



Journal of Applied Economics and Business Studies (JAEBS)

Journal homepage: <https://pepri.edu.pk/jaeps>
ISSN (Print): 2523-2614
ISSN (Online) 2663-693X



Tax Aggressiveness, Tunneling and Firm Value: Interactive Effect of Corporate Governance in Business Groups

Hamid Ullah^{1*}, Hamid Ali Shah², Sajjad Ahmad Khan³

¹ Assistant Professor (Finance), Department of Management Sciences, Islamia College

² Assistant Professor (Finance), Quaid-E-Azam College Peshawar, University of Peshawar

³ Director, Institute of Management Studies, University of Peshawar

ABSTRACT

This study extends the literature on tax aggressiveness (TA) from agency perspectives in the rarely discussed case of group firms. More specifically, the study investigates the relationship between firms TA, tunnelling and value of firm. Moreover, the study also investigates the impact of the moderating role of corporate governance (CG) in counterfeiting the conflicts of interests in group firms. For this purpose, sample data of 160 non-financial Pakistani firms belonging to groups for the period from 2009 to 2018 is analyzed through two Stages Least Square Regression (2SLS) models. The findings reveal that tunneling, group ownership and managerial ownership show direct association with TA. While CG agents, board and audit committee independence and external audit quality exhibits an indirect relationship with TA. Moreover, the tunneling-related TA has a negative effect on the firm value. However, the estimated interaction effects show that CG mitigates this negative relationship between the tunneling-related TA and firm value. Thus, good CG ameliorates the expropriations by the controlling shareholders and TA becomes a value enhancing activity in business groups.

Keywords

Tax
Aggressiveness,
Firm Value,
Business
Groups,
Corporate
Governance,
External Audit
Quality

JEL

Classification
H51; H75; I18

1. Introduction

In general governments take more than 30% of a firm's pre-tax income and Pakistan is no exception. This gigantic firms' tax cost could influence managers to devise plans to mitigate the cost and enhance profits after tax (Chen et al., 2008). Looking through the lens, managers as stewards, it is not irrational to assume that managers' aggressive

* hamidullah@icp.edu.pk

tax planning will contribute towards the cherished goal of shareholders wealth maximization (Scholes et al., 2009). However, agency theory predicts that these plans might translate to contribute towards furthering managerial opportunism because it might reduce corporate transparency (Desai & Dharmapala, 2006). Further, if a firm belongs to some business group then it may minimize its tax cost at the group level by shifting profits within a group (Choi, Sami & Zhuo, 2010). To this end, Jung, Kim and Kim (2009) reported that the marginal tax rate of group firms is lower relative to that of non-group firms of the same industry and size due to aggressive tax avoidance. Similarly, Klassen, Lang and Wolfson (1993) in the case of multinational corporations operating in countries with high and low tax rate countries found that these firms, through related party transactions (RPT), transfer their funds from economies with high tax rates to those with low tax rates (Ko, 2000).

Existing studies propose number of diverse factors that are associated with the TA behavior of firms. These factors are size of firm, international operations, leverage, capital intensity, executive compensations and political affiliation of firms (see e.g., Richardson & Lanis, 2007; and Richardson & Lanis, 2007). However, these studies ignore the aggressive tax behaviors that have potential non-tax agency costs such as regulatory or reputational (Scholes, Wolfson, Erickson, Maydew, & Shevlin, 2005).

The agency perspective of corporate TA issues is interlinked with corporate governance (CG). From the agency perspective, cash saved from TA activities is transferred by the firms' controlling shareholders having low cash flow rights to a firm in which these shareholders have high cash flow rights (Desai & Dharmapala, 2006). Kim, Quinn, and Wilson (2016) documented a positive (negative) association between managerial ownership and TA (tax expenses paid in cash). An indirect association between corporate TA and family ownership is also reported (see e.g., Chen et al., 2010; and Landry, Deslandes, & Fortin, 2013).

Existing literature suggests that CG mechanisms mitigate agency problems and empirical studies report significant positive effect of CG on value of firm and tax avoidance (see e.g., Desai & Dharmapala, 2009; and Yee, Sapiei, & Abdullah, 2018). Number of studies show that the negative effect of corporate TA on value of firm is mitigated through better CG practices in placed by the firms. Arif and Hashim (2013) found that the value relevance of corporate TA is relatively higher for well-governed firms. Large number of studies report that independent boards with sufficient financial compensations, independent audit committees, separation of the role of chairman and CEO, quality of external audits and close monitoring by creditors and regulatory authorities discipline the expropriating behaviour of controlling shareholders (Cheung et al. 2006; Gao & Kling 2008; Nekhili & Cherif, 2011; and Ryngaert & Thomas, 2012).

Most of the work on this topic is done in developed countries where dispersed ownership with conflict between managers and shareholders or in China where government act as a controlling shareholder (Pilos, 2017; and Kim, Li & Zhang, 2011).

The current study takes this literature a step further and tends to investigate the implication of non-tax costs incurred due to aggressive tax avoidance on value of firm in the case of group firms. This study is conducted in an institutional setting where business groups act as controlling shareholders of firms and are reported to be aggressively involved in tunneling-related activities (see e.g., Ullah & Shah, 2015). The relationships among TA, CG, and firm value are largely unexplored in Pakistani group firms. Earlier, Shabbir, Waheed, and Mahmood (2017) examined the relationships of firm size, growth, debts and inventory changes, ROA, TA and tax avoidance. Akram, Iqbal, and Mughal (2012) followed exploratory research design and considered macroeconomic factors that affect corporate tax. They explored that lack of enforcement, lower penalties, lack of public awareness, and high compliance cost are the factors that discourage TA. Whereas, the current study is entirely different from these aforementioned studies in a way that it follows an agency perspective of corporate TA and the impact of tunneling-related TA on firm value and further analyzes the moderating role of CG in counterfeiting the agency conflict arising from TA in unique institutional settings of business groups. The unique institutional setting is considered the most suitable to conduct this study and to analyse the behaviour of the business groups in managing the tax at group level within the agency framework and determining its effect on value of firm in the presence of CG mechanisms. Thus, following an agency framework, this multi-prong study contributes to the literature and broadens the understanding of tax-sheltering in family-dominated and business groups firms. The study tests that if tax sheltering activities are benefiting the overall shareholders or if the resources saved through such activities are tunneled out by the controlling shareholders. The study also assesses the contribution of the CG agents in constraining the expropriations of saved tax through tax sheltering activities.

2. Literature Review

The extant literature highlights different terms for the TA such as tax avoidance, tax planning, tax management, and tax sheltering. According to Dyreng, Hanlon & Maydew (2010) the management practices whereby firms pay lower tax per dollar of the pre-tax accounting income is known as TA. Whereas, Frank, Lynch and Rego (2009) stated that TA is tax planning that involve manipulating and reporting reduced accounting income and that may or may not be fraudulent tax evasion. Similarly, Chen et al. (2010) also stated that TA could involve legal and illegal practices. Whereas, Hanlon and Heitzman (2010) describe TA to include activities such as investments in municipal bond, noncompliance and tax evasion. As such TA is multifaceted phenomenon that influences firms' tax payment.

