Corporate Tax Aggressiveness, Corporate Governance and Firm Value: Evidences from China

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Abstract
Tax represents a significant cost to shareholders as well as to the firms, and it is generally expected tax aggressiveness are preferred. However, this argument ignores potential non-tax costs that could be associated with tax aggressiveness, especially those arising from agency problems and asymmetric information. This study investigates whether the tax planning activities is valued by shareholders as beneficial upon the nexus of institutional arrangements in place in China. An innovation of this study is making use of available tax reconciliation data to examine the effects of tax planning activities conducted by Chinese listed firms. This study investigates whether the tax planning activities is valued by shareholders as beneficial. Using a hand-collected sample of 229 publicly-listed firms for the financial years 2006-2012, we develop measures of abnormal book-tax differences (BTDs) as proxies for corporate tax aggressiveness. We find that the aggressive tax behavior is not perceived by shareholders as a value enhancing activity but in fact is value reducing. A consistent negative association between firm value and tax planning activities is found which is robust to a wide number of different controls and specifications as well as the inclusion of corporate governance measures; and the results are consistent with the agency cost theory of tax planning of Desai & Dharmapala (2006).

JEL classification: G30, H26, M41

Keywords: Tax Aggressiveness, Corporate Governance, Firm Value, China, Book-Tax Differences

1. Introduction

Tax planning activities are of significance both in terms of costs and tax savings. A wider concern related to governments' concerns over corporate tax avoidance is the issue of equity or fairness. For example, in the China the main statutory corporate tax rate has fallen from 33% in the 2006-7 tax years to 25% for the 2013-14 tax years. This is presumably as a consequence of tax competition among governments, and the relative mobility of corporate profits, relative to other tax bases, in terms of their ability to choose where taxes become payable. If corporations are additionally able to aggressively manipulate how much profit they declare for tax purposes, then this raises political issues. Companies must trade off political costs of tax avoidance with the cash flow gains in lowered tax payments (Zimmerman, 1983). If political costs of tax aggressiveness are low (for example, because "everyone is doing it"), then the incorporation of tax considerations into corporate governance arrangements may be one means by which companies may be encouraged to "pay their fair share" of taxation.

This study examines shareholders' valuation of corporate tax aggressive activities. In the absence of access to confidential tax return data we use the term tax aggressiveness or tax planning to describe the activities designed to maximize tax payment in order for tax benefits. Although tax reduction can lead to higher after-tax profits, in the real world, given the existence of uncertainty and information asymmetry, the objective of after-tax return maximization should encompass not only explicit taxes but also implicit taxes as well as other non-tax costs. Beyond the necessary resource allocation costs (that opportunity costs where resources are spent on tax management that could have gone to capital expenditures or R&Ds), there are additional costs associated with tax management such as political costs, disclosure costs, agency costs and financing costs, these implementation costs include legal costs, planning advice and risk (Minnick & Noga, 2010). A decline in reported earnings may affect managers' compensation and other interests, potentially leading to inconsistencies between interests of managers and those of shareholders and therefore increase agency costs. Similarly, Hanlon & Slemrod (2009) suggest political and financial costs are associated with tax aggressiveness. A well-known example of political cost with tax management is the board of directors of Stanley Works, Inc. reversing a decision to move its headquarters offshore to save tax dollars after being attacked by local politicians and media for the move (Minnick & Noga, 2010). Desai and Dharmapala (2009) suggest that earnings manipulation can be facilitated when managers undertake efforts to reduce corporate tax obligations via their study of the link between tax sheltering and various types of managerial opportunism. As a result, tax aggressiveness by firms is of wider public interest in terms of whether or not is valued by shareholders and investors.

The measure of tax aggressiveness used in this study is initially defined as abnormal book-tax differences arising from opportunistic differences due to managers' choice in accounting and tax purposes. Tang & Firth (2011 and 2012) define normal BTD (NBTDs) as the mechanical differences arising from the divergent reporting rules for book and tax purposes, signaling the extent of accounting-tax misalignment; alternatively, abnormal BTD (ABTDs) reflect the opportunistic differences due to managerial choices in accounting and tax reporting. The potential components of

BTDs are estimated by regressing BTDs on factors associated with normal BTD and are used to forecast normal NBTDs, and the unpredicted residual component considered to represent abnormal BTDs (Tang & Firth, 2011). In our study, we advances a new, refined method of separating firm book-tax differences (BTDs) into 'normal' and 'abnormal' components, we follow their concepts and disentangle BTDs into NBTDs and ABTDs that take account of the uniqueness of Chinese accounting and tax systems, by using a sample of Chinese listed firms from 2006 to 2012 and data drawn from the *Accounting Standard 18* (ASBE, 2006) tax reconciliations. The refined proxy for tax aggressiveness is examined against the measures of firm value as an analysis of shareholders' valuation of corporate tax aggressiveness. It should be recognized that there is no perfect measure of aggressive tax activities and different measures have their own strengths and weaknesses and none are inferior or superior to the other.

The contribution of this study is four fold. Firstly, we add to a stream of research providing evidence of effects of BTDs for financial reports in terms of the increased attention on firms' tax aggressive activities. To our knowledge, this is one of the few studies investigating shareholders' valuation of Chinese firms' tax aggressiveness and provides insights into corporate behaviors and the response of shareholders. The prior literature is mainly U.S. or U.K. based and does not necessarily translate to the Chinese context, the conclusion suggests the tax-related institutional and policy differences between Chia and most U.S. research when interpreting existing research. Secondly, this study follows the approach of Tang & Firth (2011) by using tax-effect BTDs and taking advantage of information available in the notes to tax reconciliations to model the book-tax differences and decompose between mechanical differences (NBTDs) and opportunistic differences (ABTDs). Previous studies have generally relied on a lower level of disaggregation such as Desai & Dharmapala (2006) and Frank *et al.* (2009). Thirdly, by applying recently available tax reconciliation data required under *Accounting standard 12 Income Taxes* (ASBE*,* 2006) and a sample of Chinese A-share listed firms in contrast to the study of Tang & Firth (2011),this study provide a new insight into the differences between income for financial reporting purposes and income for tax reporting purposes and non-conforming tax planning activities. Finally, the analysis is conducted over a seven year period thereby recognizing that the composition of aggressive tax activities and managers' attitudes towards tax aggressiveness may vary over time.

