|	IND |0 + 2|	IND |− 1 + 2|	IND |0 + 2|	IND |− 1 + 2|	IND |0 + 2|	IND |− 1 + 2|
Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Constant	− 1.510***	− 1.290***	− 1.580***	− 1.337***	− 1.612***	− 1.369***	− 1.257***	− 1.055***	− 1.349***	− 1.116***	− 1.370***	− 1.138***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TAX	0.026***	0.022***	7.643***	7.925***	0.086***	0.093***	0.029***	0.022***	8.686***	9.037***	0.089**	0.088**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)	(0.005)	(0.000)	(0.000)	(0.000)	(0.000)	(0.023)	(0.021)
logTA	0.125***	0.123***	0.133***	0.129***	0.140***	0.136***	0.137***	0.136***	0.147***	0.142***	0.155***	0.150***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	− 0.089	− 0.119*	− 0.021	− 0.067	0.031	− 0.012	− 0.130*	− 0.156**	− 0.054	− 0.104	0.001	− 0.047
	(0.138)	(0.053)	(0.709)	(0.251)	(0.589)	(0.844)	(0.068)	(0.033)	(0.424)	(0.135)	(0.983)	(0.504)
%OUTSIDE	0.621***	0.585***	0.608***	0.570***	0.630***	0.593***	0.633***	0.598***	0.616***	0.578***	0.643***	0.606***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GENDER	0.298***	0.291***	0.304***	0.297***	0.298***	0.292***	0.345***	0.282***	0.353***	0.290***	0.347***	0.284***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	0.017***	0.014***	0.017***	0.014***	0.017***	0.014***	0.011***	0.008***	0.011***	0.009***	0.011***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OWN	− 0.009***	− 0.010***	− 0.009***	− 0.010***	− 0.009***	− 0.011***	0.014	0.011	0.013	0.010	0.012	0.009
	(0.008)	(0.001)	(0.006)	(0.001)	(0.005)	(0.001)	(0.287)	(0.377)	(0.333)	(0.403)	(0.359)	(0.443)
TENURE	− 0.027***	− 0.026***	− 0.027***	− 0.025***	− 0.026***	− 0.025***	− 0.026***	− 0.025***	− 0.026***	− 0.025***	− 0.026***	− 0.024***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INTERNAL	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	7371	7427	7371	7427	7371	7427	7366	7422	7366	7422	7366	7422
N	0.338	0.330	0.341	0.335	0.336	0.329	0.254	0.247	0.257	0.252	0.252	0.246
Dependent variable	SHELTER		P_UTB		ETR		SHELTER		P_UTB		ETR	
	EXE CEO |0 + 2|	EXE CEO |− 1 + 2|	EXE CEO |0 + 2|	EXE CEO |− 1 + 2|	EXE CEO |0 + 2|	EXE CEO |− 1 + 2|	CEO |0 + 2|	CEO |− 1 + 2|	CEO |0 + 2|	CEO |− 1 + 2|	CEO |0 + 2|	CEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Constant	− 1.479***	− 1.344***	− 1.592***	− 1.438***	− 1.601***	− 1.430***	− 1.514***	− 1.399***	− 1.643***	− 1.517***	− 1.634***	− 1.497***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TAX	0.033***	0.028***	5.701***	4.837***	0.128***	0.159***	0.033***	0.031***	5.550***	5.629***	0.142**	0.177***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.012)	(0.002)

Table 12 (continued)