2.1 Tax Aggressiveness and Tunneling

The traditional theory of finance assumed that managers undertake TA activities to maximize shareholders wealth (Scholes, et al., 2009). The tax saved may be reinvested or given to the shareholders. However, agency theory predicts that in the case of group

firms, cash saved from TA activities might be transferred to other firm(s) by the controlling shareholders to protect self-interests (Desai & Dharmapala, 2006; Desai et al., 2009). There is an opportunity for firms belonging to business group to play down their tax liabilities through RPTs (Choi et al., 2010). Findings of empirical studies show that firms belonging to group shift income and expropriate resources within the group (Ullah & Shah, 2015). Other studies provide more direct evidence of TA by multinational corporations (MNCs); MNCs are reported to shift incomes to business units in other countries and exposed to lower tax rates (Klassen, Lang & Wolfson, 1993; Ko 2000). As revealed in the literature, in economies with concentrated or family ownership of firms the conflict between principals-principals are of major concern (see e.g., La Porta et al., 1999). Further, utility maximizer majority shareholders can influence the management and will expropriate wealth at the expense of minority shareholders through RPTs due to their more cash flow rights (Jensen & Meckling, 1976). Empirical studies document that controlling shareholders with excess power are involved in self-dealing such as TA, excessive compensation, personal loans, transfer pricing, corporate opportunities, outright expropriation of assets and profits (Desai & Dharmapala, 2006; Djankov et al., 2008; Shleifer & Vishny, 1997). Few studies documented value destroying effect of TA because cash saved through TA is expropriated by the controlling shareholders through RPTs at the expense of other shareholders (Chen et al., 2010; Desai & Dharmapala, 2006; and Ryngaert & Thomas, 2007). Thus, RPTs and tax avoidance will relate positively on the conjecture that the saved tax could be expropriated by the controlling shareholders in group firms.

H₁: There is positive relationship between RPTs and TA in group firms.

2.2 Ownership Structure and Tax Aggressiveness

Firms' structures of ownership and agency problems have association (Shleifer & Vishny, 1997). Majority of the Pakistani firms are family owned, have concentrated ownerships and belong to some groups (Abdullah, Shah, Gohar, & Iqbal, 2011). Family controlled associated firms have concentrated ownership either due to the weaker enforcement of property rights or due to the absence of specialized institutions in the capital market (Fan & Wong, 2005; and La Porta et al., 1997). The possible nexus between family members and the opportunistic could spin the TA activities in the favour of the associated firms. Given the majority and minority shareholders conflict, it cannot be ruled out that the latter could discount the stock prices coupled with other tax avoidance cost. However, due to lesser dependence on the capital market and lesser reputational impact in case of penalty imposed, associated family-controlled firms are expected to gain more benefits from TA actions in countries like Pakistan with relatively poor or inefficient law enforcement. Literature reveals that controlling shareholders with the control of the group can shift or share resources within a group, which benefits those firms operating in developing economies (Khanna & Yafeh, 2005; Ullah & Shah, 2015). Moreover, the existing literature documented other benefits associated with business groups such as sharing financial resources, financing needs of newly

established firms, TA within group firms (Almeida & Wolfenzon, 2006; and Ryngaert & Thomas, 2007). Therefore, it is hypothesized:

H₂: Associated ownership has positive association with TA in group firms.

Extant literature document the relationship between TA and family ownership (Chen et al., 2010), private equity ownership (Badertscher, Shroff & White, 2012) and dual-class ownership (McGuire et al., 2014). However, there is no study of managerial ownership and TA in the case of group firms. Desai and Dharmapala (2006) suggested that manager execute complex TA transactions that extract rents from shareholders. Thus, the tax saved through TA is used by the opportunistic managers for their private benefits. Kim, Quinn, and Wilson (2016) and Rego and Wilson (2012) found that an increase in managerial ownership increases TA. The possible collusion between majority shareholders and managers also provide the opportunity of sharing the saved tax pie. Hence, it is hypothesized that:

H₃: Managerial ownership and TA exhibit positive relationship in group firms.

2.3 Tunneling, Tax Aggressiveness, and Firm Value

Theoretically, RPTs can have either positive or negative effect on the wealth of minority shareholders and value of firms (Gordon, Henry, Louwers & Reed, 2007). On one hand, the “conflict of interest hypothesis” argues that RPTs negatively affect firms’ performance and value due to the existence of conflicts of interests between principals and agents or principals and principals. On the other hand, the “efficient transactions hypothesis” argues that due to inherent expected efficiency, RPTs could improve performance and value of group firms. Wang (2011) investigated the role of corporate transparency in TA and value of firm and concluded that tax sheltering dilute value of firm in opaque firms and positive influence in case of informational transparent firms. The resulting lack of transparency due to the complex structure and complex nature of transactions suggests that there will be negative association between TA and value of firm in case of group firms.

Empirical studies about the effect of TA on the value of firm have mixed results. For example, Gupta and Newberry (1997) found that firm profitability, liquidity and leverage are positively associated with TA. In the support of a positive effect of tax sheltering activities and firm value, Wilson (2009) reported that market returns were higher for the firms involved in TA practices. Others, such as Arif and Hashim (2013), Moradi, Mohammadi, and Saeedi (2015) also found that TA enhances firm value. However, Cloyd, Mills, and Weaver (2003) found no significant association between TA and firm value in the case of US firms. In contrast, Hanlon and Slemrod (2009) found that the market responds negatively to the firms involved in aggressive TA. Similarly, Desai and Dharmapala (2009) found a significant and negative effect of TA on firm value. Their findings are in line with the agency perspective that information asymmetry could favor controlling shareholders to engage in TA activities Therefore,

tax saved from tax sheltering activities may not increase shareholders wealth due to the expropriation by the major shareholders or opportunistic managers at the expense of minority shareholders. In this study, it is hypothesized that:

H4: TA is inversely associated with the value of firm in group firms.

2.4 Corporate Governance, Tax Aggressiveness, and Value of Firm

Shleifer and Vishny (1997) describe CG as “*the system of control mechanisms, through which the suppliers of finance to corporations assure themselves of getting a return on their investment.*” Thus, CG is value maximizing framework that preserves interests of all stakeholders including minority shareholders and mitigates agency costs. Desai and Dharmapala (2009) opined that the influence of TA is value enhancing (destroying) for well-governed (poor governed) firms. Similar results are reported by Arif and Hashim (2013) and Yee et al., (2018). However, the later further added that tax saved is expropriated by the controlling shareholder and the weak CG couldn’t benefit the minority shareholders in Malaysian firms. Moreover, Chan, Mo, and Tang (2016) suggested that the value relevance of TA reduces for the firms having high association between TA and tunnelling.