In sum, using a sample of Chinese listed firms from 2006 to 2012, we find evidence of a negative relationship between the level of tax aggressiveness and the proxy for firm value. The result is robust to a wide number of different controls and specifications as well as the inclusion of corporate governance measures, and the negative relationship is not moderated by corporate governance mechanisms, in consistent with the results found in UK setting (Wahab & Holland, 2012). The findings are also consistent with the agency cost theory of tax planning (Desai & Dharmapala, 2006).

The remainder of this study is organized as follows: Section 2 reviews the relevant literature. Section 3 discusses the research methods. Section 4 outlines our sample and empirical models as well as the results, followed by a conclusion in section 5.

2. Literature review

There is widespread concern and interest over the determinants and consequences of corporate tax aggressiveness. For example, Shackelford and Shevlin (2001) advocate research on the determinants of tax aggressiveness, and Graham (2008) calls for research to examine why firms do not pursue tax benefits more aggressively. These are definitely important research topics, but an important related issue is that there is no universally accepted empirically operational definition of tax 'aggressiveness'. In this section, discussion will be focused on the measurement of tax aggressiveness, primarily from financial statement data. As a broad range of proxies are currently applied in the literature, and the precise nature of the proxy used in tax aggressiveness research will have important policy and business implications, careful consideration needs to be given to whether the measure chosen in this study is appropriate for the particular research questions to be addressed.

In studying corporate tax planning and tax aggressiveness using publicly available information, it is difficult to obtain direct information about practices that may be proprietary in nature, sensitive or perhaps even illegal or bordering on illegality. Tax returns of individual corporations are not publicly available, and financial statements do not disclose the nature of underlying sheltering structures, which limits policy analysis and research on tax avoidance and aggressive tax strategies based on publically available data sources (Garbarino, 2011). Because of this, attempts to measure the extent to which a corporation engages in tax sheltering must use indirect measures, centered upon publicly-disclosed levels of tax expense, profitability and other accounting variables.

Tang& Firth (2011 and 2012) demonstrates that BTDs is value relevant for China's emerging market, and the current BTD literature suggest that BTDs may inform users of financial statements the extra unobservable information about managerial manipulation other than mechanical information about the divergence in accounting rules and tax laws (e.g. Mills,1998, Mills &Newberry 2001, Plesko, 2004, McGill & Outslay 2004). Furthermore, the study of earning management conducted by firms to balance tradeoffs among various tax incentives, tunneling incentives and financial reporting incentives on the choice between book-tax conforming and non-conforming tax management, which in turn influence opportunistic behaviors of managers in corporate reporting (Firth, Lo & Wong, 2013), suggest that book-tax differences are associated with upward tax management, which further validate the informational content of book-tax differences in tax planning.

There are two ways to measure total book-tax differences. On the one hand, the income-effect total book-tax differences are calculated as differences between after-tax book income and an estimate of taxable income (or the ratio between them) or, equivalently, the difference between what a firm *would have* paid, had all of its book income been subjected to tax, and what it *actually* paid. This measure usually includes all pre-tax book-tax differences, tax accounting accruals, research and development tax credits and other items which do not affect either income number but will affect (and cause errors in) estimates of taxable income from financial statements operating in jurisdictions with different tax rates (Hanlon & Heitzman, 2010); a common measure to estimate BTDs in most studies in US context is to estimate taxable income by grossing up the extracted firm's reported tax from financial

statements by a 'relevant' tax rate (e.g. Manzon & Plesko, 2002; Armstrong *et al.* 2012; Rego & Wilson, 2012; Khurana & Moser, 2013). On the other hand, the so-called 'tax-effect' BTDs which employ prima facie income tax expense minus current tax expense and the numerical example for comparison between these two measures can be seen in Tang & Firth (2011). These two measures of BTDs only differ in the matter of the statutory tax rate if a single statutory rate is applied; however, problems arise from the presence of multiple statutory tax rates in a jurisdiction. We follow the approach of tax-effect BTDs suggested by Tang & Firth (2011) as evidences that tax-effect BTDs are particularly appropriate in China due to the fact that Chinese firms are subject to variation in tax rates arising from differential favorable government tax treatment and are required to declare corporate income tax on an individual firm tax reporting basis.

Tax planning activities is of significance to both shareholders and firms. Traditionally, shareholders would like to minimize corporate tax payments net of costs in order to achieve firm value maximization, in other words, shareholders wants firms to be optimally aggressive in their tax reporting to benefit themselves. However, the underlying motivation has been questioned. It is argued by Desai & Dharmapala (2006) that a form of agency costs, for example, an information asymmetry between shareholders and managers in terms of corporate tax sheltering activities, can facilitate managers acting for their own interests resulting a negative relationship between tax aggressiveness and firm value; and a positive relationship between book-tax differences and Tobin's Q is found only for well-governed firms in Desai & Dharmapala (2009). Prior studies examining the association between the measure of tax aggressiveness and stock performance of firms provide evidences consistent with a negative relationship between tax aggressiveness and future firm performance (Lev & Nissim, 2004; Hanlon, 2005; Wahab & Holland, 2012). In contrast, some studies find no direct association between related measure of tax aggressiveness and measures of firm value; this may be due to the effect of unquantifiable non-tax costs (Cloyd, Mills & Weaver, 2003).

