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Corporate Governance and Tax Strategies in Chinese Listed Firms

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ABSTRACT

Tax represents a significant cost to shareholders as well as to the firm, 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 aims to investigate the influence of corporate governance on tax aggressiveness of listed Chinese firms by adopting an agency perspective of the firm based upon the nexus of institutional arrangements in place in China. An innovation of this study is making use of available income tax reconciliation data to examine the determinants and effects of tax planning activities conducted by Chinese listed firms. We hand-collected a sample of 229 publicly-listed firms over the 2006-2012 period (1080 firm-year observations). This study advances a new, refined method of separating company book-tax differences (BTDs) into a 'normal' component of BTDs that arises as a result of divergence between Chinese GAAP and tax rules, and an 'abnormal' BTD component which is presumed to arise a result of earning management and tax planning. When using the refined decomposition of tax liability to examine the effects of corporate governance variables, we find that firms with political connections through controlling shareholder and through the state ownership are more tax aggressive than other firms. Our results suggest that political connections are a significant determinant of abnormal book-tax differences and their impacts should be accounted for in 'relationship-based' economies. In addition, incentive compensation appears to be another significant determinant of tax aggressiveness. In particular, we find that increase in managerial cash compensation tend to reduce the level of tax aggressiveness in a manner consistent with the optimal contracting view, which contribute to our overall understanding of the role of incentive compensation that plays in motivating managers' efforts. The empirical findings have direct policy implications for shareholders and tax administration in controlling and monitoring firms' tax planning activities.

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1.0 Introduction

1.1 Research Background

Interests in the study of corporate governance have been rapidly growing and inter-disciplinary, with much of work being varied not only from economics and finance, but also from management, accounting and law.

However, there lacks any accepted theoretical base or commonly accepted paradigms yet in corporate governance study (Parum, 2005; Harris and Raviv, 2008). Following the two pioneering works by Berle and Means (1932) and Coase (1937), major contributions have since been made in the areas of agency theory (Jensen & Meckling, 1976), the theory of incomplete contracts (Williamson, 1975, 1985; Grossman & Hart, 1986; Hart & Moore, 1990), transaction cost theory (Williamson, 1975, 1985) and property right theory (Alchian & Demsetz, 1972; Grossman & Hart, 1986; Hart & Moore, 1990), all these theories stem from diverse perspectives and essentially affect our views on what is a firm and its interests inherent in a firm. As a result, the analysis and development of corporate governance has been affected by multiple different theoretical frameworks, originating from a range of disciplines including finance, economics, accounting, management, law, sociology and organizational behavior. Using various terminologies, these frameworks view corporate governance from different perspectives.

Corporate governance in China has evolved since the late 1970s as an essential part of the SOEs restructuring. It is widely agreed that Chinese corporate governance was based upon unique institutional arrangements which is deeply originated from China's political system (Qiang, 2003). The main specific characteristic of the corporate governance of Chinese publicly listed companies (PLCs) is the separation of the ownership (Jing & Martin, 2007). It is argued by Qiang (2003) that the concern of loss of government control and state assets at the very beginning of restructuring Chinese SOEs into PLCs has resulted in the ownership of Chinese listed firms being divided into three major types, the state, legal persons and individuals. On average, each group held about a one-third share of companies, resulting in only around 35 percent

of total shares being freely tradable. A fairly large number of studies have investigated aspects of corporate governance in China, such as Qian (1995), Qiang (2003), Sun & Tong (2003), Bai *et al.* (2004), Firth *et al.* (2006), Gunasekarage *et al.* (2007), Yuan *et al.* (2008, 2009) and Chen *et al.* (2009a,b). Corporate governance is only part of the larger economic context and its framework also depends upon the legal, tax, institutional and regulatory environment and most research attention in the area of empirical and theoretical corporate tax research has been centered on how taxes influence capital structure, investment decisions and dividend policies. However, studies on the interaction of corporate governance and taxation appear scant (Desai & Dharmapala, 2008; Owens, 2008).

Tax and corporate governance issues can intersect in several different contexts. One set of issues is the ways to ensure that tax does not encourage behaviors that are conflicted with the interests of the firm and/or of its all stakeholders in a firm. Another set of issues is the ways to make sure the quality of management decisions and transparency in the tax area. In particular, it is of significance to ensure that the board, shareholders and other stakeholders are aware of the stakes that are involved in the management of taxes (Owens, 2008).

Taxes represent a significant cost to the firm and its shareholders and as a result a reduction in cash flow available to them, and it is generally accepted that shareholders prefer tax aggressive activities in an effort to increase not only after-tax earnings per share but also cash available for shareholders. In theory, a dollar saved in taxes through an aggressive tax practice is an extra dollar for shareholders because tax aggressiveness leads to tax savings in the current period (Khurana & Moser, 2013). Strategic tax behaviors or aggressive tax planning are all those activities that are designed solely to minimize corporate tax obligation whose legality may be under doubts, including

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- Tax evasion, which can be defined as intentional illegal behaviors such as a direct violation of tax law in order to escape payment of taxes
 - Tax avoidance, which can be defined as all 'illegitimate' but not necessarily illegal behaviors in order to reduce tax liabilities.
 - and legitimate saving of taxes, which can be defined as commonly accepted forms of behaviors which are neither against the law nor against the spirit of the law.

The scope of each of these concepts varies across countries depending on state government's policies, tax authorities' attitudes and public opinion. In our research, strategic tax behaviors are thus all behaviors identified as tax aggressiveness or tax avoidance, which represents a continuum of tax planning strategies. Corporate tax shelters generate significant tax savings but it is often difficult to identify whether a firm is actively involved in the tax sheltering activities due to limited disclosures (McGill & Outslay, 2004).

Consistent with Slemrod (2004) and Frank, Lynch & Rego (2009), tax aggressiveness is defined as tax planning that consists of a great variety of transactions with aim to reduce taxable income and is a subset of tax avoidance activities more generally, which may or may not violate income tax law. There are two theoretical views on firms' tax aggressiveness behaviors. On the one hand, in terms of the traditional view, aggressive tax strategies represent a firm's value maximizing activity as it entails a wealth transfer from the government to shareholders of a firm (Khurana, & Moser, 2013). Therefore, shareholder value should increase with the efficacy of corporate tax strategies so long as the expected marginal benefit exceeds marginal cost (Desai & Dharmapala, 2009). Frank *et al.* (2009) show that the stock market rewards firms with tax aggressive practices, which is consistent with the idea that these firms engage in value-maximizing activities.

On the other hand, from the perspective of agency theory, it emphasizes the role of agency costs arising from the separation of ownership and control in influencing tax aggressiveness in publicly listed firms (Khurana, & Moser, 2009a,b). Interests here focus on how tax aggressiveness can create scope for managerial opportunism. The role of aggressive tax behavior by managers within an agency framework of the firm poses a new set of issues which are related to the alignment of their interests with those of the shareholders: why and to what extent do managers pursue aggressive tax strategies; do such aggressive tax strategies by managers advance shareholder value; and how can tax savings obtained through aggressive tax behavior by managers be measured? For example, Desai & Dharmapala (2006) give evidence on how high-powered managerial incentives influence tax sheltering, and Desai & Dharmapala (2009) find that corporate tax aggressiveness is positively related to firm value.

1.2 Research Motivation

There are many interesting questions currently under study such as why do some firms avoid more tax than other firms? Why do investors and managers engage in corporate tax sheltering activities? The main concerns are with variant proxies for tax sheltering and the conclusions that can be drawn given the selected proxies and the research questions at hand.

As enlightened by the review of tax research conducted by Hanlon & Hertzman (2010), future research studies that explore new methodologies for measuring tax sheltering and methods by which to identify activities toward the more aggressive end of the tax sheltering spectrum are expected, as well as studies that investigate the effects of ownership structure and the 'managerial opportunism effect'. The present study is motivated by prior research documenting significant cross-sectional differences in tax aggression among firms domiciled in the U.S and by calls for more research on factors influencing tax aggressiveness (Shackelford and Shevlin 2001; Graham, 2003;

Dyreng *et al.* 2008; Hanlon and Heitzman 2010). Two reasons can be identified as persuasive for the study of the intersection between corporate governance mechanisms and tax sheltering. First of all, tax sheltering can be complex and may possibly allow for managerial opportunism; CEOs and directors plays an integral role in the selection of a tax sheltering strategy and effective tax sheltering is an important driver of value-maximizing activities, with the consequence of lower taxes and improved bottom-line performance (Minnick& Noga, 2010). Secondly, significant uncertainties are involved in tax sheltering which may not be beneficial to performance of a firm directly; rather the issue should be viewed from a long-term, strategic perspective. By studying how corporate governance is related to tax sheltering, one can gain insight into the efficacy of corporate governance arrangements in the short term as well as in the long term, for example in understanding the horizon problems related to ownership structure and executive compensation.