In Pakistani business groups with family dominance and expropriations by the controlling shareholders (Ullah & Shah, 2015), the TA is expected to be used for tunnelling. Tax saved will be beneficial for the controlling shareholders but of no value to the minority shareholders. Hence, TA shall negatively affect value of Pakistani firms. The mitigating effect of CG here is an empirical issue. It might partially or completely control the negative impact of TA on value of firm. Contrary to this view, “efficient transactions hypothesis” will predict that RPTs, not meant to expropriate resource, might increase the performance of Pakistani group firms with family dominance. Thus, tax saved through TA might bear shareholders’ wealth maximizing effect. Following the “conflict of interest hypothesis”, it is hypothesized that *the relationship between TA and value of firm is moderated by the level of CG factors in firms belonging to business groups*. The current study considered the following three main pillars of CG.

2.4.1 Board independence, TA and Value of Firm

An effective board of directors composed of independent (neutral) members with ample experience and repute would effectively safeguard the interests of all stakeholders (Khaoula & Moez, 2019). Due to their effective monitoring, the boards in group firms are expected to control expropriation and rules violation-oriented TA activities and shall positively influence value of firms (Adams & Ferreira, 2007; and Masulis & Mobbs, 2011). On the other hand, it can be argued that independent members who are supposed to be more concerned about their repute shall disallow tax planning practices by the firms or controlling shareholders having political powers might negatively influence the independent role of the board members. Hence, an indirect effect of the board independence on the TA and value of firm is also possible. We hypothesize that:

H_{5a}: Board independence positively influences the association between TA and value of firm in group firms.

2.4.2 Independent Audit Committee, TA and Value of Firm

Expert, independent member directors in the audit committee, having incentives, will increase monitoring effectiveness and hence quality of the financial information of these firms by sustaining any influence of the firms' management (Beasley, Carcello, Hermanson & Neal, 2010). In fact, the auditors are expected to have the expertise to identify the complex tax avoidance practices in the perplex management structure of group firms. A US based study by Dhaliwal, Naiker, and Navissi (2010) reports that accounting frauds are controlled by fully independent audit committee. Under the premise that TA is a tunneling activity by the controlling shareholders, an independent audit committee will ensure that the saved tax is not expropriated at the expense of the minority shareholders. Therefore, an independent audit committee will positively influence the association between TA and value of firm. However, auditors also provide advices on managing tax planning risk (McGuire, Omer & Wang, 2012). Thus, in the presence of expert and independent audit committee, shareholders might perceive TA as value enhancing practice rather than an opaque action (see Dhaliwal et al., 2010). Here, we hypothesize that:

H_{5b}: Independent audit committee will have mitigating effect on the value destroying impact of AT in group firms.

2.4.3 Eexternal Audit from Big4

Experience, expertise, repute, presumed greater independence and accompanied incentives are some of the reasons due to which big audit firms are expected to offer better monitoring of the accounting information of firms. Audit by big firms shall reduce the chances of presumed controlling shareholders driven TA. Moreover, it shall positively influence the TA and value of firm association because the quality of the financial information in the presence of big audit firms could be highly valued by the investors. In addition, the advising role on tax planning also suggests a positive impact of TA on value of firm. We hypothesize that:

H_{5c}: In group firms, audit by big4 is expected to positively affect the association of TA and value of firm.

3. Methodology

3.1 Data Collection and Sample Size

This study used a sample of 160 firms belonging to different business groups and listed in Pakistan Stock Exchange for a period from 2009 to 2018. Data of TA measures, CG, ownership, and RPTs and other variables is extracted from the companies' published annual reports available on their respective websites. The sample size is primarily determined by the availability of data on the variables of interest for the sample period.

3.2 Regression Models and Estimation

The study uses panel method to estimate the models used in the study of Yee et al., (2018). The study used 2 Stage Least Square (2SLS) regressions wherein the 1st Stage equation the dependent variable is *DETR* and the independent variables include CG factors and firm-specific variables. It is least expected that all firms have same level of TA e.g., intangible assets intensive firms may engage in more TA, hence endogeneity cannot be completely ignored. The 2SLS is expected to control the issue. Two instrumental variables, INST (intangible assets scaled by total assets) and ATR (applicable tax rate) are added to eq -2.

2-Stages Least Square Regression Models

$$DETR_{i,t} = \alpha + \beta RPRA_{i,t} + \beta MOS_{i,t} + \beta ASSOCT_{i,t} + \beta BIG4_{i,t} + \beta NED_{i,t} + \beta IAC_{i,t} + \beta FG + \beta SIZE_{i,t} + \beta ROA_{i,t} + \beta DE_{i,t} + \mu \quad \text{--- eq - 1}$$

$$TobinsQ_{i,t} = \alpha + \beta DETR_{i,t} + \beta RPRA_{i,t} + \beta MOS_{i,t} + \beta ASSOCT_{i,t} + \beta BIG4_{i,t} + \beta NED_{i,t} + \beta IAC_{i,t} + \beta FG + \beta SIZE_{i,t} + \beta ROA_{i,t} + \beta INAI_{i,t} + \beta ART_{i,t} + \beta DE_{i,t} + \mu \quad \text{--- eq - 2}$$

2-Stages Least Square Regression Models with Interaction Terms

$$DETR_{i,t} = \alpha + \beta RPRA_{i,t} + \beta MOS_{i,t} + \beta ASSOCT_{i,t} + \beta BIG4_{i,t} + \beta NED_{i,t} + \beta IAC_{i,t} + \beta FG + \beta SIZE_{i,t} + \beta ROA_{i,t} + \beta DE_{i,t} + \mu \quad \text{--- eq - 3}$$

$$TobinsQ_{i,t} = \alpha + \beta DETR_{i,t} \times BIG4_{i,t} + \beta DETR_{i,t} \times IAC + \beta DETR_{i,t} \times NED + \beta DETR_{i,t} + \beta RPRA_{i,t} + \beta MOS_{i,t} + \beta ASSOCT_{i,t} + \beta BIG4_{i,t} + \beta NED_{i,t} + \beta IAC_{i,t} + \beta FG + \beta SIZE_{i,t} + \beta ROA_{i,t} + \beta INAI_{i,t} + \beta ART_{i,t} + \beta DE_{i,t} + \mu \quad \text{--- eq - 4}$$

3.3.1 Measures of Tunneling

This study examines that controlling shareholders of business groups use RPTs to tunnel the saved tax. Therefore, tunneling is measured through related party receivables and related party loans both scaled by total asset (*RPR*) (Jiang, Lee & Yue, 2010; Ullah and Shah, 2015).

3.3.2 Measures of Tax Aggressiveness

The study follows Amiram, Bauer, and Frank (2013) and Inger (2014) to compute TA as the difference of effective tax rate (ETR) and applicable tax rate (ATR). ETR is current income tax expense to current pre-tax income. The other two measures of TA that are used for robustness check are *DETR2* and *DETR3*; where *DETR2* is provisions of income tax scaled by pre-tax income (Gupta & Newberry, 1997; Hanlon & Heitzman, 2010), and *DETR3* is income tax divided by cash flows from operations (Annuar, Salihu & Obid, 2013).