The empirical studies suggest that on average there is negative valuation implication of tax aggressiveness. In this study, we look for the association between book-tax differences and several measure of firm value in Chinese context, in order to study shareholders' valuation of tax aggressiveness. This study contributes to the growing book-tax differences literature, including the branch that examines the shareholder value of tax planning activities. Meanwhile, we will examine whether the valuation effects of tax aggressiveness depending on firms' *ex ante* strength of corporate governance, following the studies of Desai & Dharmapala (2009) and Wahab & Holland (2012). The finding can have direct policy implications for shareholders and tax authorities in monitoring and controlling tax planning activities of firms.

3. Research Method

3.1 Corporate tax aggressiveness measure: estimating NBTDs and ABTDs

BTDs are designed to measure the extent to which a firm is able to avoid paying tax on its accounting income. It is argued that the divergent rules between GAAP and tax laws are the most basic factor the drives BTD. However, besides the mechanical differences between GAAP and tax laws, BTD could also arise from tax avoidance

and/or earning management activities (Mills & Newberry, 2001; Desai & Dharmapala, 2006, 2009; Frank *et al.* 2009; Wilson, 2009; Chan *et al.* 2010; Tang & Firth, 2011; Armstrong *et al.* 2012; Badertscher *et al.* 2013). A more comprehensive analysis of BTDs would make BTDs as arising from following three sources:

> BTDs=difference between book income and taxable income
> = *mechanical BTDs + income due to non-tax conforming earning management + income from tax sheltering*

Some studies have attempted to use a residual approach decompose BTDs into 'normal' BTDs (mechanical differences between tax rules and financial accounting standards) and 'abnormal' BTDs (residual from total BTDs result from opportunistic differences due to managerial choices in accounting and tax rules), see details in Desai & Dharmapala (2006, 2009), Frank *et al.* (2009) and Tang & Firth (2011).This study advances a new, refined method of separating firm book-tax differences (BTDs) into 'normal' and 'abnormal' components by taking advantage of the information that is provided in the notes to the published financial statements. We follow their concepts and improve upon the existing literature, the purpose of our next step in measuring the extent of tax avoidance is to determine the a 'normal' level of BTDs in Chinese context that arise as a result of systematic differences between financial and tax reporting in order to arrive at an 'abnormal' BTDs by deducting this from total BTDs, in a way that takes the known features of uniqueness of Chinese corporate tax system into account. A reconciliation of pre-tax profit and tax expense allow us to avoid the measurement errors inherent in estimating BTDs which is relevant for income-effect BTDs (See details in Tang & Firth, 2011). The hypothesized drivers for these BTDs take into account of the tax adjustment items on tax forms of Chinese income tax laws are listed in Appendix 1.
(Insert Appendix 1)
As a result, the estimation equation is as follows:

$$BTD_{it}=\alpha_0+\alpha_1 TURNOVER_{it}+\alpha_2 OPE_{it}+\alpha_3 OPEPROFIT_{it}+\alpha_4 TOTALPROFIT_{it}+\alpha_5 LAG1PROFIT_{it}+\alpha_6 LAG2PROFIT_{it}+\alpha_7 INV_{it}+\alpha_8 ASSETS_{it}+\alpha_9 INTEREST_{it}+Year+IND+\varepsilon_{it}$$

--------Equation (1)

The dependent variable BTD_{it} is the sum of the BTD categories in Appendix 1 disclosed by our sample firms. For consistent comparisons across the pre and post 2008 tax reform periods, all BTD values are rescaled by dividing their respective corporate tax rate for each firm-year observation. The variables to control for mechanical differences are collected from firms' financial statements including (e.g. Dai & Yao, 2006; Manzon & Plesko, 2002; Frank *et al.* 2009; Wilson, 2009; Tang & Firth, 2011) the net sales ($TURNOVER_{it,}$); the operating expenses (OPE_{it}); the operating profit before interests and taxes ($OPEPROFIT_{it}$); the pre-tax profit ($TOTALROFIT_{it,}$); the prior one-year lagged pre-tax profit ($LAG1PROFIT_{it}$); the prior two year lagged pre-tax profit ($LAG2PROFIT_{it}$); the total investment income(INV_{it});the total assets which is measured by its logarithmic form ($ASSETS_{it}$) and the finance interest income ($INTEREST_{it}$). YEAR and IND are the Year and industry dummies. α is the regression intercept. All variables are scaled by the lagged total assets except for ASSETS and robust standard errors by clustering on each firm (Chen & Al-Najjar, 2012) are applied. Finally, our tax aggressiveness measure "Abnormal BTD" or "ABTD" hereafter is calculated as the actual BTD minus the

fitted values of this BTD regression model, which is also the residual ε_{it} from this OLS regression.

3.2 Shareholder's valuation tests

We employ several market-related valuation proxies taken from prior literature, including Tobin's Q in the model. Within this literature studying the value implications of corporate tax planning, it has become the standard to use Tobin's Q to measure firm value (Desai & Dharmapala, 2009). The measure of Tobin'Q[1]is included with its definition of q is discussed below. The control variables are mainly related to agency costs and information asymmetry as well as several firm-specific characteristics in line with taxation literatures (Desai & Dharmapala 2009; Wahab & Holland, 2012; Tang & Firth, 2012) for example, dividend payout ratio (DP), capital intensity (CAPINT), leverage (LEV), earning management (EM), dummy variable for tax loss (LOSS), and firm size (LNTA). The initial model incorporating the proxy for tax planning and related control variables as follows in equation (2):

Tobin's $Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + \text{YEAR} + \text{IND} + \varepsilon_{it}$

---equation (2)

To assess whether the corporate governance factors have potential effect on the valuation of corporate tax planning, the above model is extended by including three corporate governance related variables INST, INDEP and OC following the studies of Desai & Dharmapala (2009) and Wahab & Holland (2012) as follows:

Tobin's $Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + \beta_9 INST_{it} + \beta_{10} INDEP_{it} + \beta_{11} OC_{it} + \text{YEAR} + \text{IND} + \varepsilon_{it}$

---equation (3)

The final model is extended by the inclusion of three interaction variables ABTD*INST, ABTD*INDEP and ABTD*OC by multiplying a firm's tax planning variable by INST, INDEP and OC variables respectively, in order to assess whether the relationship between tax planning and firm value is moderated by the strength of firms' corporate governance structures.