Finally, China was chosen as the object country of the research as it has the third largest economy, the second largest market capitalization and, importantly, has unique institutional characteristics that set it apart from advanced western economies. The development of the accounting and tax system in China provides a unique research setting, and the study will highlight some aspects of tax management in China, thus contributing to investors' understanding of accounting and management behaviors in Chinese listed firms.

1.3 Research Aim

Our research studies the impact of corporate governance structure on these tax-aggressive strategies by adopting an agency perspective of the firm built upon the nexus of institutional arrangements in place in a particular economy, namely in China at the early stages of its transition to a western-style market-based corporate economy.

It is pointed out by Shackelford and Shevlin (2001) and Graham (2003) that manager/insider control and other organizational factors such as corporate governance mechanisms are important but under-examined in tax research, most of empirical studies focus on the role of firm characteristics in tax planning (see Hanlon & Heitzman, 2010 for a review). We examine whether variation in firms' corporate governance mechanisms explains differences in level of tax aggressiveness across firms upon unique institutional arrangements in place in China, which has been under-examined in prior studies. They study would identify potential factors within the country studied that would affect the aggressiveness of tax planning and formulate and test hypotheses that will explain discovered differences in tax aggressiveness.

From a policy perspective, corporate tax rules can affect corporate governance, and in turn, corporate governance mechanisms may affect corporate tax strategies, which have an impact on the process of decision-making around tax strategies and directed to manager, directors and other individuals involved (Desai & Dharmapala, 2008; Owens, 2008). Shareholders would like to minimize corporate tax payments net of the private costs in order for the maximization of firm value. In other words, shareholders are in favor of optimally aggressive in tax reporting for the firms they own.

There has been recently renewed interest in the relation between corporate tax planning and corporate governance. Governments are concerned about companies' efforts to minimize tax burdens, often through the use of tax avoidance strategies or tax evasion strategies that border on being illegal or at least run contrary to the spirit of the law. The idea is that tax avoidance or evasion strategies can be discouraged by corporate governance measures that make it less likely for a firm to engage in aggressive tax minimization strategies. The effectiveness of such strategies must depend upon the nexus of institutional arrangements in place in a particular economy. Thus factors that affect the extent of aggressive tax strategies in one country will differ from those in another country. Understanding the factors, institutional arrangements

and firm characteristics that affect this dynamic will therefore provide important implications for tax policy makers.

A wider concern related to governments' concerns over corporate tax avoidance is the issue of equity or fairness. For example, in the U.K. the main statutory corporate tax rate has fallen from 30% in the 2007-8 tax years to 21% 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 avoidance 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.

Our study firstly examines how different types of ownership structure affect a firm's tax aggressiveness in China. It indicates the role of political connections *vs.* market forces played in the tax reporting practices of publicly listed firms in China. A major difference between China and the developed countries in the West is that the former tend to be "relationship-based" rather than "market-based" economy (Adhikari *et al.* 2006). Prior studies shows that politically connected firms receive much more preferential treatments from the government including bank loans, favorable tax treatments and market power (Fisman, 2001; Adhikari *et al.* 2006; Claessens *et al.* 2008; Wu, Wu Zhou & Wu, 2012). It is suggested by Faccio (2006) that the benefits associated with political benefits are greater in countries with highly intervened governments and weaker property rights protection compared to that of counterparts. State ownership as well as ownership concentration represents a strong form of political connection while institutional ownership represents the form of market forces. Government involvement is associated with institutional

environment where the marketization and institutional environment in China tend to reduce the level of government interventions in operation of enterprise (Wu, Rui & Wu, 2013). By doing so, it contributes to the currently few book-tax difference literature in emerging markets by exploring the interaction between political connections and book-tax differences as a measure of tax aggressiveness in China.

Moreover, our study extends the recent literature that attempts to link tax aggressiveness with top executive (e.g. Desai & Dharmapala, 2006; Dyreng *et al.* 2008; Armstrong *et al.* 2012; Rego & Wilson, 2012) and firm leadership that cannot be explained by firm characteristics in the context of Chinese economy. It is possible that top executives and firm leadership are partially responsible for the variation in tax reporting practices across firms through their managerial power and compensation. To our knowledge, this is the first paper to quantify and examine the incremental effects of executive and firm leadership on tax aggressiveness in the Chinese context.

Conducting a study on China is of significance as China has recently emerged as one of the largest economies in the world and its economy has grown rapidly since the beginning of economic reform. The formal separation of ownership and control does not exist in a number of portions of the corporate sector in China; governance concerns revolve to an extent around the issue of the dominant shareholder; due regard therefore needs to be given to a consideration of what are the relevant questions to ask in the Chinese context; corporate governance research in China must also critically evaluate the applicability of dominant governance theories and frameworks drawn from a western (largely U.S.) context in examining these research questions. In China, the tax system is still in its infancy, and detailed financial accounting disclosures have not yet reached the level of detail found in financial reports of companies reporting under IASB standards in mature western economies and, therefore understanding the characteristics that encourage aggressive tax planning could provide useful information to tax policy makers, as well as providing steers for policy makers in their attempts to improve corporate

governance such as to optimize ownership structure in China, as well as tools for investors and trading partners. Moreover, in the aftermath of various corporate scandals and the credit crisis in the Western world, there is now tangible discomfit at the current status, and even underlying rationale, of corporate governance. It is thus timely to consider the attributes of what constitutes a suitable system of corporate governance.

1.4 Research Contribution

The study provides a simple theoretical framework for understanding the link between tax aggressiveness and corporate governance due to a concern with tax shelters and managerial opportunist malfeasance, and should also be of interest to tax policy makers concerned about declining corporate tax revenue and the increasing gap between reported earnings and taxable income in an international context. It also constructs a quantitative measure to inherently explain phenomenon of tax sheltering. The intersection between corporate governance and taxation has been neglected for many decades, accounting academics, on the whole, have not incorporated the possibility of agency problems in their analysis of tax burdens until recently such as the study conducted by Desai & Dharmapala (2006, 2009).

This study contributes to the existing literature by advancing a new, refined method of separating company book-tax differences (BTDs) into ‘normal’ and ‘abnormal’ components, using recently available tax reconciliation data required under *ASBE 18 income tax expenses* (ASBE, 2006). By taking a detailed look at the determinants of BTDs in Chinese context to determine a 'normal' level of BTDs (tax-effect BTDs following the approach of Tang & Firth (2011) that arise as a result of divergence between Chinese GAAP and tax rules, and to deduct this from the total BTDs in order to arrive an 'abnormal' BTD which is presumed to arise a result of earning management and tax planning. Using this new empirical measure of corporate tax avoidance, it allows for an examination of the determinants of tax sheltering activities including ownership structure and incentive compensation. This

study adds to the mostly U.S. based BTDs research by providing international evidence on the implications for the mechanical and opportunistic BTDs in interpreting the corporate governance factors that affect tax aggressiveness in an emerging economy China. Our findings suggest that while some prior studies results in the U.S. or UK based studies can be generalized to China, empirical evidences from the Chinese institutional setting help to enrich and supplement the current BTDs literature.

We also contribute to the existing literature by extending the mainly U.S.-or UK-based literature to China where there are significant institutional differences in ownership structure and corporate governance system. (this study complements other recent studies on tax aggressiveness carried out in the U.S (e.g. Armstrong *et al.* 2012; McGuire, *et al.* 2012) by analyzing tax-motivated activities of Chinese listed firms on which there is few evidence in the literature (e.g. Zeng, 2010; Tang & Firth, 2011; Wu, Wang, Gill & Luo, 2012; Chan, Mo & Zhou, 2013; Wu, Rui & Wu, 2013). Chinese stock market provides a high-power context for our study as under-developed institutional corporate governance structure and infrastructure which leave minority investors vulnerable to tunneling (Jiang *et al.* 2010). Investors are concerned over the accounting quality and quality of accounting information in China, we highlight firm ownership and control factors as well as incentive compensation that encourage or constrain aggressive tax planning in China, which has important implications for both public policy and corporate governance in emerging markets similar to China.