3.3.3 Measure of Firm Value

Value of firm is measured through the frequently used Tobin's Q (Wang, 2011; and Inger, 2014).

3.3.4 Measures of Corporate Governance and Ownership Structure

CG elements include board independence, independent audit committee and external audit from Big4¹. Board independence is determined through the numbers of outside directors divided by the total directors (Tandean & Winnie, 2016). The independence of the audit committee is the ratio of non-executive members to total members of the audit committee (Tandean & Winnie, 2016). It is expected that an increase in the numbers of outside member will increase the independence of board and audit committee. The higher independence of these two bodies could lower the likelihood of diverting the saved tax from TA activities and are expected to positively affect value of the firm. An external audit from big4 is valued as 1 if the firm auditor is from big4 otherwise it is coded as 0 (Ullah & Shah, 2015). The engagement of Big4 would signal that value enhancing tax sheltering decisions would be made and diversion of the saved tax by the controlling shareholders would be refrained. Managerial ownership is the percentage of shares held by the directors and their family members out of total shares and associated firm ownership is the shares held by other firms or affiliated firms (Abdullah et al., 2011).

3.3.5 Control variables

Following the literature, this study includes various control variables to account for their effects on the TA and firm value. Firm size and growth of firm is computed as log of total assets and changes in fixed assets respectively. Leverage is represented by debts to equity ratio and ROA is computed as the ratio of net income to total assets (Sari, Utama & Rossieta, 2017; and Yee et al., 2018).

4. Results and Discussions

This section includes discussions on the results of descriptive analysis, correlation, and panel regression analysis.

4.1 Descriptive Statistics

On the average firms have 18.9% related party receivables out of the total assets, 7.6% difference of receivables to payables scaled by total assets, and 4% related party loans out of total assets. These statistics show that a significant amount of assets are transacted through RPTs by the group firms. The $DETR(s)$ represents the difference of the tax amount that group firms were required to pay and what actually these firms have paid. The positive average value of $DETR(s)$ suggests that the group firms have practiced TA. The average value of the $DETR1$ is 0.138, $DETR2$ is 0.183 and $DETR3$ is 0.204. The ownership structure variables show that on average managerial ownership is

¹ The big four accounting firms are PricewaterhouseCoopers (PwC), Deloitte and Touche, KPMG and Ernst & Young.

25.5% and associated ownership 34.5% out of total shares of firms. On the average 40% of the group firms take services from Big4 audit firms. About 66% of the directors are non-executive directors where audit committee includes two non-executive directors. Further, on the average firm assets show 5.7% growth, the average size of firms is 15, whereas, the debt to equity ratio has an average value of 0.65 which suggests that 0.65 out of 1 rupee is used to finance assets. The average *ROA* is 6.9% and the average value of Tobin's ratio is 1.791 which shows that group firms have high market value relative to their book value.

4.2 Pearson Correlation Matrix

Table 4.2 reports no case of high correlation among the variables and rules out the issue of multicollinearity. The measures of TA (DETR1, DETR2, DETR3) and RPTs (*RPR*, *RPlan*) exhibit positive correlations between them. This association of RPTs with TA suggests that the former is used to save tax. Furthermore, managerial and associated ownership are positively related to the different measures of RPTs and TA. As such it can be inferred that managerial ownership in Pakistani group firms might be a mean to collude with the controlling shareholders. As expected, the three CG variables are inversely linked to both RPTs and TA. Similarly, growths, *ROA* and debts to equity exhibit an inverse relationship with the measures of RPTs and TA. Finally, RPTs is inversely related to Tobin's Q but TA show evidence of a positive correlation with the value of firm.

4.4 Tax Aggressiveness, Tunneling and Firm Value

Table 4.3 shows results of the 2SLS models with TA and Tobin's Q as the explained variables. The results of the 1st stage model of TA show a positive effect of the *RPR* on TA. An increase in *RPR* motivates the group firms to aggressively engage in tax planning (Chan et al., 2016; Jiang et al., 2010). This indirectly implies that the saved tax could be diverted by the controlling shareholder to other group firms through RPTs. In fact, the positive association between RPTs and TA is indicative of the incidents of the income diversion from a firm with probably a high tax rate in the group to a firm with probably a low tax rate and hence the findings are in line with Jung et al., (2009) who reported lower pre-tax return on assets for group firms with more tax burden.

As expected, managerial and associated ownership has direct significant effect on TA (Ryngaert & Thomas, 2007). Thus, firms with relatively more managerial and associated ownership are most likely to engage in TA activities (Kim et al., 2016). Desai and Dharmapala (2006) suggested that TA facilitates managerial rent extraction and could strengthen its opportunistic behavior. The CG variables such as board independence, independence of audit committee and audit from Big4 show statistically significant inverse relationship with TA in all the estimated models. These findings are similar to those documented by Jiang et al., (2010) and Li et al., (2016). Thus, increase in the outside members in board and audit committee would improve governance and

reduce the aggressive tax opportunism that would risk the minority shareholders wealth. Among the control variables growth, leverage and ROA have a negative influence on the TA activities, whereas, size of firm shows a direct and significant influence on TA activities in the sample firms. Thus, it is argued that to preserve reputation and image growing firms and firms with higher level of leverage would have lower level of TA practices (Jiang et al. 2010). However, relatively large firms are more engaged in aggressive tax sheltering due to their large volume and sophisticated transactions.

The results of the Tobin's Q models show that all the three measures of TA i.e. DETR1, DETR2, and DETR3 have an inverse and significant relationship with the value of firm. As expected, the results imply that TA is conflicting in nature in the Pakistani group firms and perceived as value reducing activity by investors. These results supports the view that TA increase after-tax cash flows, however its effect on firm value is diluted, particularly in group firms, due to the possible expropriation of saved tax by the controlling shareholders (Desai & Dharmapala, 2006, 2009). Likewise, perceived as a mean of expropriation by the investors, *RPA* shows an indirect influence on the Tobin's Q (Gao & Kling, 2012; Ullah & Shah, 2015). In line with the entrenchment hypothesis, both, managerial and associated ownership are inversely related to the Tobin's Q. Therefore, following the results of Ullah and Shah (2015), it is argued that increase in associated ownership or managerial ownership enhance controlling power in other group firms and the controlling shareholder, in self-interest, thus tunnel out resources through RPTs that eventually decrease the firm value (Gao & Kling, 2012; and Ullah & Shah, 2015). Consistent with the prior studies, firm growth, leverage and applicable tax rate have negative effect on Tobin's Q, and firm size and intangible assets have positive and significant effect on Tobin's Q (Chan et al., 2016; Yee et al., 2018).