Tobin's $Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + \beta_9 INST_{it} + \beta_{10} INDEP_{it} + \beta_{11} OC_{it} + \beta_{12} \text{ABTD*INST}_{it} + \beta_{13} \text{ABTD*INDEP}_{it} + \beta_{14} \text{ABTD*OC}_{it} + \text{YEAR} + \text{IND} + \varepsilon_{it}$

---equation (4)

[1]Tobin's Q (TOBINQ1) that is applied for the main regressions in Table 4 is measured as market value A divide by ending total assets, where market value A consists of market value of equity plus market value of net debt, net assets is used to calculate the market value of the equity, denoted by null if the numerator has no value. We also apply another measure of Tobin's Q (TOBINQ2) as a robustness test, which is calculated as market value B divide by ending total assets, where market value B consists of market value of equity plus market value of net debt, negotiable share price is used to calculate the market value of the equity. Regressing TOBINQ2 into the independent variables in model 1, 2 and 3 produce qualitatively similar coefficients to the results reported inTable 4. Furthermore, industry-adjusted Tobin's Q (Firth *et al,* 2013) is also applied in the main regression models, the results are unaffected.

The dependent variable Tobin's Q_{it} is the proxy for the market value. $ABTD_{it}$ is the residuals from the BTD model in equation (1) which stands for abnormal BTD[2]. Corporate governance variables include: $INST_{it}$ is the percentage of institutional investor shareholding, $INDEP_{it}$ is the number of independent directors on the board and OC_{it} is the total percentage of top 10 shareholder shareholdings as ownership concentration measure. We further include a set of control variables, industry dummy IND and year dummies YEAR in the models. We include LEV_{it} to measure a firm's leverage level in order to capture the impact of the firm's capital structure on firm risk and the extent of the tax shield of debt (Hanlon *et al*, 2008; Frank *et al*, 2009; Armstrong *et al*, 2012),which is measured as total liabilities divided by total assets. We include DP_{it} which is measured as dividend per share divide by earning per share and $CAPINT_{it}$ which is measured as fixed assets divide by total assets to control for agency costs and information asymmetry. We include $LOSS_{it}$ to capture a firm's current profitability and whether loss firms have greater incentive to engage in aggressive tax strategies (Chan *et al*., 2010; Tang and Firth 2011; Badertscher *et al*, 2013), which is a dummy variable that equals to 1 when a consolidated entity has a loss in the current year t and 0 otherwise. The log of total assets as a measure of $LNTA_{it}$ is added to capture changes in the scale or size of the firm and also as a proxy for the benefits of tax sheltering (Wilson, 2009; Armstrong *et al*, 2012; Tang & Firth, 2012; Khurana & Moser, 2013). The return on equity ROE_{it} is added to control for firm's profitability. Finally, measure for earning management (EM_{it}) measured as the difference between profit before tax and operating cash flow is added to control for Chinese listed firms' engagement in earning management for financial reporting purpose, due to the fact that ABTD can be indicative of both earning management and tax management (Mills and Newberry, 2001; Phillips *et al*. 2003; Hanlon, 2005; Frank *et al*, 2009; Tang and Firth, 2011; Firth *et al*., 2013).

4. Empirical results and discussion

4.1 Sample and models

We collect data on financial statements and corporate governance from the CSMAR database from 2006 to 2012 as BTDs data were not available before 2006. Panel A of Appendix 2 outlines the sample selection procedures. The sample by year and by industry is shown in panels B and C. Table 1 reports the summary statistics and correlation matrix for the variable applied in the BTDs. Panel B of Table 1 shows that, regardless of the positive and negative BTDs, the mean BTD is biggest in 2008 which indicates strong tax management responding to the change of tax laws. Table 2 shows the descriptive statistics of the variables in equation 2 to 4 in Panel A and Pearson correlations among these variables in Panel B. We test for multi-collinearity by calculating variance inflation factors and all of the VIFs are under 10, which suggest that multi-collinearity does not appear to be a potential problem.

[2] For robustness check, we also repeat all regressions using ABTD based on unadjusted BTD values calculated from equation 1. Our findings are unaffected.

4.2 Results

Table 3 reports the BTDs model OLS regressions as in equation (1). Six out of eight variables are significant in OLS regression, the signs on TOTALPROFIT, INV and ASSETS are positive and the signs on OPEPROFIT, LAG1PROFIT and LAG2PROFIT are negative. The model explains around 45% of the variations in BTD. As a robustness check, we also run separate regressions for positive and negative BTDs and find similar results. This indicates that our model is a good fit for tax management in either direction. We use the residual calculated from the BTD model in equation (1) as the "abnormal BTD" measure ABTD, our proxy for tax aggressiveness.

Table 4 reports our basic results on shareholders' value and tax aggressiveness. The first two models show that a significant negative association between tax planning and firm value, which is robust to control for firm-specific characteristics (model 1) and corporate governance measures in model 2. The results is consistent with Desai & Dharmapala's (2006) agency cost theory of tax planning that that managers are provided incentives for own benefits at the expense of shareholders when there is a lack of transparency associated with tax planning activities. The positive significant coefficient with respect to INST is consistent with Yuen & Zhang (2008) and Yang, Chi &Young (2011) on the increasingly effective monitoring role played by Chinese institutional investors. It can be argued that the negative relationship between tax planning and firm value may increase non-linearly (Hanlon & Slemrod, 2009; Wahab & Holland, 2012), as a result, model 1 and 2 were re-estimated with the inclusion of square term defined as ABTD*ABTD, the inclusion of this quadratic tax planning variables did not change the results reported previously (See Table 4).