This study further adds to the broad literature that focuses on the determinants of corporate tax aggressiveness, extending prior research which focuses primarily on corporate tax aggressiveness within a single country by providing evidence that differences in tax systems (i.e. corporate tax rates, required book-tax conformity) as well as institutional factors (i.e. ownership concentration, executive compensation) impact the level of firms' tax aggressiveness.

1.5 Structure of the Thesis

The remaining chapters are structured as follows: Chapter 2 contains the theoretical development from the perspectives of the corporate governance and taxation in the context of the Chinese institutional setting that is relevant to this study, which encompass agency theory and institutional theory. Chapter 3 reviews the literature. Chapter 4 outlines the methodology we adopt. In chapters five, six and seven, we present the empirical studies of this thesis. The final chapter, chapter eight, discusses the conclusions and makes recommendations for future research in this area, and discusses the limitations of the present study.

2.0 Theoretical Development

2.1 Agency and Neo-institutional perspectives on governance in China

China has emerged as one of the largest economies in the world since the beginning of market-oriented reforms in the 1980s and the early 1990s; the government introduced a great variety of reform measures into state-owned enterprises (SOEs) with the aim of privatization and marketization. China's reforms were mainly based on a modified version of the Anglo-American model of corporate governance (Walter & Howie, 2003) which is normally associated with and rationalized by agency theory (Daily, Dalton, & Rajagopalan, 2003, Peng, 2004). It is argued, however, that a more inclusive panorama of corporate governance in transition economies may be achieved by complementing the agency approach with concepts from neo-institutional theory (Hoskisson *et al.*, 2000; Wright *et al.*, 2005). In the light of the agency model, diverging interests are present between managers and shareholders and those interests are aligned by governance mechanisms such as ownership concentration, managerial compensation, board independence, the market for corporate control and the managerial labor market (e.g. Bebchuk & Fried, 2003). Several studies suggest that economic pressures are the major drivers for the convergence of corporate governance toward agency theory based solutions (Rubach & Sebor, 1998).

From the perspective of the institutional view, the differences in various corporate governance systems can be explained by the institutional differences across countries (Vitols, 2001; Aguilera & Jackson, 2003). The stylized agency model of the Anglo-American system lays primary emphasis on shareholder value maximization, while other factors should be considered (Chizema & Buck, 2006), for example, the comparison study of the corporate governance structure between UK and Germany conducted by Vitols (2001) focuses on the embeddedness of national institutions as well as the possibility of 'complementarities' among these institutions. Institutional theory suggests that corporate governance in transition economies is driven by factors in addition to agency theory which attempts to explain what institutions will lead

agents to systematically to ignore the interests of the principals (North, 1990); transition economies are experiencing institutional changes which "results in fundamental changes in a society's political system, its legal and regulatory frameworks, its economic system, and its financial infrastructure" (Newman, 2000, p. 603). China, as an emerging economy with a socialist heritage and unique institutional context, is no exception. Table 2.1 outlines the major differences between agency theory and neo-institutional theory regarding corporate governance in transition economies. It should be noted at this point that, although agency theory and new institutional theory perspectives may lead to differing understandings of what factors influence organizational behavior, the two approaches are not *necessarily* mutually inconsistent. Agency theory, as a behavioral descriptor, is based on the behavioral assumptions of rational utility maximization by agents, and is therefore a theory of how conflicts arise and are resolved among stakeholders in an organization. Institutional theory is a theory relating to how behavior may be *constrained* within the confines of an institutional framework. That constraint may be viewed as operating through agents' conceptions of their own self-interest, and may thus be regarded as part of the environment in which agency conflicts arise.

Table 2. 1: Major differences between agency theory and neo-institutional theory regarding corporate governance in transitional economies

	Agency theory	Neo-institutional theory
Motivation of individuals	Rational self interest	Social conditioning
Assumptions regarding market institutions	Fully functioning market institutions that support corporate governance, such as market regulations, protection of property rights, market for corporate control and market for managerial talent.	Formal institutions can be implemented quickly, but probably will not function as expected for some time due to lack of legitimacy and lack of understanding on the part of economic actors.

Goal incongruence	Clearly delineated conflict of interest between self-interested managers and profit-maximizing shareholders. Market institutions clearly define the roles and responsibilities of the actors. Monitoring devices help achieve good corporate governance, of which primary goal is maximization of shareholder value	Corporate governance differs according to national institutional context. In transitional economies, the State often plays an active behind-the-scenes role, making it difficult to determine where real control lies. Many conflicting objectives, such as social welfare or full employment, along with performance goals.
Top management team	Professional managers who often have made their way up through the ranks or are hired from outside after extensive search and scrutiny of qualifications through the managerial labor market.	Typically cadres or former government officials who are appointed for political reasons. Often are politically motivated as much or more than performance motivated
Boards of directors	Legitimate legal and social institutions with fiduciary duty to safeguard shareholders' interests. Research focuses on factors that affect day-to-day operations such as insiders vs. outsiders, background of directors, committee structures, etc.	In transitional economies, boards often operate as extensions of government control. Functioning of boards of directors depends on the national institutional context

(Source: Lau, Fan, Young & Wu, 2007)

2.2 Agency and Neo-institutional perspectives on taxation in China

While economic theory and empirical evidence on how corporate governance should affect tax aggressiveness is relatively underdeveloped to date, Slemrod (2004), Crocker & Slemrod (2005), and Desai & Dharmapala (2006) lay the theoretical foundation for understanding tax sheltering within an agency framework. Most of the literature prior to these studies commence with the assumption that the firms make the tax decisions without agency considerations (Hanlon & Heitzman, 2010). The separation of ownership and control implies that if tax sheltering is a worthwhile activity, then the owner should structure appropriate incentive schemes to ensure that managers make

tax-efficient value-maximizing decisions (Hanlon & Heitzman, 2010). By tax efficient is meant tax sheltering activities that reduce transfers from stockholder to the government, which should generally enhance shareholders' after-tax wealth and increase firm value at the expense of other taxpayers. That is, shareholders prefer managers to avoid taxes and managers, once their incentives are sufficiently aligned, engage in tax sheltering (Desai & Dharmapala, 2009).

However, an emerging stream of literature (e.g. Desai, Dyck & Zingales, 2007; Desai & Dharmapala, 2006, 2009) which examines tax avoidance in an agency theory framework suggests that managerial diversion and tax sheltering are complements of each other, providing opportunities for managers to take advantage of the technologies of tax sheltering to advance their own managerial interests instead of shareholders' interests, and managers at well governed firms are more likely to pursue value-enhancing tax avoidance. Specifically, tax sheltering has the effect of making the financial issues of a firm less transparent to outsiders which makes managerial opportunism much easier; thus, managers often attempt to blur the underlying intent of tax avoidance transactions in order to shield income from tax authorities, which creates a shield which can potentially be used in appropriation of firm wealth by insiders such as managers and controlling shareholders (Desai & Dharmapala, 2006, 2009). As such, the increase in managerial diversion may tend to accompany the increase in tax sheltering activity, thereby adding costs in addition to the costs associated with aggressive tax planning.

As a result, it is suggested by the agency theory of tax avoidance that shareholders may not always desire tax avoidance due to the combined costs which include the cost directly related to tax avoidance activities such as costs incurred for tax planning, tax penalties assessed by IRS and additional compliance cost as well as nontax costs. Agency cost which refers to prices discounts imposed by shareholders in particular may outweigh potential tax savings from tax avoidance transactions that accrue to shareholders, if outside shareholders believe the obscure and opportunistic tax transactions are

accompanied by managerial rent extraction (Desai & Dharmapala, 2006, 2009). In accordance with the agency cost view of tax avoidance, several recent studies find that investors do not always value corporate tax avoidance activities. Two recent studies investigate whether tax sheltering activities enhance shareholder wealth. Hanlon & Slemrod (2009) find that on average a firm's stock price reacts negatively to news about tax shelter involvement and the decline is more pronounced for retailing firms and for firms with low effective tax rates; moreover, the small sample event study also shows that tax aggressiveness does not always increase firm value. Although primarily focusing on firm characteristics of corporate tax shelter participants, Wilson (2009) also sheds light on whether tax sheltering creates wealth for shareholders or facilitates managerial opportunism via studying the stock return performance of tax sheltering firms. He finds that tax sheltering firms with low anti-takeover protection outperform non-sheltering firms during each of the 24-month periods: pre-sheltering, active-sheltering, and post-sheltering which is consistent with the notion suggested by Desai & Dharmapala (2009) that tax sheltering creates wealth for well governed firms.