Dependent variable	SHELTER		P_UTB		ETR		SHELTER		P_UTB		ETR	
	EXE CEO |0 + 2|	EXE CEO |− 1 + 2|	EXE CEO |0 + 2|	EXE CEO |− 1 + 2|	EXE CEO |0 + 2|	EXE CEO |− 1 + 2|	CEO |0 + 2|	CEO |− 1 + 2|	CEO |0 + 2|	CEO |− 1 + 2|	CEO |0 + 2|	CEO |− 1 + 2|
Models	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
logTA	0.083***	0.085***	0.098***	0.098***	0.103***	0.102***	0.076***	0.078***	0.092***	0.092***	0.097***	0.097***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	−0.134	−0.160*	−0.031	−0.074	0.026	−0.010	−0.067	−0.157*	0.037	−0.062	0.099	0.011
	(0.105)	(0.053)	(0.694)	(0.359)	(0.742)	(0.899)	(0.471)	(0.091)	(0.674)	(0.486)	(0.273)	(0.906)
%OUTSIDE	0.581***	0.664***	0.576***	0.659***	0.593***	0.673***	0.560***	0.621***	0.558***	0.617***	0.572***	0.631***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GENDER	0.142***	0.145***	0.141***	0.145***	0.136**	0.140**	0.312***	0.262***	0.309***	0.260***	0.305***	0.256***
	(0.008)	(0.009)	(0.008)	(0.009)	(0.010)	(0.012)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	0.018***	0.014***	0.018***	0.014***	0.018***	0.014***	0.016***	0.014***	0.016***	0.014***	0.016***	0.014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OWN	−0.007***	−0.009***	−0.007***	−0.009***	−0.007***	−0.009***	−0.017***	−0.017***	−0.016***	−0.017***	−0.017***	−0.017***
	(0.007)	(0.000)	(0.004)	(0.000)	(0.005)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TENURE	−0.008***	−0.008***	−0.008***	−0.008***	−0.008***	−0.008***	0.004**	0.001	0.004**	0.001	0.004**	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.011)	(0.546)	(0.012)	(0.572)	(0.012)	(0.562)
INTERNAL	–	–	–	–	–	–	0.068***	0.054***	0.072***	0.058***	0.069***	0.055***
	–	–	–	–	–	–	(0.000)	(0.002)	(0.000)	(0.001)	(0.000)	(0.002)
INDUSTRY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R^2	7368	7424	7368	7424	7368	7424	7347	7427	7347	7427	7347	7427
N	0.142	0.143	0.141	0.142	0.140	0.142	0.116	0.116	0.115	0.115	0.114	0.115

This table reports the results from the OLS regressions that employ continuous tax-avoidance variables in estimating the levels of director and CEO reputation. All variables are defined in Appendix 1. *p* values in parentheses

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$ (two-tailed tests)

with improved board and CEO reputation. Second, this study uses several well-known tax-avoidance proxies to capture a range of tax-avoidance practices, and finds that they have different impacts on independent director, CEO, and executive director reputations. In particular, independent director reputation is positively associated with both aggressive and less aggressive forms of tax avoidance, contrary to executive directors who undergo improvements in reputation only when their firms engage in more aggressive forms of tax avoidance, while improvements in CEO reputation are only linked to less aggressive forms of tax avoidance. Third, we also contribute to the literature by showing that tax avoidance, like many other forms of corporate (mis)conduct, does have considerable reputational consequences. However, unlike securities misconduct which harms shareholders' interests, tax avoidance gives rise to positive reputational effects in line with the shareholder-centric view that minimizing tax payments increases firm value. Finally, our results provide some valuable insights for policymakers, regulators, and tax authorities who aim to understand the incentives and disincentives that either drive or deter corporate tax avoidance.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no competing interests.

Ethical approval This paper does not contain any studies with human participants performed by any of the authors.

Appendix 1: Variable Definitions

Variable name	Variable definition
ΔBRD|0 + 2|	The change in the average number of external board seats held by all directors, from year 0 to year + 2, as a measure of the change in the collective reputation of the board
ΔBRD|− 1 + 2|	The change in the average number of external board seats held by all directors, from year − 1 to year + 2, as a measure of the change in the collective reputation of the board
ΔIND|0 + 2|	The change in the average number of external board seats held by independent directors, from year 0 to year + 2, as a measure of the change in the collective reputation of independent directors on the board
ΔIND|− 1 + 2|	The change in the average number of external board seats held by independent directors, from year − 1 to year + 2, as a measure of the change in the collective reputation of independent directors on the board
ΔEXE|0 + 2|	The change in the average number of external board seats held by executive and linked directors (excluding the CEO), from year 0 to year + 2, as a measure of the change in the collective reputation of executive directors on the board
ΔEXE|− 1 + 2|	The change in the average number of external board seats held by executive and linked directors (excluding the CEO), from year − 1 to year + 2, as a measure of the change in the collective reputation of executive directors on the board
ΔEXECEO|0 + 2|	The change in the average number of external board seats held by executive and linked directors (including the CEO), from year 0 to year + 2, as an alternative measure of the change in the collective reputation of executive directors on the board
ΔEXECEO|− 1 + 2|	The change in the average number of external board seats held by executive and linked directors (including the CEO), from year − 1 to year + 2, as an alternative measure of the change in the collective reputation of executive directors on the board
ΔCEO|0 + 2|	The change in the number of external board seats held by the CEO from year 0 to year + 2, as a measure of the change in CEO reputation
ΔCEO|− 1 + 2|	The change in the number of external board seats held by the CEO from year 0 to year + 2, as a measure of the change in CEO reputation
ΔBRD*|0 + 2|	The change in the number of external board seats held by all directors who remain on the board from year 0 to year + 2, scaled by the number of these directors in year 0
ΔBRD*|− 1 + 2|	The change in the number of external board seats held by all directors who remain on the board from year − 1 to year + 2, scaled by the number of these directors in year − 1
ΔIND*|0 + 2|	The change in the number of external board seats held by independent directors who remain on the board from year 0 to year + 2, scaled by the number of these independent directors in year 0
ΔIND*|− 1 + 2|	The change in the number of external board seats held by independent directors who remain on the board from year − 1 to year + 2, scaled by the number of these independent directors in year − 1