Model 3 incorporate[3] three interaction variables ABTD*INST, ABTD*INDEP and ABTD*OC to examine whether the relationship between tax planning and firm value depends upon the strength of corporate governance mechanisms. The results shows that the previously negative significant relationship between tax planning and firm value still holds, in contrast with studies of Desai and Dharmapala (2009). The three interaction variables contribute little in terms of their additional explanatory power when comparing the adjusted R^2 for model 3 with that of model 2. As an additional test of the potential effect of corporate governance structure, model 1 was examined separately for firm-years observations with high and low levels of institutional ownership, with regard to the 'high' and 'low' corporate governance effectiveness, following the studies of Desai and Dharmapala (2009), where high institutional ownership is defined as being a fraction that exceeds the median value of its institutional ownership. The results are reported in the final two columns of Table.

[3]The recent change in Chinese tax regime that reducing the corporate income tax rate from 33 percent to 25 percent, that was effective in 2008 provided an opportunity to explore whether shareholders change their valuation of firms' tax planning activities in response to the change in tax enforcement (Jimenez-Augueira, 2008; Yuan, McIver & Burrow, 2012). It was conjectured that the outcome of those tax changes was to increase the value that shareholders attached to tax planning in the post-2008 period due to the more stringent tax regulatory environment and benefits from tax rate reduction. TR is a dummy variable with 1 stands for period 2008 to 2012 and 0 stands for period 2006 to 2007, and The interaction term (TR*ABTD) between TR and ABTD, is our main variable of interest. The model is as follows with unbalanced panel data from 2006 to 2012: Tobin's $Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + + \beta_9 TR_{it} + \beta_{10} TR*ABTD_{it} +$YEAR+ IND $+\varepsilon_{it}$. Due to the insignificance of the variable of interest TR*GOV, the regression results are not reported)

Both estimations report negative relationship between tax planning and firm value, although coefficient on ABTDs is significant in the subsample of high levels of institutional ownership. In contrast to Desai and Dharmapala (2009), these results suggest that corporate governance structure does not mitigate the negative relationship between firm value and tax planning even in the case of 'high' (well-governed) governance firms (Wahab & Holland, 2012).

5. Conclusion

Recent widespread earning manipulations, tax sheltering activities and pervasive accounting scandals have drawn much attention from academics, regulators and users of financial information. Prior studies have documented that large book-tax differences are' red flags' to investors, tax authorities as well as credit agencies (Lev & Nissim, 2004; Hanlon, 2005; Wilson, 2009; Ayers *et al.* 2010).

The study examines the shareholder valuation of tax aggressiveness, as it is not clear whether benefits of firms' tax planning activities accrue to the firms' shareholders or its managers in the Chinese corporate environment, while the latter party exploit the tax aggressive positions for the own benefits at the expense of their firms' shareholders due to the separation of ownership and control. This study extends the existing literature in China with its unique institutional characteristics that are different from those in the developed world. This study follows the approach of Tang & Firth (2011) by using tax-effect BTDs and taking advantage of information available in the notes to tax reconciliation to model the difference between income for financial reporting purposes and income for tax reporting purposes and decomposing between mechanical differences (NBTDs) and opportunistic differences (ABTDs). Based on a hand collected sample of 229 publicly listed Chinese firms over the 2006 to 2012 period, the basic idea of this study is to refine the procedures to estimate normal and abnormal BTDs from a firm, the fitted value from the modeled regression give rise to NBTDs and the residuals are the ABTDs which are presumed to arise as a result of earning management and tax planning. This residual approach is of significance to isolate managers' opportunistic behaviors and the empirical evidences provide new insights to help explain the informational content of book-tax differences. Then we will use the refined decomposition of tax liability to examine the relationship between abnormal BTDs and the proxy for firm value.

Our empirical conclusion extends prior studies that aggressive tax behavior is not perceived by shareholders as a value enhancing activity (Desai & Dharmapala 2009; Hanlon & Slemrod, 2009; Wilson, 2009) but in fact is value reducing (Wahab & Holland, 2012). A consistent negative association between firm value and tax planning activities is found which is robust to a wide number of different controls and specifications as well as the inclusion of corporate governance measures; and the results are consistent with the agency cost theory of tax planning of Desai & Dharmapala (2006). With regards to the shareholder valuation of tax aggressiveness, the inferences were based on an association test which may cause problem due to the omitted correlated variables; meanwhile, the factors used to capture the corporate governance structure are far from perfect and further criteria imposed to split firms into subgroups are required by researcher (Jimenez-Augueira, 2007).