In discussing tax strategies, we also adopt an approach based on neo-institutional economics which has been extended to the legal study of corporate players (Fama & French, 1998; Slemrod, 2004). The neo-institutional approach focuses on transaction costs to explain the choice between market and nonmarket solutions, and explains institutions as a framework in which transaction costs may be reduced. When this approach is applied to corporate tax strategies, it emphasizes time and uncertainty associated with the details of the environment in which transactions take place, which in turn gives rise to opportunism which is defined as the 'effort to realize individual gains through lack of honesty in transactions' and to the need for governance constraints that discourage parties from being opportunistic (Garbarino, 2011). It suggests that the introduction of these additional costs (e.g. government intervention, monetary costs and political costs; penalties by tax administration) should drive down the optimal level of tax aggressiveness from the perspective of firm shareholders while

simultaneously driving up the optimal level of tax aggressiveness from the perspective of managers (Moore, 2007). A firm's level of tax aggressiveness can be jointly determined by corporate governance structure, managerial discretion and the changes in tax regime. The optimal level of tax aggressiveness can be viewed as the profit-maximization level of tax aggressiveness which balances the benefits and costs associated with tax aggressive positions by the interest alignments of managers and shareholders and induce managers to take tax positions to enhance wealth of shareholders. Shareholders can implement incentives and controls through corporate governance mechanisms and should be able to minimize their agency conflicts related to the tax aggressive transactions in order to induce managers to achieve firms' optimal level of tax aggressiveness given prevailing tax environment. Therefore, the complementary relationship implies that managers may tend to over-shelter from the perspective of shareholders due to the increased prospects for opportunism (Desai & Dharmapala, 2006). We place corporate tax strategies within this institutional framework and consider them as institutional arrangements generating transaction costs within the agency model of the firm.

3.0 Literature Review

3.1 Relevant Tax Research

Although there are relatively few studies linking tax planning and corporate governance, reviewing the studies in each area would lay the appropriate theoretical foundation for our empirical study of the link between corporate governance and tax sheltering. This chapter reviews the extant literature in both areas to the extent that it is relevant to the present study.

There are two alternative perspectives on motivations and effects of corporate tax sheltering activities. On the one hand, corporate tax sheltering is viewed by several studies as an extension of other tax-favored activity such as use of debt (Desai & Dharmapala, 2006). In particular, a study conducted by Graham and Tucker (2006) is representative of this common view that corporate tax sheltering activities are merely tax-saving strategies, without consideration of any other agency considerations. Graham & Tucker (2006) employ non-debt tax shield to measure firm's tax sheltering by using a sample of 44 corporate tax sheltering cases from 1975 to 2000, although they do not investigate the market's response to news of this sheltering; they find a positive relationship between features such as size and profitability and tax sheltering and that tax sheltering works as a substitute for interest deductions in choosing capital structure. It is predicted by DeAngelo and Masulis (1980) that less debt in terms of its debt tax deductions is used by firms in the case of presence of large non-debt tax shields such as deductions from tax shelters.

However, as indicated by Desai & Dharmapala (2006), the simple view of corporate tax sheltering as a resource transfer from the government to shareholders is incomplete given the agency problems featuring shareholder-manager relationships. Therefore, on the other hand, an alternative theoretical approach advocates the link between these tax sheltering activities and the agency problems that are inherent in publicly listed firms. From the perspective of this alternative view, tax sheltering can create a scope for the diversion of rents and managerial opportunism, which

significantly contributed to the literature by providing theory and predictions about cross-sectional variation in tax sheltering. Moreover, an emerging paradigm that emphasizes the link between firms' corporate governance mechanisms and their responses to taxes has arisen from this strand of literature. This view is evidenced by several recent studies including Desai & Dharmapala (2006, 2009) and Desai, Dyck and Zingales (2007); and Desai, Dharmapala & Fung, (2007). For example, Desai, Dharmapala & Fung (2007) stress the role of corporate governance practices and the role of tax authorities as external monitors in influencing tax compliance. They reiterate that the tax authority is the largest minority stakeholder in most publicly listed firms and incorporate this fact into thinking about the implications for governance structure and firm behavior. Moreover, Desai, Dyck & Zingales (2007) suggest that the quality of corporate governance plays an important role in affecting firms' responses to changes in corporate tax rates. They find that the underlying governance arrangements constitutes the major driver for the relation between tax revenue and tax rates with an increase in tax rate leading to more diversion lowering corporate tax revenues when governance is weak, and to higher tax revenues when governance is strong. Therefore, under the alternative view of corporate tax sheltering, shareholders, through the corporate governance system, have to employ incentives and controls that induce managers to take tax strategies that result in the profit-maximizing tax aggressiveness level

This alternative view also emphasizes that corporate tax sheltering not only entails distinct direct costs but also these costs may actually outweigh the benefits to shareholders, given the fact that these devices provide the opportunities for diversion by corporate insiders (Desai & Dharmapala, 2008). Early theories on tax planning focused on tax minimization, namely the reduction of explicit taxes through operational and accounting activities with aim of maximizing after-tax returns without consideration of other dimensions of costs and transaction problems (Garbarino, 2011). As a result, Scholes, Wilson & Wolfson (1990) introduce the so-called 'theory of effective tax planning' which proposed that given the existence of uncertainty and

information asymmetry in the real world, the objective of maximization of after-tax return should encompass not only explicit taxes, but also implicit taxes as well as other non-tax costs, in order to ensure that tax minimization is not entirely offset by implicit and non-tax costs. The theory of effective tax planning therefore encourages firms to tradeoff the tax benefits against non-tax costs in their choice of financing, investment and compensation decisions. 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). Take the agency costs, for example, given the fact that shareholders act as principals and managers act as agents in terms of the design and implementation of corporate tax strategies, an information asymmetry between managers and shareholders in terms of tax planning can facilitate managers' pursuit of their own interests. It is argued the lack of transparency associated with taxplanning provides managers with a 'screen' to hide self-interested actions, which facilitates moral hazard (Desai & Dharmapala, 2006; Wahab & Holland, 2012). 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.

It is worth noting that an implicit assumption underlying Scholes, Wilson & Wolfson's (1990) theory of effective tax planning is that the financial and tax

accounting methods conform (Smith, 2000), so that firms are sometimes willing to lower financial earnings to obtain tax benefits, at least to the extent that tax benefits exceed the costs of lowering the financial earnings (Scholes, Wilson & Wolfson, 1990; 1992), Cloyd (1995) and Cloyd *et al.* (1996) support this argument and find that firms are strongly recommended by tax preparers to adopt an aggressive *conforming* tax position rather than an aggressive non-conforming¹ tax position.

However, Mills (1998) expands this research by studying the aggregate non-conformity as measured by the size of firm's book-tax differences which is used as a proxy for a firm's aggressive tax position; they find that an increase in firms' positive differences between book income and taxable income leads to an increase in IRS audit adjustments. Meanwhile, Mills & Newberry (2001) find that firms with higher non-tax costs are associated with larger book-tax differences, and conclude that firms with higher non-tax costs will mostly choose non-conforming financial accounting methods despite the higher IRS audit adjustments.