The moderating effect of the CG variables between the relationship of TA and value of firm is determined through interaction term of the governance and TA variables.² As reported in Table 4.4, the interaction of CG variables with TA has a positive and significant effect on the firm value. These findings demonstrate that in the presence of more independent members on the board, independence of audit committee, and Big4 auditor, the effect of the TA on the firm value becomes positive. Even in the case of group firms, these measures of CG constrain expropriation of the saved tax through tax sheltering activities, improve the overall governance, and hence improve the firm value (Chan et al., 2016; Jiang et al., 2010; Li et al., 2016). These results are similar to the findings documented by Arif and Hashim (2013), Yee et al., (2018), and Desai and Dharmapala (2009). They reported that case of well-governed firm, there is a significant positive influence of TA on firm value; the results of all other variables remain consistent with the results of the baseline model. From these findings we conclude that

² The study also used interactions of corporate governance variables with DETER in related party loan models and found consistent results with the baseline interaction models. The other variables results also remained the same but not discussed here.

presence of good CG mechanisms is perceived by investors to reduce the probability of expropriations and shifting resources from a group firm to another by the controlling shareholders.

4.5 Robustness Check

To check that these findings are robust and remain consistent for another type of RPTs; this study also considered related party loan scaled by total assets and examines its effect on TA and firm value (*RPloan*). Table 4.5 presents the results of 2SLS models. The only changed proxy is *RPloan* in the model. The results of *RPloan* are not different from *RPRA*, the earlier proxy of tunneling. More specifically, an increase in *RPloan* increases TA in the Pakistani group firms because controlling shareholders might pressurize managers to aggressively engage in the tax sheltering activities (Jiang et al. 2010; Sari, Utama & Rossieta, 2017). Chan et al., (2016) also reported that *RPloan* is used to divert saved tax and further showed its detrimental effect for the minority shareholders. Frank et al., (2009) suggested that information risk from TA deepens the uncertainty of firms which confers on the controlling shareholders greater flexibility in expropriating resources. Therefore, following the results of Sari et al., (2017) we also concluded that increase in the related party loan would increase the demand for aggressive tax sheltering activities in group firms in Pakistan and this prediction is remained consistent with the baseline model.

Similar to the results of the base line regression, the ownership variables, managerial and associated ownership, are directly and statistically significantly influencing the various measures of TA; whereas, CG variables, board independence, independent audit committee, and audit from Big4 exhibit the same negative and significant effect on TA. The results of other control variables also exhibit no inconsistency such that firm growth, leverage, and ROA have negative influence and size of firm shows a direct effect on TA.

5. Conclusion

To the extent aggressive tax planning could reduce tax costs, the shareholders would prefer it. However, this argument overlooks the prospective non-tax costs associated with TA, say for example, agency related costs. Firms owned or controlled by business group or family are exposed to conflict of interests between majority and minority shareholders. This study analyzed data of 160 Pakistani group firms through 2SLS estimation to find impact of RPTs on TA and the later impact on the value of firm. In addition, the moderating role of measures of CG on the relationship between RPTs and TA is analyzed. It is found that RPTs, associated firm ownership and managerial ownership have direct influence on the TA, whereas, board and audit committee independence and audit from Big4 have negative effect on the TA. Moreover, the TA and RPTs show indirect impact on the value of firm while controlling for ownership and CG variables. The interaction models show that CG variables positively moderate the

TA and firm value relationship. We conjecture that good CG practices are evenly important in the case of group firms. In these firms, as perceived by investors, the indirect effect of TA on the value of firm is significantly mitigated by employing good CG practices.

References

- Abdullah, F., Shah, A., Gohar, R., & Iqbal, A. M. (2011). The effect of group and family ownership on firm performance: Empirical evidence from Pakistan. *International Review of Business Research Papers*, 7(4), 191-208.
- Adams, R., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309.
- Amiram, D., Bauer, A. M., & Frank, M. M. (2013). Manager-Shareholder Alignment, Shareholder Dividend Tax Policy, and Corporate Tax Avoidance. *SSRN Electronic Journal*. doi:10.2139/ssrn.2111467
- Annur, H. A., Salihu, I. A., & Obid, S. N. (2014). Corporate Ownership, Governance and Tax Avoidance: An Interactive Effects. *Procedia - Social and Behavioral Sciences 164*: 150-160. doi:10.1016/j.sbspro.2014.11.063
- Badertscher, B., Shroff, N., & White, H. D. (2012). Externalities of Public Firms' Disclosures: Evidence from Private Firms' Investment Decisions. *SSRN Electronic Journal*. doi:10.2139/ssrn.2037287
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2010). The audit committee oversight process. *Contemporary Accounting Research*, 26(1), 65-122.
- Chan, K. H., Mo, P. L., & Tang, T. (2016). Tax Avoidance and Tunneling: Empirical Analysis from an Agency Perspective. *Journal of International Accounting Research 153*: 49-66. doi:10.2308/jiar-51345
- Chen, S., Chen, X., Shevlin, T., Chen, S., Chen, X., & Shevlin, T. (2010). *Institutional Knowledge at Singapore Management University Are Family Firms more Tax Aggressive than Non-family Firms ? Are family firms more tax aggressive than non-family firms ? * University of Texas at Austin University of Wisconsin-Madison*. 41-61.
- Chen, C., Hepfer, B. F., Quinn, P. J., & Wilson, R. J. (2018). The effect of tax-motivated income shifting on information asymmetry. *Review of Accounting Studies 233*: 958-04. doi:10.1007/s11142-018-9439-1
- Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics 951*: 41-61. doi:10.1016/j.jfineco.2009.02.003
- Cheung, Y., Rau, P., & Stouraitis, A. (2006). Tunneling, propping, and expropriation: evidence from connected party transactions in Hong Kong. *Journal of Financial Economics*, 822: 343-86. doi:10.1016/j.jfineco.2004.08.012