Appendix 1: Hypothesized drivers of BTDs

	Category of BTD	Hypothesized Drivers of Category	Proxy variables
1	Income not taxable	Investment income and Finance income	INV_{it} $INTEREST_{it}$
2	Expenses not deductible	Industry membership; operating expenses.	OPE_{it}
3	The effect of the application of a different tax rate to income, either because it is generated abroad or because it is subject to a different domestic tax rate	Profit before exceptional items; turnover; total assets all by geographical segment.	$TURNOVER_{it}$ $ASSETS_{it}$ $OPEPROFIT_{it}$
4	Prior year adjustments	Prior two years' lagged pre-tax profit.	$LAG1PROFIT_{it}$ $LAG2PROFIT_{it}$
5	Utilization of brought-forward tax losses (Recognition of previous unrecognized losses)	Current period pre-tax profit and two lags of pre-tax profit.	$TOTALPROFIT_{it}$ $LAG1PROFIT_{it}$ $LAG2PROFIT_{it}$
6	Current period tax losses carried forward (Current period unrecognized losses)	Current period pre-tax profit and two lags of pre-tax profit.	$TOTALPROFIT_{it}$ $LAG1PROFIT_{it}$ $LAG2PROFIT_{it}$
7	Taxation of capital gains and losses	Accounting gains on sale of fixed assets	N/A
8	Other permanent differences	Try a combination of the previous drivers	N/A

Appendix 2: Sample selection

Panel A: pooled sample	
Firm-year observations for both A share and B share firms between 2006 and 2012	10640
less observations without annual reports	315
Less B-shares observations have the same data with A shares	294
less observations with insufficient data to calculate book-tax differences (firms did not disclose the tax reconciliation in their notes to financial statements)	8818
Less observations in financial and insurance industries	133
Final sample	1080
Panel B: sample by year	
2006	106
2007	127
2008	156
2009	170
2010	195
2011	193
2012	133
Panel C: Sample by Industry	
Farming, forestry, animal husbandry and fishery	0
Mining	67
Manufacturing	491
Utilities	71
Construction	36
Transportation and warehousing	133
Information technology	54
Wholesale and retail trade	43
Finance and insurance	0
Real estate	106
Social service	46
Communication and cultural industries	16
Conglomerates	17

Table 1: Descriptive statistics for the BTD model

Panel A: Descriptive statistics for BTD model

Variables	Obs	Mean	Std. Dev	Max
BTD	1080	0.014	0.288	7.800
TURNOVER	1080	0.724	0.488	3.604
OPE	1080	0.673	0.489	3.543
OPRPROFIT	1080	0.061	0.067	0.339
TOTALPROFIT	1080	0.059	0.069	0.665
Lag1PROFIT	1052	0.051	0.072	0.763
LAG2PROFIT	1024	0.087	1.469	46.981
INV	1022	0.010	0.022	0.279
ASSETS	1080	-1.532	1.675	3.738
INTEREST	1074	0.002	0.002	0.016

Panel B: Descriptive statistics for BTDs

	Full sample BTDs		Positive BTDs		Negative BTDs	
Year	Obs	Mean	Obs	Mean	Obs	Mean
2006	106	0.034	77	0.050	29	-0.006
2007	127	0.008	92	0.014	35	-0.007
2008	156	0.051	86	0.096	70	-0.005
2009	170	0.023	91	0.048	79	-0.006
2010	195	-0.005	125	0.007	70	-0.026
2011	193	0.001	119	0.004	74	-0.004
2012	133	0.000	70	0.004	63	-0.004
2006-2012	1080	0.015	660	0.029	420	-0.008

Variable definitions are as follows: BTD is the reported tax-effect total BTDs; OPE is the operating expenses; OPEPROFIT is the operating profit before interests and taxes; TOTALPROFIT is the pre-tax profit; LAG1PROFIT is the prior one year lagged pre-tax profit and LAG2PROFIT is the prior two year lagged pre-tax profit; INV is the total investment income; ASSETS is the log of (total assets divided by the average total assets across the whole sample); INTEREST is the finance interest income.

Table 2: Summary statistics for variables in shareholder value and ABTD model

Panel A:Summary statistics for variables

Variables	Obs	Mean	Std Dev	Min	Max
TOBINQ	1046	1.591	1.960	0.397	57.510
ABTD	958	0.000	0.008	-0.055	-0.030
LEV	1054	0.519	0.201	0.014	1.375
EM	1054	-0.628	0.099	-0.452	0.905
LOSS	1073	0.072	0.259	0.000	1.000
LNTA	1054	10.038	0.726	7.325	12.336
DP	721	0.766	5.859	0.001	154.410
ROE	1044	0.077	0.334	-8.889	0.661
CAPINT	1054	0.305	0.210	0.000	0.861
INST	1024	0.454	0.257	0.000	0.982
INDEP	1044	0.369	0.064	0.091	0.800
OC	1051	0.635	0.178	0.148	1.018

Panel B: Pearson Correlation Matrix for ABTD model

	TOBINQ	ABTD	LEV	EM	LOSS	LINA	DP	ROE	CAPINT	INST
ABTD	-0.308									
LEV	-0.151	0.132								
EM	0.081	0.194	0.097							
LOSS	-0.016	-0.087	0.165	-0.192						
LNTA	-0.318	0.289	0.298	-0.039	-0.084					
DP	-0.021	0.065	0.014	-0.001	0.131	0.045				
ROE	0.022	0.082	-0.133	0.109	-0.367	0.072	-0.107			
CAPINT	-0.082	0.049	-0.090	-0.352	0.125	0.132	0.054	-0.038		
INST	0.031	0.013	0.039	-0.043	-0.131	0.295	0.007	0.102	-0.012	
INDEP	-0.067	0.077	0.162	0.106	0.035	0.248	0.029	-0.057	-0.151	0.015
OC	-0.158	0.161	0.013	-0.179	-0.065	0.503	0.048	0.083	0.227	0.066

Table 3: Estimated coefficients from BTD model

Dependent Variables	BTD	Positive BTD	Negative BTD
	(1)	(2)	(3)
OPE	0.000	0.000	-0.001
	(0.24)	(0.41)	(-0.36)
OPEPROFIT	-0.091***	-0.119***	-0.058**
	(-4.89)	(-5.76)	(-2.14)
TOTALPROFIT	0.169***	0.155***	0.144***
	(8.71)	(7.48)	(3.92)
Lag1PROFIT	-0.017***	-0.004	-0.022***
	(-3.09)	(-1.04)	(-3.18)
LAG2PROFIT	-0.020***	-0.013**	-0.016
	(-2.77)	(-1.96)	(-0.77)
INV	0.063***	0.049***	0.004
	(3.39)	(3.28)	(0.15)
ASSETS	0.001***	0.000	0.002***
	(4.10)	(0.25)	(4.47)
INTEREST	-0.155	-0.269***	-0.023
	(-1.55)	(-2.58)	(-0.15)
Intercept	0.002*	0.004***	0.000
	(1.82)	(2.94)	(-0.03)
Observations	958	586	372
R-square	0.448	0.512	0.453
Year dummies	controlled	controlled	controlled
Industry dummies	controlled	controlled	controlled

Note: All variables are scaled by total assets except total assets itself. Numbers in brackets are reported t-statistics based on robust standard errors. *,**,*** denote significance at 10%, 5% and 1%, respectively. Variable definitions follow Table 1.