While it is suggested from the traditional view of corporate tax shelters that tax shelter activities should increase shareholder value, the alternative view provides predictions with subtle distinctions such as that of tax shelter actions to advance the interests of managers rather than shareholders. It indicates that applying the agency perspectives to corporate tax sheltering provides a more comprehensive and potentially more accurate picture of the motivations driving this phenomenon. In particular, a firm's corporate governance should be an essential determinant for valuation of corporate tax savings (Desai

¹Note: Book-tax nonconforming tax planning includes the utilization of research and development tax credits, locating operations in a low-tax foreign country, shifting income recognition from high-tax to low-tax locations, engaging in synthetic lease transactions (that are treated as operating leases for locating operations in a low-tax foreign country, shifting income recognition from high-tax to low-tax locations, engaging in synthetic lease transactions (that are treated as operating leases for financial reporting purposes and capital leases for tax purposes), and utilizing non-corporate entities to generate deductions or losses that reduce consolidated taxable income. Each of these transactions affects book and taxable income differently, generating temporary or permanent book-tax differences (Badertscher *et al.*, 2009:p16). While book-tax conforming tax planning affects both pre-tax book income and taxable income, thus will not create any book-tax differences.

& Dharmapala, 2009). As we can find in Desai & Dharmapala (2008, 2009) which examines investors' valuation of managerial actions to minimize corporate tax payments and finds a negative relationship between after-tax firm value and the direct effects of tax sheltering; in particular, tax sheltering that is indicative of a higher possibility of managerial wealth diversion due to increased opportunities for managerial opportunism, and as a result firms with stronger and better governance arrangements should have greater net effect of firm value.

The assumption is based on evidence from recent studies which suggests that tax aggressiveness is more pervasive in weak-governance firms; firms with strong governance structures should be able to minimize their agency problems with respect to the tax strategies and achieve the optimal level of tax aggressiveness by aligning managers and shareholders' interests. In contrast, managers should choose the position of tax aggressiveness in response to their own preferences that reduce shareholders' wealth under weak governance structures. Moore (2007) extends Desai & Dharmapala's (2006) work and focuses on the association between tax aggressiveness and the composition of a firm's board of directors. Moore (2007) supports the view that stronger governance structures weaken tax aggressiveness with evidence of a negative relationship between audit committee independence and tax aggressiveness.

3.1.1 Institutional background in China

China's tax system is characterized by an uncertainty due to multiple-tier tax legislation and a range of tax incentives arising from strong political-economic objectives and interests of local governments (Tang & Firth, 2011). For example, the Chinese government offers favourable tax treatment including tax exemptions, tax holidays, decreases in tax rates and tax refunds to domestic firms operating in special economic zones and technology development zones (Wu *et al.* 2007; Zeng, 2010), meanwhile, local governments also provide various tax rebates to stimulate local economic development. The variation in tax liabilities within China as well as inefficient

tax administration provide opportunities for firms to engage in tax sheltering. Shevlin *et al.* (2012) demonstrate that the tax range among subsidiaries arising from the industry-specific and region-specific tax incentive provides a strong incentive for Chinese firms to save taxes through income-shifting among subsidiaries within China. In particular, Chan *et al.* (2010) find a negative association between the level of book-tax conformity and the tax noncompliance; more tax compliant firms are associated with high incentive to inflate book income after the departure from a tax-based accounting system since the year 1998.

China listed firms have experienced the change in accounting and tax systems that weaken book-tax conformity. The change in financial reporting regime from a conforming or dependent system to a non-conforming system resulted in China's book-tax differences, before the changes, no book-tax differences were presented in China as the rules for measuring taxable income were the same as those for measuring accounting profit (Tang & Firth, 2011).

There was no tax policy owing to any personal or enterprise income taxes before 1978. Profit-retention system was introduced by government in order to retain a portion of profits from state-owned enterprises (SOEs) in 1979. A modern tax system was first implemented in 1983 under which all SOEs were required to pay a progressive income tax expense. Since the year 1991 when the first listed firm came into existence in China, a more comprehensive tax reform was launched in 1994 under which all domestic firms were required to pay income tax expense at the flat tax rate of 33 percent. In March 2007, China equalized the rate to 25 percent for both domestic and foreign firms, effective from 1st January, 2008.

Before 1998, there was conformity between book income and taxable income in respect that traditional tax-based accounting and fiscal budget as well as tax assessment were directly linked, with the result that financial reporting costs prevent firms from avoiding tax and tax non-compliance is treated as any significant shortage of taxable income below book income (Chan *et al.* 2010).

At that time, Chinese government regulations set restrictions on bad debt provision and limit on the selection of depreciation methods such the selection of useful life of fixed assets, which are unable to fully capture a firm's financial performance. After 1998, a series of practical accounting standards with objectives differing in terms of financial reporting with those of tax reporting was implemented by Chinese government (Chan *et al.* 2010), these standards removed the rigid limits as mentioned before and they gradually relaxed the close link between book income and taxable income by permitting flexibility in selection of different methods for financial and tax reporting, which result in more aggressive earning and tax management for managers to report high book income and low tax income (See Table 3.1 for the examples of common items with book-tax differences before and after the departure from tax-based accounting). For example, the Chinese government revised the *accounting standards for business enterprises*, effective from 2001 since China's accession to WTO, which marked a further departure from a tax-based accounting system and reinforced management's incentive to apply different methods for financial and tax reporting with increased discretion.

When the book income and taxable income are separated, book-tax differences can arise due firstly to mechanical differences between accounting standards and tax rules, secondly to managers' discretion in financial reporting to overstate book income and finally managers' incentive to understate taxable income by taking advantage of the ambiguity in tax rules (see section 4.3 for more detail)

Table 3. 1: Examples of common accounting items with book-tax differences before and after the departure from tax-based accounting

Accounting items	Under tax-based accounting		After adoption of IAS/IFRS	
	BTD	Book-tax treatment	BTD	Book-tax treatment

1. Useful life of fixed assets	No	Same useful lives for book and tax purposes	Yes	Different useful lives for book and tax purposes (e.g. a longer useful life for book purpose)
2. Salvage value of fixed assets	No	Same salvage value (5% of original cost) for book and tax purposes	Yes	Different salvage values for book and tax (e.g. 5% for tax but more than 5% of the original cost for book)
3. Depreciation method	No	Same method (usually straight line method, accelerated methods allowed for certain plant assets)	Yes	Different depreciation methods for book and tax purposes (e.g. straight line method for book but accelerated methods for tax for certain plant assets)
4. Inventory valuation	No	Based on historical cost and the same inventory costing method for book and tax purposes	Yes	Lower of cost or market for book only. Different inventory costing method for book and tax purposes (e.g. FIFO for book and average method for tax)
5. Bad debt provision	No	Provision ranges from 0.3% to 0.5% of accounts receivable for book and tax purposes	Yes	No restriction on provision for book, but up to 0.5% of accounts receivable balance for tax purpose
6. Intangible assets	No	Historical cost and amortize over the contract period or 10 years (not more than 10 years for book, but at least 10 years for tax, thus in practice 10 years) ^a	Yes	Revalue or amortize over not more than 10 years depending on asset useful life for book, but amortize over at least 10 years for tax purpose
7. Organization costs	No	Amortize over 5 years for book and	Yes	Amortize over not more than 5 years for book but at least 5

		tax purposes		years for tax purpose ^a .
8.Short-term and long-term investments	No	Historical cost and no unrealized gain/loss for book and tax purposes	Yes	Lower of cost or market for book purpose and unrealized gain/loss recognized for book but not for tax purpose/
9.Interest income from government bonds	No	Interest income recognized for book but exempted for tax purpose	Yes	Same as tax-based accounting
10.Revenue from transfer of technologies	Yes	Revenue recognized for book but exempted for tax purpose	Yes	Same as tax-based accounting
11.Donation/income received for environmental protection and charitable projects	Yes	Donations/income recognized as income for book purpose but exempted for tax purpose	Yes	Same as tax-based accounting
12.Government subsidies	Yes/No	Subsidies recognized as income for book purpose but exempted for tax purpose if the subsidies related to food, high-tech R&D and other allowed items as per relevant regulations.	Yes/No	Same as tax-based accounting. However, specific tax exemptions change over time/
^a The difference in accounting and tax polices indicate that Chinese tax authorities do recognize the potential of firms overstating book income and understating taxable income.				

Source: Chan *et al.* (2010)

3.1.2 Tax reform in China

In recent years, corporate tax policy in most industrialized countries has been characterized by a trend towards lower tax rates and broader tax bases, and china is no exception.