- Choi, J. J., Sami, H., & Zhou, H. (2010). The Impacts of State Ownership on Information Asymmetry: Evidence from an Emerging Market. *China Journal of Accounting Research* 3: 13-50. doi:10.1016/s1755-30911360018-0
- Cloyd, C. B., Mills, L. F., & Weaver, C. D. (2003). Firm Valuation Effects of the Expatriation of U.S. Corporations to Tax-Haven Countries. *The Journal of the American Taxation Association* 25: 87- 09. doi:10.2308/jata.2003.25.s-1.87
- Desai, M. A., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics* 79(1): 145-79. doi:10.1016/j.jfineco.2005.02.002
- Desai, M. A., & Dharmapala, D. (2009). Corporate Tax Avoidance and Firm Value. *Review of Economics and Statistics* 91(3): 537-46. doi:10.1162/rest.91.3.537
- Desai, M., & Dharmapala, D. (2004). Corporate Tax Avoidance and High Powered Incentives. doi:10.3386/w10471
- Dhaliwal, D., Naiker, V., & Navissi, F. (2010). The association between accruals quality and the characteristics of accounting experts & mix of expertise on audit committees. *Contemporary Accounting Research*, 27(3), 787-827.
- Djankov, S., Ganser, T., McLiesh, C., Ramalho, R., & Shleifer, A. (2008). The Effect of Corporate Taxes on Investment and Entrepreneurship. doi:10.3386/w13756 doi:10.1016/j.jaccpubpol.2010.09.003
- Dyreng, S. D., Hanlon, M., & Maydew, E. L. (2010). The Effects of Executives on Corporate Tax Avoidance. *The Accounting Review* 85(4): 1163-89. doi:10.2308/accr.2010.85.4.1163
- Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. *The Journal of Law and Economics* 26(2): 301-25. doi:10.1086/467037
- Fan, J. P., & Wong, T. J. (2005). Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. *Journal of accounting research*, 43(1), 35-72.
- Frank, M. M., Lynch, L. J., & Rego, S. O. (2009). Tax Reporting Aggressiveness and Its Relation to Aggressive Financial Reporting. *The Accounting Review* 84(2): 467-96. doi:10.2308/accr.2009.84.2.467
- Gao, L., & Kling, G. (2012). Journal of International Accounting, Auditing and Taxation. *Journal of International Accounting, Auditing and Taxation*, 21, 17-31.
- Gao, L., & Kling, G. (2008). Corporate governance and tunneling: Empirical evidence from China. *Pacific-Basin Finance Journal* 16(5): 591-05. doi:10.1016/j.pacfin.2007.09.001
- Gordon, E. A., Henry, E., Louwers, T. J., & Reed, B. J. (2007). Auditing Related Party Transactions: A Literature Overview and Research Synthesis. *Accounting Horizons*, 21(1): 81-102. doi:10.2308/acch.2007.21.1.81

- Gupta, S., & Newberry, K. (1997). Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 161: 1-34. doi:10.1016/s0278-42549600055-5
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics* 3: 127-78. doi:10.1016/j.jacceco.2010.09.002
- Inger, K. K. (2014). Relative Valuation of Alternative Methods of Tax Avoidance. *The Journal of the American Taxation Association* 361: 27-55. doi:10.2308/atax-50606
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Economic Analysis of the Law*, 162-76. doi:10.1002/9780470752135.ch17
- Jiang, G., Lee, C. M., & Yue, H. (2010). Tunneling through intercorporate loans: The China experience☆. *Journal of Financial Economics* 981: 1-20. doi:10.1016/j.jfineco.2010.05.002
- Jung, K., Kim, B., & Kim, B. (2009). Tax Motivated Income Shifting and Korean Business Groups Chaebol. *Journal of Business Finance & Accounting* 6: 552-86. doi:10.1111/j.1468-5957.2009.02141.x
- Khaoula, F., & Moez, D. (2019). The moderating effect of the board of directors on firm value and tax planning: Evidence from European listed firms. *Borsa Istanbul Review*, 19(4), 331-343.
- Kim, J. B., Li, Y., & Zhang, L. (2011). Corporate tax avoidance and stock price crash risk: Firm-level analysis. *Journal of Financial Economics* 1003: 639-62. <https://doi.org/10.1016/j.jfineco.2010.07.007>
- Kim, J., Quinn, P., & Wilson, R. (2016). *Managerial Ownership and Tax Avoidance*. Working Paper.
- Klassen, K., Lang, M., & Wolfson, M. (1993). Geographic Income Shifting by Multinational Corporations in Response to Tax Rate Changes. *Journal of Accounting Research* 31: 141-82. doi:10.2307/2491168
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1998). Law and Finance. *Journal of Political Economy*, 1066: 1113-55. doi:10.1086/250042
- Landry, S., Deslandes, M., & Fortin, A. (2013). Tax Aggressiveness, Corporate Social Responsibility, and Ownership Structure. *SSRN Electronic Journal*. doi:10.2139/ssrn.2304653
- Masulis, R. W., & Mobbs, S. (2011). Are all inside directors the same? Evidence from the external directorship market. *Journal of Finance*, 66, 823-872.
- McGuire, S. T., Omer, T. C., & Wang, D. (2012). Tax avoidance: Does tax specific industry expertise make a difference? *Accounting Review*, 87(3), 975-1003.
- Nekhili, M., & Cherif, M. (2011). Related parties transactions and firm's market value: the French case. *Review of Accounting and Finance*, 103: 291-15. doi:10.1108/14757701111155806

- Ryngaert, M. D., & Thomas, S. E. (2007). Related Party Transactions: Their Origins and Wealth Effects. *SSRN Electronic Journal*. doi:10.2139/ssrn.970689
- Sari, D. K., Utama, S., & Rossieta, H. (2017). Tax Avoidance, Related Party Transactions, Corporate Governance And The Corporate Cash Dividend Policy. *Journal of Indonesian Economy and Business* 323: 190-14. doi:10.22146/jieb.28658
- Scholes, M. S., Wolfson, M. A., Erickson, M. M., Hanlon, M. L., Maydew, E. L., & Shevlin, T. J.. (2015). *Taxes & Business Strategy, Global Edition*. New York, NY: Pearson Higher Ed.
- Tandean, V. A., & Winnie, W. (2016). Good Corporate Governance Dan Ukuran Perusahaan Pengaruhnya Pada Tax Avoidance. *Jurnal Ilmiah Akuntansi dan Bisnis*. doi:10.24843/jiab.2016.v11.i01.p07
- Ullah, H., & Shah, A. (2015). Related party transactions and corporate governance mechanisms: Evidence from firms listed on the Karachi stock exchange. *Pakistan Business Review*, 17(3), 663-680.
- Yee, C. S., Sapiei, N. S., & Abdullah, M. (2018). *Tax avoidance, corporate governance and firm value in the digital era*. Muhammadiyah University Yogyakarta.

Table 4.1 Descriptive Statistics

Variable	Obs	Mean	Std.Dev	Min	Max
RPRA	1494	0.189	0.063	0.000	0.685
RPLOAN	1494	0.040	0.026	0.000	0.364
DETR1	1494	0.138	0.200	-0.499	0.898
DETR2	1494	0.183	0.155	-0.420	0.636
DETR3	1494	0.204	0.138	-0.246	0.636
MOS	1494	0.255	0.208	0.000	0.775
ASSOCTOSP	1494	0.345	0.288	0.000	0.903
BIG4	1494	0.406	0.510	0.000	1.000
NXD	1494	0.666	0.294	0.300	0.800
IAC	1494	2.106	0.269	1.000	4.000
FG	1494	0.057	0.155	0.000	0.832
SIZE	1494	15.889	1.529	12.065	20.132
ROA	1494	0.069	0.093	-0.205	0.460
DE	1494	0.652	0.204	0.031	0.994

Related party lending's measured through related party receivables scaled by total asset and related party loan scaled by total assets. (DETR1) is the difference of effective tax rate (ETR) and applicable tax rate (ATR), whereas, effective tax rate is the ratio of current income tax expense to current pre-tax income. DETR2 is the effective tax rate is computed as provisions of income tax divided by pre-tax income, DETR3 is the effective tax rate is computed as the ratio of income tax to operating cash flows. Tobin's Q is computed as the market value of equity plus book value of liabilities divided by total assets. Board independence (NED) is computed as the ratio of outside directors to total directors. The independence of the audit committee (IAC) is computed by the ratio of non-executive members to total members of the audit committee. An external audit from big4 is coded as 1 if the firm auditor is from big4 otherwise it is coded as 0. Firm size is measured by the log of total assets, firm growth is measured by changes in fixed assets, DE represents leverage which is measured by the ratio of debts to equity and ROA is computed as net income divided by total assets.