Table 4: shareholder value and tax aggressiveness where ABTD is the residuals from BTD model

	Shareholder value and tax aggressiveness	Potential effect of corporate governance factors on valuation of tax aggressiveness	moderating strength of corporate governance structure on the relationship between firm value and tax aggressiveness			moderati corporat struct relation firm va aggre
				High institutional ownership	Low institutional ownership	
Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-201
Dependent variables	TOBINQ 1	TOBINQ 1	TOBINQ1	TOBINQ 1	TOBINQ 1	TOBINQ
ABTD	-0.225***	-0.186***	-1.31***	-0.235**	-0.058	-0.186***
	(-3.54)	(-3.16)	(-3.80)	(-2.55)	(-1.12)	(-3.02)
ABTD*ABTD						0.137**
						(2.31)
LEV	-0.731***	-0.9***	-0.66***	-1.54***	-0.046	-0.662***
	(-3.65)	(-4.18)	(-3.63)	(-4.54)	(-0.26)	(-3.23)
EM	0.046	0.192	-0.02	0.019	0.891*	0.09
	(0.12)	(0.52)	(-0.26)	(0.03)	(1.96)	(0.24)
LOSS	0.363**	0.238***	0.263***	0.719***	-0.06	0.297*
	(2.07)	(3.22)	(3.3)	(4.24)	(-0.15)	(1.93)
LNTA	-0.341***	-0.367***	-0.434***	-0.337***	-0.409***	-0.341***
	(-7.28)	(-6.52)	(-8.74)	(-4.31)	(-8.44)	(-7.74)
DP	0.007***	0.006***	0.04**	0.007***	0.012	0.005***
	(3.77)	(3.2)	(2.07)	(3.87)	(0.6)	(3.61)
ROE	3.58***	2.87***	1.93***	3.75***	1.91***	2.95***
	(7.18)	(6.36)	(4.7)	(5.68)	(3.66)	(6.43)
CAPINT	-0.221	-0.301**	-0.304**	-0.305	-0.047	-0.152
	(-1.49)	(-1.99)	(-2.10)	(-1.44)	(-0.30)	(-1.03)
INST		0.966***	1.01***			
		(7.99)	(7.99)			
INDEP		-0.047	-0.126			
		(-0.14)	(-0.34)			
OC		-0.858***	-0.849***			
		(-4.03)	(-4.27)			
INST*ABTD			-0.663***			
			(-2.76)			
INDEP*ABTD			1.525*			
			(1.94)			
OC*ABTD			1.39***			
			(3.26)			
Intercept	4.685***	5.41***	6.10***	4.89***	5.424***	4.67***
	(9.72)	(11.23)	(12.44)	(6.05)	(10.29)	(10.31)

Observations	663	641	644	379	284	663
R-square	0.459	0.525	0.577	0.513	0.502	0.48

Note: All variables are deflated to control for any scale effects. Numbers in brackets are reported t-statistics for respective coefficients. Model results are based on robust standard error to control for heteroscedasticity and serial correlation. Asterisks *,**,*** denote two-tailed statistical significance at 10%, 5% and 1%, respectively. Variable definitions: ABTDit are derived from BTDs model, figures in ABTDit are all multiplied by 100 for scale effects; TOBINQit is measured as market value A divide by the ending total assets; OCit is the ownership concentration, INSTit is the institutional shareholding; INDEPit is the percentage of directors who are independent; LEVit is the leverage ratio; LOSSit is a dummy variable that is equal to 1 if firm i reports a loss, where loss is net income before extraordinary items and 0 otherwise; EMit is the earning management measure which is calculated as profit before tax-operating cash flow; LNTAit is log of the total assets at the fiscal year-end t; ROEit is return on equity which is proxy for firm profitability; DPit is the dividend payout ratio which is calculated as the dividends per share divide by earning per share; CAPINTit is the capital intensity, which is calculated as the fixed assets divide by total assets; Year and industry dummy variables are also included in models.

Table 6: Other measures of Market Value

Year	2006-2012	2006-2012
Dependent variables	CFO	VOL
ABTD	-0.139**	0.014**
	(-2.04)	(2.39)
LEV	-0.632***	0.098***
	(-3.22)	(3.58)
EM	0.09	0.193***
	(0.19)	(3.96)
LOSS	0.112	0.018
	(0.55)	(0.66)
LNTA	-0.324***	-0.059***
	(-5.64)	(-8.13)
DP	0.006***	-0.004*
	(3.67)	(-1.77)
ROE	2.07***	0.138**
	(3.19)	(2.18)
CAPINT	-0.027	0.05**
	(-0.16)	(2.35)
Intercept	4.62***	0.931***
	(8.13)	(12.48)
Observations	663	641
R-square	0.293	0.718
Year dummies	controlled	controlled
Industry dummies	controlled	controlled

Note: All variables are deflated to control for any scale effects. Numbers in brackets are reported t-statistics for respective coefficients. Model results are based on robust standard error to control for heteroscedasticity and serial correlation. Asterisks *,**,*** denote two-tailed statistical significance at 10%, 5% and 1%, respectively. ABTDit are derived from BTDs model in previous section, figures in ABTDit are all multiplied by 100 for scale effects; CFOit is the cash flow capacity measured as cash flow from operating activities divide by ending total assets; VOLit is the volatility of monthly return which measure total risk associated with a firm's stock price.