Variable name	Variable definition
SHELTER	Propensity of tax sheltering calculated by using the following model obtained from Wilson's (2009) study: $SHELTER = -4.30 + 6.63 * BTD - 1.72 * LEV + 0.66 * SIZE + 2.26 * ROA + 1.62 * FOREIGN\_INCOME + 1.56 * RD$, where *BTD* = book-tax difference: book income less taxable income scaled by total assets; *LEV* = long-term debt scaled by total assets; *SIZE* = log of total assets; ROA = net-income scaled by total assets; *FOREIGN_INCOME* = a dummy variable, coded 1 for firms with foreign income, otherwise 0; and *RD* = research and development (R&D) expenses scaled by total assets
TA_SHELTER	Dummy variable denoting tax aggressiveness, which is assigned the value of one if the firm falls into the highest tercile of *SHELTER* by year within a two-digit GICS industry, and zero otherwise
P_UTB	Predicted unrecognized tax benefits computed from the following equation obtained from the study by Rego and Wilson (2012): $P\_UTB = -0.004 + 0.011 * ROA + 0.001 * SIZE + 0.010 * FOR\_SALE + 0.0928 * RD - 0.002 * DISC\_ACCR + 0.003 * LEV + 0.000 * MB + 0.014 * SGA - 0.018 * SALES\_GR$, where *ROA* = net-income scaled by total assets; *SIZE* = log of total assets; *FOR_SALE* = foreign sales scaled by total sales; *RD* = R&D expenses scaled by total assets; *DISC_ACCR* = discretionary accruals, computed using the performance-adjusted modified Jones (1991) model; *LEV* = long-term debt scaled by total assets; MB = the market-to-book ratio; *SGA* = selling and general administrative expenses; and *SALES_GR* = annual growth rate in sales
TA_PUTB	Dummy variable denoting tax aggressiveness, which is assigned the value of one if the firm falls into the highest tercile of *P_UTB* by year within a two-digit Global Industry Classification Standard industry, and zero otherwise
ETR	Effective tax rate calculated as tax liability divided by pre-tax accounting income, multiplied by − 1
TA_ETR	Dummy variable denoting tax aggressiveness, which is assigned the value of one if the firm falls into the lowest tercile of *ETR* by year within a two-digit Global Industry Classification Standard industry, and zero otherwise
BRD_GENDER	Proportion of female directors amongst all directors on the board at the beginning of the observation period year 0 (or year − 1)
BRD_AGE	Average age of all directors on the board at the beginning of the observation period year 0 (or year − 1)
BRD_OWN	Average percentage point of common shares outstanding owned by all directors at the beginning of the observation period year 0 (or year − 1)
BRD_TENURE	Average number of years of service in the firm for all directors on the board at the beginning of the observation period year 0 (or year − 1)
BRD_SEATS	Average number of external board seats in other firms held by all directors on the board at the beginning of the observation period year 0 (or year − 1)
IND_GENDER	Proportion of female directors amongst independent directors on the board at the beginning of the observation period year 0 (or year − 1)
IND_AGE	Average age of independent directors on the board at the beginning of the observation period year 0 (or year − 1)
IND_OWN	Average percentage point of common shares outstanding owned by independent directors at the beginning of the observation period year 0 (or year − 1)
IND_TENURE	Average number of years of service in the firm for independent directors on the board at the beginning of the observation period year 0 (or year − 1)
IND_SEATS	Average number of external board seats in other firms held by independent directors on the board at the beginning of the observation period year 0 (or year − 1)
EXE_GENDER	Proportion of female directors amongst executive and linked directors on the board (excluding the CEO) at the beginning of the observation period year 0 (or year − 1)
EXE_AGE	Average age of executive and linked directors on the board (excluding the CEO) at the beginning of the observation period year 0 (or year − 1)
EXE_OWN	Average percentage point of common shares outstanding owned by executive and linked directors on the board (excluding the CEO), at the beginning of the observation period year 0 (or year − 1)
EXE_TENURE	Average number of years of service in the firm for executive and linked directors on the board (excluding the CEO) at the beginning of the observation period year 0 (or year − 1)
EXE_SEATS	Average number of external board seats in other firms held by executive and linked directors on the board (excluding the CEO) at the beginning of the observation period year 0 (or year − 1)
EXECEO_GENDER	Proportion of female directors amongst executive and linked directors on the board (including the CEO) at the beginning of the observation period year 0 (or year − 1)
EXECEO_AGE	Average age of executive and linked directors on the board (including the CEO) at the beginning of the observation period year 0 (or year − 1)
EXECEO_OWN	Average percentage point of common shares outstanding owned by executive and linked directors on the board (including the CEO), at the beginning of the observation period year 0 (or year − 1)