Table 4.2 Correlation

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
(1) RPRA	1													
(2) RPLOAN	0.11	1												
(3) DETR1	0.24	0.11	1											
(4) DETR2	0.23	0.18	0.54	1										
(5) DETR3	0.23	0.13	0.42	0.51	1									
(6) MOS	0.09	0.09	0.15	0.2	0.18	1								
(7) ASSOCT	0.15	0.12	0.15	0.14	0.13	-0.5	1							
(8) BIG4	-0.16	-0.13	-0.14	-0.16	-0.14	-0.07	0.02	1						
(9) NXD	-0.17	-0.15	-0.12	-0.19	-0.17	-0.09	-0.04	0	1					
(10) IAC	-0.08	-0.11	-0.11	-0.18	-0.15	-0.18	0.1	0.03	0.02	1				
(11) FG	-0.01	-0.02	-0.16	-0.25	-0.27	-0.19	0.02	0.31	0.16	0.06	1			
(12) SIZE	0.31	-0.11	0.03	0.03	0.02	-0.24	0.08	0.14	0.06	0.22	-0.16	1		
(13) ROA	-0.01	-0.04	-0.24	-0.31	-0.39	-0.07	0.02	0.17	-0.06	0.09	0.01	0.07	1	
(14) DE	-0.11	-0.03	-0.12	-0.22	-0.27	0.05	-0.04	-0.03	-0.14	-0.01	-0.12	-0.02	-0.16	1

Table 4.2 shows correlation results.

Table 4.3 2SLS Regression Results of DETR and Tobin's Q

VARIABLES	(DETR1) Model 1	(Tobin's Q) Model 2	(DETR2) Model 3	(Tobin's Q) Model 4	(DETR3) Model 5	(Tobin's Q) Model 6
DETR1		0.8483***				
		-0.339				
DETR2				0.6559***		
				-0.216		
DETR3						0.3591***
						-0.191
RPRA	0.462***	-0.455**	0.256**	-1.077***	0.0958	-0.396**
	-0.124	-0.18	-0.0904	-0.224	-0.0731	-0.177
MOS	0.160***	0.422***	0.119***	0.805***	0.0734**	0.288***
	-0.0586	-0.0772	-0.0414	-0.12	-0.0307	-0.0656
ASSOCTOSP	0.0906**	-0.194***	0.0714**	-0.118**	0.0631**	-0.0902*
	-0.0461	-0.0566	-0.0347	-0.0529	-0.0299	-0.052
BIG4	-0.0498**	0.0927***	-0.0442***	0.0544**	-0.00629	0.0459**
	-0.0224	-0.0205	-0.0164	-0.0229	-0.013	-0.0197
NXD	-0.0728**	0.0679**	-0.0411**	0.0653**	-0.0522**	0.0625*
	-0.0369	-0.0383	-0.0271	-0.0318	-0.0238	-0.0375
IAC	-0.0976***	0.0199	-0.0238	0.132***	-0.00844	0.00648
	-0.0376	-0.0379	-0.0289	-0.0426	-0.0251	-0.0378
FG	-0.206***	-0.282**	-0.200***	-1.078***	-0.222***	-0.567***
	-0.0609	-0.113	-0.0476	-0.198	-0.057	-0.14
SIZE	0.0210***	0.0700***	0.0183***	0.138***	0.0126**	0.0630***
	-0.00743	-0.00975	-0.0061	-0.0173	-0.00555	-0.00915
DE	-0.0863**	-0.397***	-0.0994**	-0.0782**	-0.0748**	-0.195**
	-0.0374	-0.0596	-0.0468	-0.0368	-0.036	-0.0827
INA		0.1251***		0.1251***		0.1251***
		-0.047		-0.047		-0.047
ART		-0.5590***		-0.5590***		-0.5590***
		-0.1906		-0.1906		-0.1906
ROA	-0.634***		-0.24		-0.439***	
	-0.158		-0.169		-0.119	
Constant	-0.198	1.562**	-0.119	1.275*	-0.00623	2.031***
	-0.125	-0.68	-0.1	-0.682	-0.0911	-0.682
Fixed-Industry	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1464	1464	1464	1464	1464	1464
R-Squared	0.192	0.468	0.195	0.468	0.178	0.468

Table 4.3 shows regression results, variables definitions are given in the table 4.1. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4.4 DETR and Tobin's Q with interactive effect of Corporate Governance

Variables	(DETR1) Model 1	(Tobins_Q) Model 2	(DETR2) Model 3	(Tobins_Q) Model 4	(DETR3) Model 5	(Tobins_Q) Model 6
EDETR		0.0512***		-0.0786***		-0.0356***
		0.0036		0.0075		0.005
DETR1_BIG4		0.0855***				
		0.0235				
DETR1_IAC		0.0560***				
		0.027				
DETR1_NED		0.0422***				
		0.0102				
DETR2_BIG4				0.0708***		
				0.012		
DETR2_IAC				0.0574***		
				0.0145		
DETR2_NED				0.0484**		
				0.0166		
DETR3_BIG4						0.0363**
						0.0143
DETR3_IAC						0.0382**
						0.0156
DETR3_NED						0.0414**
						0.0205
ARRP	0.3961***	-0.170***	0.1981***	-0.227***	0.2001***	-0.00714
	-0.0398	-0.0487	-0.0326	-0.0519	-0.0278	-0.0488
MOS	0.137**	-0.391***	0.0925**	-0.776***	0.0661**	-0.269***
	-0.0593	-0.0747	-0.0421	-0.115	-0.0319	-0.0668
ASSOCTOSP	0.6631***	-0.206***	0.2122***	-0.207***	0.0208	-0.106**
	-0.0454	-0.0578	-0.0336	-0.0563	-0.0302	-0.051
BIG4	-0.137**	0.0434**	-0.0973***	0.0895***	-0.0485**	-0.131***
	-0.0422	-0.0218	-0.0161	-0.0313	-0.0128	-0.0393
NED	-0.0516***	0.0427**	-0.0496**	0.0825***	-0.0118**	-0.0794**
	-0.0171	-0.0187	-0.0218	-0.0221	-0.0234	-0.0337
IAC	-0.0314**	0.08121**	-0.0445**	-0.229***	-0.0363**	-0.0699**
	-0.0184	-0.0387	-0.0213	-0.0534	-0.0157	-0.031
FG	-0.212***	-0.301**	-0.2115***	-1.428***	-0.227***	-0.569***
	-0.0613	-0.118	-0.0466	-0.242	-0.0584	-0.14
SIZE	0.0222***	0.0683***	0.0210***	0.180***	0.0134***	0.0558***
	-0.00744	-0.0106	-0.00569	-0.0229	-0.00509	-0.00966
DE	-0.0499**	-0.460***	-0.023	-0.153*	-0.0719**	-0.186**
	-0.0278	-0.0561	-0.0465	-0.0799	-0.0353	-0.0778
INA		0.114**		0.0831**		0.0864*
		-0.048		-0.0412		-0.051
ART		-5.576***		-5.434***		-4.763**
		-2.068		-2.098		-2.148
ROA	-0.594***		-0.193		-0.430***	
	-0.16		-0.17		-0.122	
Constant	-0.0773	1.789**	0.0197	2.084***	0.0566	1.910**
	-0.122	-0.738	-0.101	-0.753	-0.0902	-0.776
Fixed-Industry	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1378	1378	1378	1378	1378	1378
R-squared	0.102	0.384	0.129	0.393	0.182	0.397