Reference

ARMSTRONG, C. S., BLOUIN, J. L. & LARCKER, D. F. 2012. The incentives for tax planning. *Journal of Accounting and Economics,* 53**,** 391-411.

ASBE. 2006. Accounting standards for business enterprises. Available: http://www.casc.gov.cn/kjfg/200607/t20060703_337130.htm.

BADERTSCHER, B. A., KATZ, S. P. & REGO, S. O. 2013. The Separation of Ownership and Control and Corporate Tax Avoidance. *Journal of Accounting and Economics,* 56**,** 228-250.

CHAN, K. H., LIN, K. & MO, P. L. L. 2010. Will a departure from tax-Based accounting encourage tax noncompliance? Archival evidence from a transition economy. *Journal of accounting and economics,* 50**,** 58-73.

CHEN, H. R. & AL-NAJJAR, B. 2012. The determinants of board size and independence: evidence from China. *International Business Review,* 21**,** 831-846.

CLOYD, C. B., MILLS, L. F. & WEAVER, C. D. 2003. Firm valuation effects of the expatriation of US corporations to tax-haven countries. *Journal of the American Taxation Association,* 23**,** 87-109.

DAI, D. M. & YAO, S. Y. 2006. An analysis on the book-tax differences and its institutional factors: empirical evidence from listed companies in China (In Chinese). *Journal of Finance and Economics,* 32**,** 48-59.

DESAI, M. A. & DHAMMIKA, D. 2009. Corporate tax avoidance and firm value. *Review of Economics and Statistics,* 91**,** 537-546.

DESAI, M. A. & DHARMAPALA, D. 2006. Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics,* 79**,** 145-179.

FIRTH, M., LO, A. W. Y. & WONG, R. M. K. 2013. Earnings Management Choices in Response to Tax Rate Increases. *Working Paper***,** 1-44.

FRANK, M. M., LYNCH, L. J. & REGO, S. O. 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *Accounting Review,* 84**,** 1-47.

GARBARINO, C. 2011. Aggressive tax strategies and corporate tax governance: an institutional approach. *European Company and Financial Law Review,* 8**,** 277-304.

GRAHAM, J. 2008. *Taxes and corporate finance,* Amsterdam, Elsevier Science.

HANLON, M. 2005. The persistence and pricing of earnings, accruals, and cash flows when firms have large book-tax differences. *Accounting Review,* 80**,** 137-166.

HANLON, M. & HEITZMAN, S. 2010. A review of tax research. *Journal of Accounting and Economics,* 50**,** 127-178.

HANLON, M., MAYDEW, E. L. & SHEVLIN, T. 2008. An unintended consequence of book-tax conformity: a loss of earning informativeness. *Journal of accounting and economics,* 46**,** 294-311.

HANLON, M. & SLEMROD, J. 2009. What does tax aggressive signal? Evidence from stock price reaction to news about tax aggressiveness. *Journal of Public Economics,* 93**,** 126-141.

JIMENEZ-ANGUEIRA, C. E. 2007. Tax Environment Changes, Corporate Governance, and Tax Aggressiveness. 1-55.

KHURANA, I. & MOSER, W. J. 2013. Institutional Shareholders' Investment Horizons and Tax Avoidance. *The Journal of the American Taxation Association,* 35**,** 111-134.

LEV, B. & NISSIM, D. 2004. Taxable income, future earnings, and equity values. *Accounting Review,* 79**,** 1039-1074.

MANZON, B. & PLESKO, G. A. 2002. The relation between financial and tax reporting measures of income. *Tax Law Review,* 55**,** 175-214.

MCGILL, G. & OUTSLAY, E. 2004. Lost in translation: Detecting tax shelter activity in financial statements. *Tax Notes* 96**,** 1125-1146.

MILLS, L. F. 1998. Book-tax differences and internal revenue service adjustments. *Journal of Accounting Research,* 36**,** 343-356.

MILLS, L. F. & NEWBERRY, K. J. 2001. The influence of tax and non-tax costs on book-tax reporting differences: Public and private firms. *Journal of the American Taxation Association* 23**,** 1-19.

MINNICK, K. & NOGA, T. 2010. Do corporate governance characteristics influence tax management? *Journal of Corporate Finance,* 16**,** 703-718.

PHILLIPS, J., PINCUS, M. & REGO, S. 2003. Earnings management: New evidence based on deferred tax expense. *Accounting Review,* 78**,** 491-521.

PLESKO, G. 2004. Corporate tax avoidance and the properties of corporate earnings. *National Tax Journal,* 57**,** 729-737.

REGO, S. & WILSON, R. J. 2012. Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research,* 50**,** 775-810.

SHACKELFORD, D. A. & SHEVLIN, T. 2001. Empirical tax research in accounting. *Journal of Accounting and Economics,* 31**,** 321-387.

TANG, Y. H. & FIRTH, M. 2011. Can book-tax difference capture earnings management and tax management?empirical evidence from China. *The International Journal of Accounting,* 46**,** 175-204.

TANG, Y. H. & FIRTH, M. 2012. Earnings Persistence and Stock Market Reactions to the Different Information in Book-Tax Differences: Evidence from China. *The International Journal of Accounting,* 47**,** 369-397.

WAHAB, A. & HOLLAND, K. 2012. Tax planning, corporate governance and equity value. *British Accounting Review,* 44**,** 1-43.

ZIMMERMAN , J. L. 1983. Taxes and Firm Size. *Journal of Accounting and Economics,* 5**,** 119-149.

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