A new Enterprise Income Tax Law (EIT Law) was promulgated by the National People's Congress of China to be effective on 1 January 2008. It is the first law in Chinese history that imposes an general internationally competitive integration of income tax on all types of enterprises, regardless that are foreign-investment enterprises (FIEs) or Chinese-owned enterprises (Li, 2007). The long-term objective of the new EIT law was to effectively reduce the tax incentives provided to foreign investors and to lower the corporate tax burden (Lin, Lu & Zhang, 2012).

In China, the tax system applies the proportional tax rates. According to the Art 4 EIT Law, the general rate to company profits is 25 percent, which was much lower than the previous effective rate of 33 percent applicable to domestic enterprises, but higher than that for FIEs who in some cases enjoyed concession that pushed their tax rate to 15 percent or lower (Article 4 of New EIT Law). For example, with the preferential treatment enjoyed by FIEs established prior to January 2008, their income tax rate will be gradually increased to 25 percent within five years, in terms of 18 percent in 2008, 20 percent in 2009, 22 percent in 2010, 24 percent in 2011 and 25 percent in 2012 (Article 79 of New EIT Law).

However, there are exceptions that a lower rate of 20 percent applies to qualified small and low-profit enterprises, and a lowest rate of 15 percent applies to new and high-tech enterprises that are supported by the Chinese government as key enterprises, which are justified by the Minister of Finance that these tax-preference enterprises play a special role in the national economy and therefore can enjoy priority support from government, as indicated by the international practices (Article 4 of New EIT Law). For the comparison purpose, see the Table 3.2 as follows.

Table 3. 2: Comparison of New EIT legislation with old EIT legislation

	Tax rate	
	New EIT legislation starting in 2008	Old EIT legislation
Domestic enterprises	Article 4: general tax rate is 25 percent.	The standard statutory tax rate was 33 percent, with preferential tax rate of 15 percent, 18 percent and 27 percent for low-profit enterprises
	Article 28: 20 percent for small and low-profit enterprises	
	Article 28: 15 percent for new and high-tech enterprises	
	Article 28: 10 percent for withholding income tax	
Foreign-investment enterprises	Article 4: general tax rate is 25 percent, and 20 percent for non-resident enterprises.	The rate was lowered to 24 percent or 15 percent for FIEs in some special regions.
Notes	China-sourced income of non-resident enterprises without establishments in China (or where the income is not connected with the establishments): 10% withholding tax	There was a large disparity between the statutory tax rate and effective tax rate as a result of various tax incentives

Source: Li & Huang (2008)

3.1.3 Accounting standards for business enterprises

The development of accounting standards for the People's Republic of China can be divided into four stages, namely 1949-1978, 1979-1993, 1994-2006 and 2007-present (Li and Huang, 2008). The first stage (1949-1978) started with the establishment of the People's Republic of China in 1949 and ended with the 'reform and open-up' policy which was implemented since 1978. The second stage (1979-1993) started with the 'reform and open-up' policy and ended before the major corporate accounting disclosure since 1994. The

measurement and disclosure of Chinese corporate income tax expenses are in the third (1994-2006) and the fourth stage (2007-present). It is of significant that the steps towards convergence incurred through the insurance of four successive Chinese GAAPs: 1992, 1998, 2001 and 2006, when the Ministry of Finance prescribed a series of four accounting regulations applicable to A-share listed firms (Peng and Smith, 2010).

➤ Stage 1: from 1949 to 1978

The Revolution of 1949 had a long-lasting effect on accounting reforms in China for the next 30 years, and the primary aim of accounting reforms was to establish accounting regulatory framework in response to the emerging economy in China. The Chinese government has been directly involved in accounting regulation since 1949. The *Uniform Accounting System* which was based mainly on the accounting system of Soviet Union (Heng and Noronha, 2011), was developed to facilitate central control and adoption of economic policy for a socialist economy such as China. In particular, accounting practice in China had been dramatically influenced by economic and political events, characterized by the dominance of the state-owned enterprises (SOEs) until the open-up policy since 1979, as well as the political movements of the *Great Leap Forward* of the late 1950s and the *Cultural Revolution* of the mid-1960s (Graham and Li, 1997), which targeted accounting system for simplification. At this stage, there was no income tax levied on the SOEs but all their profits had to be contributed to the state before 1979.

➤ Stage 2: from 1979 to 1993

The desire to expand the Chinese economy in the period of the 1980s led China to move from a centralized economy toward a more market-oriented economy, which marked the change of accounting system from providing information for state control and planning to provide useful information for managerial decision-making (Heng and Noronha, 2011). The accounting system in China had undergone fundamental change in response to the establishment of Shanghai and Shenzhen stock exchange in the early 1990s

and increasing foreign investments in China. Consequently, the 1992 accounting system was consisted of the *Experimental Accounting System for Joint Stock Limited Enterprises* (1992 GAAP) and the *Accounting Standard for Business Enterprises* (the Basic Standard), which was the first accounting regulation for listed firms and represented the first step that brought Chinese accounting systems in line with IAS and international practice (Sami and Zhou, 2004). These varied set of accounting regulations were applicable to all Chinese firms regardless of ownership structure such as listed firms, state-owned enterprises and foreign-invested enterprises (FIEs); In addition, Chinese listed firms should prepare their financial statements based on this Chinese GAAP as well as the IAS if they also issue B-shares, and are required to publish their annual reports at least of the authorized publications before April 30th the following year.

➤ Stage 3: from 1994 to 2006

In the early period, the Chinese accounting system is subject to the rule of tax law, there are almost no differences between accounting system and tax law in terms of revenue, expenses, profits/losses, assets and liabilities. In 1994, the 'interim provisions on the treatment of corporate income tax expenses' issued by the Ministry of Finance, has marked the beginning of measurable separation of accounting system from tax law, while the 'corporate accounting system' implemented in 2001 further the development of the separation. Prior to the issuance of new accounting standards, firms can choose either the tax payable method or tax effect accounting method with respect to accounting treatment of income tax expenses; if the latter is chosen, it should be stated whether the deferral method or the liability method is applied (Article 107, ASBE, 2005). These two approaches have no effect on the measurement and payment of current income tax payable, that is, have no effect on national tax revenue, the only difference is that different items shown under 'income tax expense' in corporate financial statements. It is worth noticing that this stage of standard development was characterized by the adoption of the *Accounting System for Joint Stock Limited Enterprises* (1998 GAAP), which replaced the 1992 Accounting System. Meanwhile, ten specific *Chinese Accounting*

Standards issued by MOF and general principle of freedom were brought into effect. Any accounting treatment resulting in an increase or decrease in profit was acceptable (Wang et al., 2012) given that the firm provided full disclosure. Financial statements of Chinese listed firms were also more commonly audited by independent auditors during this period. These standards were argued to improve corporate accounting disclosure both in terms of quantity and quality. However, since the year 2001, the 1998 Accounting System was replaced by the adoption of *Accounting System for Business Enterprise* (2001 GAAP) as well as 16 *Chinese Accounting Standards*, which included 6 newly issued standards, 5 revised standards and 5 original standards (Peng and Smith, 2010). It represented a further step toward the convergence with international practice, namely International Financial Reporting Standards (IFRS). In most cases, 2001 GAAP was based on the 1998 GAAP but more closer to IFRS.

➤ Stage 4: after the year 2007

A series of new revised 'Accounting standards for business enterprises' was issued by the Ministry of Finance in 15th February, 2006 (ASBE, 2006). The new accounting standards consist of 6 chapters and 25 articles such as general provisions, tax bases, temporary differences, definition, measurement and disclosure. The new accounting standard was effective on 1st January 2007 firstly in Chinese listed companies and then applied through all companies. The issuance and implementation of new accounting standards has witnessed the convergence between Chinese corporate accounting system and international financial accounting standards (IFRS).

In line with IFRS that requires companies to determine current income tax expenses in response to the sum of current income tax payable and deferred income tax, but not the tax effects of events or transactions that are directly recognized in the owners' equity, the revised 'Accounting standards for business enterprises Article 18: income tax expenses' was issued by the Ministry of Finance in February 2006, and it stipulates that firms should apply the balance sheet approach to treat the income tax expenses. That is,

Current income tax expense = tax payable + (ending deferred income tax liabilities - beginning deferred income tax liabilities) - (ending beginning income tax assets - beginning income tax assets)

It can be seen that the system of income tax expense has gone through three phases of tax payable approach, tax effect accounting approach and balance sheet approach.