The definitions of the other variables remain the same as the baseline model, moreover, the interaction of

various measures of tax aggressiveness represented by DETR1, DETR2 and DETR3 are interacted with the independence audit committee (IAC), board independence (NED) and Audit from Big4 (Big4). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4.5 2SLS Regression Results of DETR and Tobin's Q

VARIABLES	DETR1 Model 1	Tobins_Q Model 2	DETR2 Model 3	Tobins_Q Model 4	DETR3 Model 5	Tobins_Q Model 6
DETR1		0.5458*** -0.1336				
DETR2				0.5844*** -0.1799		
DETR3						0.3514*** -0.48
RPLOAN	0.428** -0.256	-0.648** -0.261	-0.337 -0.226	-1.634*** -0.336	-0.0692 -0.313	0.0889 -0.247
MOS	0.169*** -0.0584	0.448*** -0.0799	0.118*** -0.0413	0.725*** -0.111	0.0757** -0.0303	0.299*** -0.0665
ASSOCTOSP	0.0961** -0.0457	-0.209*** -0.0569	0.0997*** -0.0346	-0.127** -0.0524	0.0954*** -0.0297	-0.101** -0.0514
BIG4	-0.0776*** -0.0223	0.0641*** -0.0206	-0.0955*** -0.0162	0.0757*** -0.0211	-0.0420** -0.0199	0.0426** -0.0199
NXD	-0.0761** -0.0372	0.0692* -0.0395	0.0593** -0.0271	0.0742** -0.0341	-0.0626** -0.0299	0.0758** -0.0382
IAC	-0.0359** -0.0176	0.0743** -0.0378	-0.0229 -0.0289	0.109*** -0.0412	-0.0766*** -0.0252	0.0815** -0.0377
FG	-0.205*** -0.0611	-0.270** -0.112	-0.202*** -0.0474	-0.944*** -0.182	-0.223*** -0.0568	-0.548*** -0.137
SIZE	0.0190** -0.00736	0.0654*** -0.00933	0.0141** -0.00578	0.101*** -0.013	0.0107** -0.00519	0.0562*** -0.0086
DE	-0.0316** -0.0175	-0.409*** -0.0587	0.0905** -0.0464	-0.0945 -0.0869	0.0605** -0.0302	-0.154* -0.0806
INA		0.121*** -0.0464		0.121*** -0.0464		0.121*** -0.0464
ART		-0.434*** -0.1897		-0.5434*** -0.1897		-0.5434*** -0.1897
ROA	-0.646*** -0.161		-0.272 -0.172		-0.452*** -0.12	
Constant	-0.173 -0.129	1.555** -0.682	-0.0515 -0.0988	1.680** -0.682	0.022 -0.087	2.058*** -0.684
Fixed-Industry	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1164	1164	1164	1164	1164	1164
R-Squared	0.19	0.469	0.105	0.469	0.177	0.469

Table 4.5 shows regression results, variables definitions are given in the table 4.1. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4.6 2SLS Regression Results of DETR, Tobin's Q and

Variables	(DETR1) Model 1	(TobinsQ) Model 2	(DETR2) Model 3	(TobinsQ) Model 4	(DETR3) Model 5	(TobinsQ) Model 6
EDETR		-0.0411***		-0.0516***		-0.0252***
		0.0046		0.0045		0.007
DETR1_BIG4		0.0915***				
		0.0135				
DETR1_IAC		0.6401*				
		0.41				
DETR1_NED		0.0626***				
		0.01				
DETR2_BIG4				0.0923***		
				0.013		
DETR2_IAC				0.8147**		
				0.415		
DETR2_NED				0.0584***		
				0.0132		
DETR3_BIG4						0.0763***
						0.0241
DETR3_IAC						0.6829*
						0.416
DETR3_NED						0.0514**
						0.0219
ARRP	0.3261**	-0.7492**	-0.7345**	-0.6344***	-0.6912**	0.8893**
	0.156	0.361	0.351	0.216	0.213	0.447
MOS	0.1991***	0.5482***	0.2181***	0.7315***	0.0857**	0.1798***
	0.0484	0.0799	0.0313	0.211	0.0403	0.0665
ASSOCTOSP	0.0991***	-0.2894***	0.0817***	-0.1255**	0.0854***	-0.1115**
	0.0357	0.0537	0.0246	0.0123	0.0195	0.0414
BIG4	-0.0776**	0.0641**	-0.0955**	0.0757***	-0.0420**	0.0421**
	0.0353	0.0306	0.0462	0.0211	0.0199	0.0189
NED	-0.0851**	0.0692**	0.0593**	0.0732***	-0.0826***	0.0718***
	0.0312	0.0315	0.0271	0.0241	0.0299	0.0282
IAC	-0.0419**	0.0743**	-0.0229	0.0109	-0.0766***	0.0815
	0.0176	0.0378	0.0289	0.412	0.0252	0.0677
FG	-0.2053***	-0.2701**	-0.2024***	-0.9443***	-0.2235***	-0.5486***
	0.0611	0.112	0.0474	0.182	0.0568	0.137
SIZE	0.0190**	0.0654***	0.0141**	0.101***	0.0107**	0.0562***
	0.00736	0.00933	0.00578	0.013	0.00519	0.0086
DE	-0.2167	-0.409***	0.0805*	-0.0745	0.0705*	-0.254**
	0.275	0.0587	0.0564	0.0769	0.0412	0.0806
INA		0.1213***		0.1213***		0.1211***
		0.0464		0.0464		0.0464
ART		-0.1241***		-0.1441***		-0.1434***
		0.01897		0.01897		0.01897
ROA	-0.646		-0.272		-0.452	
	0.561		0.172		0.32	
Constant	-0.1731	0.5551	-0.0515	0.6801**	0.022	0.0581
	0.129	0.682	0.0988	0.682	0.087	0.684
Fixed-Industry	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1145	1145	1145	1145	1145	1145
R-squared	0.19	0.469	0.105	0.469	0.177	0.469

Table 4.6 shows regression results, variables definitions are given in the table 4.1. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1