Variable name	Variable definition
EXECEO_TENURE	Average number of years of service in the firm for executive and linked directors on the board (including the CEO) at the beginning of the observation period year 0 (or year − 1)
EXECEO_SEATS	Average number of external board seats in other firms held by executive and linked directors on the board (including the CEO) at the beginning of the observation period year 0 (or year − 1)
CEO_GENDER	Dummy variable equals one if the CEO is female, and zero otherwise
CEO_AGE	The age of the CEO in year 0
CEO_OWN	The percentage point of common shares outstanding owned by the CEO, calculated as the number of shares owned by the CEO scaled by the number of total common shares outstanding in year 0
CEO_TENURE	The number of years during which the CEO has served in the current capacity as at year 0
INTERNAL	Dummy variable equals one if the CEO is internally appointed (i.e., having been employed by the firm for a period of 12 months or longer prior to his or her appointment as the CEO), and zero otherwise
CEO_SEATS	The number of existing board seats in other firms held by the CEO as at year 0 (or year − 1)
logTA	Natural logarithm of total assets in year − 1
ROA	Return on assets for year − 1, measured as the ratio of income before extraordinary items to the average of total assets for the year
%OUTSIDE	Proportion of independent directors on the board (number of independent directors on the board in year − 1, scaled by the total number of directors on the board in year − 1)
SIZE	Natural logarithm of market value of equity at the beginning of year 0
DISC_ACCR	Discretionary accruals in year 0 computed using the performance-adjusted modified Jones (1991) model
NOL	Dummy variable equal to one if there is a tax loss carry forward during year 0 and zero otherwise
CNOL	Change in tax loss carry forward from year − 1 to year 0 scaled by total assets at the beginning of the year
EQINC	Equity income for year 0 scaled by total assets at the beginning of the year
FINC	Pre-tax foreign income for year 0 scaled by total assets at the beginning of the year
RD	Research and development expense for year 0 scaled by total assets at the beginning of the year
LEV	Long-term debt-to-asset ratio at the end of year 0
BTM	Book-to-market ratio at the end of year 0, measured as book value of equity divided by market value of equity
PPE	Net property plant and equipment for year 0 scaled by total assets at the beginning of the year
ROA0	Return on assets for year 0, measured as the ratio of income before extraordinary items to the average of total assets for the year
CASH	Cash holding at the end of year 0 divided by total assets at the beginning of the year
DEPRE	Depreciation and amortization expense for year 0 divided by total assets at the beginning of the year
BIG4	Dummy variable equals one if the firm is audited by one of the Big 4 accounting firms, and zero otherwise
SECTIER	Dummy variable equals one if the firm is audited by one of the second-tier accounting firms: Grant Thornton or BDO Seidman, and zero otherwise

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