- Tax payable method:

Income tax expenses = (accounting book income for the year \pm permanent differences \pm timing differences) \times applicable tax rate

It is applied by an enterprise that deferred income tax is not recognized and the tax expense is equal to the provision for taxes payable in a particular period, the current income tax expense is calculated as a product of taxable income and application income tax rate. Under this method, income tax expenses are actually the income tax payable for the year. This approach actually reflects that fact that accounting system is subject to the rules of tax law, and enterprises can avoid the complicated tax adjustments.

- Tax effect accounting method:

Current tax payable = (accounting book income \pm tax adjustments) \times tax rate

It is applied by an enterprise in determining current period income tax expense as a product of total amount of income tax payable for the year and the amount of tax effect of timing differences, with consideration of the tax effect of timing differences. Under this method, the amount of tax effect of timing differences should be deferred and allocated to subsequent accounting periods (Article 107: ASBE, 2005: p180). An enterprise that adopts the tax effect accounting effect may apply either the deferral method or the liability method.

Under the deferral method, where there is a change in the tax rate or a levy of a new tax, it is not necessary to make adjustments to the amount of tax effect of timing differences determined in prior years, but the amount of tax effect of timing difference reversing in the period should be calculated using the income tax rate originally applied. Under the liability methods, where there is a change in tax rate or a levy of a new rate, it is necessary to make adjustments to the amount of tax effect of timing differences determined in prior years, and the amount of tax effect of timing difference reversing in the period should be calculated using the income tax rate applied for the current period.

In a simple way, it is an approach that takes income tax expenses into account during the period where the expenses are incurred, rather than the period where the income tax is payable, differing from balance sheet approach in that timing difference is based on income tax rate incurred in the year.

- Balance sheet approach

Current tax expense = taxable income × applicable income tax rate ± deferred tax expense

Current income tax expense = tax payable + [(ending deferred income tax liabilities - beginning deferred income tax liabilities) - (ending beginning income tax assets - beginning income tax assets)] × applicable tax rate

Under this approach, income tax expenses for the year comprises both current tax and deferred tax (movements in deferred assets and liabilities), based on expected income tax rate back to the year, which was effective since 2007. Current tax and deferred tax are directly recognized in profit/loss account except to the extent that they relate to items recognized directly in equity, with the latter method the amounts of tax are recognized in equity or for goodwill arise from business combination.

The above formulae can be calculated in two steps. The first step is to obtain expected current tax payable calculated on the basis of taxable income at the applicable tax rate for the year with any adjustments to tax payable of previous years. While the taxable amount of income used in calculation of income tax expenses of current term is the result of adjusted accounting profit before tax of the current year according to the relative tax terms. The second step is to calculate the deferred tax expenses. The *Article 18*, ASBE (2006) stipulates certain regulations on the recognition of deferred tax expenses which will not be listed here, at the balance date, the amount of deferred tax expense recognized is measured as a product of settlement of carrying amount of assets and liabilities and tax rate applied in the period when the when the asset is realized or the liability is settled in accordance with tax laws.

3.1.3.1 Article 18: income tax expenses, ASBE (2006)

Disclosure on income tax expenses

In this section, we will list the disclosure on notes to income tax expenses which will be directly related to the measure of tax aggressiveness and help understand measure applied.

The new accounting standards have completely changed the original accounting treatment of income tax expenses and have achieved a major breakthrough on it.

According to the No. 25, Article 18 on income tax expenses, the enterprise should disclose the following information in the notes to income tax expenses section:

- The main components of income tax expenses (income)
- The reconciliation between income tax expenses (income) and accounting profit

-
- The amount of deductible temporary differences and deductible losses of unrecognized deferred income tax assets (if there is a maturity, the enterprise should disclose the expiration date)
 - As for each category of temporary differences and deductible losses, the amount of deferred tax assets or liabilities recognized during the period of presentation of financial statement, the enterprise should define the basis for the recognition of deferred income tax assets
 - Unrecognized deferred income tax liabilities, with respect to the amount of taxable temporary differences associated with the investments in subsidiaries, joint ventures and associates, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

A reconciliation of tax-effect book income and current tax expense is present below (See the annual report of a Chinese listed firm 000625 for an example below). Despite the detailed information disclosure on income tax expenses increases the workload of enterprises on measurement of accounting; it will provide users of financial statements with more useful information in their decision-making. However, the accounting standards and their application guide do not regulate the ways of presenting the reconciliation between income tax expenses (income) and accounting profit, in practice enterprises can disclose the figure adjustments between income tax expenses (income) and the product of multiplication of accounting profit and the applicable tax rate, as well as the disclosure on the basis for definition of applicable tax rate (Deloitte, 2007).

In general, the factors that are most likely to affect the reconciliation between income tax expenses (income) and accounting profit are as follows (Deloitte, 2007):

- Tax exempt income
- Non-deductible expenses when determining the taxable income

- The effect of deductible losses such as utilization of prior years' unrecognized tax losses, or the recognition of previously unrecognized temporary differences in current year from the perspective of recovery
- From the perspective of recovery, termination of other deferred tax assets or provision for the carrying amount of previously recognized deferred tax assets
- Adjustments on the remaining deferred tax due to effect of changes in tax rates
- The effects of application of equity method on investments on joint ventures and associates
- The effects arising from differences in effective tax rate of subsidiaries or subsidiaries of foreign operation
- Tax concession
- Income tax credits or tax refund such as purchase of domestic equipment
- Tax deduction on R&D expenditures

53. Income tax expense

The relationship between income tax expense and total profit is as follows:

Item	2011	Restated 2010
Current income tax expense	166,950,339.69	98,810,530.10
Deferred income tax expense	(143,968,080.89)	(113,382,323.28)
Total	22,982,258.80	(14,571,793.18)

Item	2011	Restated 2010
Total profit	948,631,572.13	1,999,189,623.60
Tax at the applicable tax rate (Note1)	189,726,314.43	299,878,443.54
Impact of non-uniform tax rates of subsidiaries	75,923,437.56	(7,545,064.00)
Adjustments to current income tax of previous period	15,102,452.15	(34,855,391.53)
Profit or loss attributable to joint ventures and associates	(335,108,750.79)	(235,242,137.40)
Income not subject to tax	(1,200,000.00)	(12,800,420.27)
Non-deductible tax expense	40,679,375.00	8,372,751.92
Deductible loss of previous period	(63,251.65)	(729,503.49)
Unrecognized tax loss	42,808,348.49	39,929,364.09
Additional deduction arising from research and development expense	(74,369,278.08)	(71,579,836.04)
Change of tax rate for defer tax assets (Note2)	69,483,611.69	-
Tax expense under actual tax rate of the Group	22,982,258.80	(14,571,793.18)

Note1: The Group accrues the income tax according to the estimated taxable income acquired within PRC and offshore and suitable tax rate.

Note2: Hebei Changan Automobile Co., Ltd., the subsidiary of the Company, is qualified as a high-tech enterprise in 2012 in according to Administration of Recognition of High-tech Enterprises (Guo Ke Fa Huo [2008] No 172) and Instruction of Administration of Recognition of High-tech Enterprises (Guo Ke Fa Huo [2008] No 362), which will be effective in the coming three years date from the certification date. In according to the Circular of the State Administration of Taxation on Issues Concerning the Administration of Reduction or Exception of Enterprise Income Tax (Guo Shui Fa [2008] No 111), Hebei Changan Automobile Co., Ltd., is entitled to a preferential EIT rate of 15% as Hebei Changan Automobile Co., Ltd. obtained the approval as a high-tech enterprise. Accordingly, the defer tax assets were calculated based on the tax rate of 15%.

3.1.3.2 Comment on tax reform and the enforcement of tax rules

The new enterprise income tax (EIT) law is applicable to all domestic Chinese enterprises and foreign enterprises as well as foreign-invested enterprises and they are all subject to a tax rate of 25 percent, which largely eliminated the preferential tax treatment to foreign and foreign-invested enterprises and to be phased out in five years, it suggest a shift of Chinese tax policy towards fairness and neutrality. Tax incentives are redesigned to subsidize all ‘high-tech’ firms and firms that invest in equipment for water conservation, environmental protection and production safety (Li, 2008).

In the short term, the offsetting effect arises from the large decrease in income tax from domestic-invested firms and small increase in income tax from foreign and foreign-invested income due to their limited number, would lead to decrease in Chinese governments’ tax revenues in the short term (Ruan *et al.*, 2010), however, in the long-term, the new EIT law will promote the development of firms’ performance and scale of operations, and will form a long-term stable revenue model for the fiscal revenues. Therefore, the new EIT law affects the tax rates, tax incentives and certain rules of foreign enterprises and foreign-invested enterprises, and achieves the guiding principles of the promotion of overall development of China’s economy, convergence to international tax practices and norms as well as effectiveness in tax administration and simplicity in tax compliance (Li, 2007).

General speaking, the implementation of the new EIT law has positive effects on firms, for example, it is expected to be beneficial to improve the competitiveness of domestic-invested firms, to optimize the industry restructuring and investment of foreign-invested firms, to help reduce the overall tax amount of Chinese listed firms and facilitate the regional economic development and the change in the pattern of economic growth.

However, there are several issues associated with promulgation of the new EIT law which should raise the attention of tax administration and regulators. Firstly, there is problem associated with the consolidated tax payment system.

Since the year 2003, it is stipulated by the Chinese tax regulations that the tax revenues must be shared among different level of governments, which results in conflicts among them. The new EIT law still does not solve this problem and the different level of governments fight for the sources of tax revenues, and may motivate the respective level of governments to direct their firms to minimize tax payment to keep more resources in their controlled areas (Chan *et al.* 2013). Secondly, there is game theory between China's state tax bureau and local tax bureau and between tax authorities and taxpayers, and the latter plays a dominant role. Due to the information asymmetry between tax authorities and taxpayers, there is moral risk inherent and firms can take advantages of information advantages and other measures to avoid taxes or evade taxes, which results in losses in government revenues. Thirdly, the expression of the articles of the new EIT law is ambiguous and vague, for example, there is no detailed criteria on the tax preferential policies, in the articles, there is no clear and specific writing on the tax incentives that firms can apply and only use ambiguous words such as 'rational', 'some proportion of', 'related' incentives, which increase the difficulty in the enforcement of the tax law by tax authorities. Meanwhile, partial important policies in terms of implementation of new EIT law have not been clearly defined such as the treatment of non-taxable income, treatment of equity transfer income and losses, tax treatment of deferred income and losses and tax treatment of loss of intangible assets. Therefore, the practical implementation of new EIT law still needs the supporting tax regulations of regulatory documents; otherwise, the law as well as the implementing regulations cannot ensure the effective enforcement (Ruan *et al.* 2010). Finally, In terms of tax shifting, Article 50 of the new EIT law specifies that 'Unless otherwise specified by tax laws and administrative regulations, resident enterprises whose place of tax payment is the place of registration of the Enterprise but the place of registration is outside the territory, the place of tax payment shall be the place where the actual administration institution is located. Where resident enterprises establish business institutions in China without legal person qualification, it shall consolidate the calculation and payment of enterprise income tax', the implementation of this article transfers parts of tax revenues of northwest

China to eastern China, as Chinese firms start to establish their factories in northwest China and establish their headquarters in eastern coastal China in order to take advantages of cheap rents and labor forces of northwest China. In the long term, it will further increase the disparity between the rich and poor.

Using a sample of A-share Chinese listed firms, study the effects of ownership structure and economic locations on the effective tax rates before and after the implementation of new EIT law, the results demonstrate that new EIT law effectively reduce the tax gap between Chinese listed firms with different controlling shareholding as well as different economic locations, with firms located in the economically developed regions of China, the tax gap is minimal (Luo and Yang, 2011). The results suggest that the enforcement and effectiveness of tax reforms, and provide important implications for the improvement of tax policy. It can be argued that the new EIT law can reduce the room for manipulation through the elimination of policy differences and standardization of tax system, and can restraint the behaviors of Chinese firms and governments to some degree, which in turn can promote the fair tax environment. Meanwhile, it is beneficial for the enforcement of new EIT law for firms located in more economically developed regions and regions with higher degree of marketization, therefore, the tax reforms cannot be separated from the measures, the effective enforcement of new EIT law depends on continuously improvement of the regional economic environment as well as other regional efforts. However, we should recognize the limitation that there is no prior literature that documented the enforcement of tax rules, and this is due to the very limited disclosures on tax enforcement and violations, which should raise the attentions from related tax administrations.

In sum, the implementation of the new EIT law is argued to represent a growing confidence in China's global standing, and appear to be welcomed by investors and capital markets in China, as the large domestic enterprises that dominate the indexes of Chinese stock market such as the major banks, telecoms companies, oil and gas manufacturers can expect their after-tax earnings boosted by the tax changes; it is also welcomed by foreign investors

that search for a more transparent tax policy as part of their investment environment (Li, 2007). It is argued that the overall tax rate of 25 percent is competitive when compared with neighboring countries and the new law would have minimal negative impact on attracting FDI to China. The biggest concern is thus far that more details and transparency for the implementation of the new EIT law.

3.1.4 Tax research in Chinese markets

In terms of tax research in Chinese market context, most of research has focused on the earning management (e.g. Dai & Yao, 2006; Ye, 2006; Liu & Lu, 2007; Zheng & Liu, 2008; Lu *et al.* 2010; Zeng, & Lv, 2010; Chen *et al.* 2011; Tang & Firth, 2011; Firth *et al.* 2013). For example, Dai & Yao (2006) empirically study the institutional factors of book-tax differences and the effect of the effort for conformity between accounting system and tax rules, in order to study the tax aggressive behaviors of Chinese listed firms, they find that a significant relationship between the increasing book-tax differences and earning management behaviors of Chinese listed firms, and institutional differences and earning management factors account for a significant portion of changes in book-tax differences, which provide important implications for the cooperation among supervising institutions. Managers are provided incentives to manipulate non-taxable earning in order to avoid the tax obligation of earning management, Ye (2006) examines the relationship between book-tax differences and earning managements, and finds that book-tax differences are positively related with earning management, and further provide evidence that firms in the higher tax rate group have strong incentive to avoid tax obligation through non-taxable items and long-term accrue items, for one dollar earnings manipulated, only 1.8 cents are exempted from tax obligation, which implies that managers are more likely to pay tax for earning management in order not to be suspected by capital markets or tax authority. Tang & Firth (2011) provide evidence on the value relevance of book-tax differences in Chinese markets, using unique tax-effect book-tax differences data obtained from Chinese-B share listed firms, they find that book-tax differences are associated with both accounting and tax

manipulations induced by managerial opportunities, and can capture not only earning management but also tax management in China, a country with different institutional and regulatory market contexts from those in the developed economies. In addition, since the year 2002, it stipulated by the Chinese tax regulations that tax revenue collected from all local government-controlled firms and some central government-controlled firms must be shared among different levels of governments. For example, for corporate income tax paid by local government-controlled firms, the local government can only take 40 percent of the tax revenue. Due to the fact that respective local governments cannot take 100 percent of the tax revenue, local governments are motivated to direct their firms to minimize tax payment to keep more resources in their controlled firms. Mi & Huang (2012) find that firms with their income tax collected by local governments are more tax aggressive are compared to that firms with income tax collected by central government and state taxation bureaus; in addition, there is a positive correlation between the local government and the level of tax aggressiveness in the east regions, that is, the strength of the income collection by local governments is reduced for the abundant tax source.

Prior studies provide mixed and inconclusive evidences on the effects of corporate governance characteristics on earning management and firm performance in China (Chen *et al.* 2006; Liu & Lu, 2007; Lo *et al.* 2010). For example, Liu & Lu (2006) investigate the relationship between corporate governance and earning management in China from the perspective of tunneling, and they find that firms with higher level of corporate governance are associated with lower level of earning management, agency conflicts between controlling shareholders and minority shareholders can contribute to a significant portion of earning management in Chinese listed firms; Lo *et al.* (2010) also provide evidences on the role of a good corporate governance structure in constraining managers' opportunistic behaviors in earning management in the form of transfer pricing manipulations.

As we can see that, prior studies that, on the one hand, are based on the

institutional factors that account for book-tax differences, on the other hand, are based on the relationship between book-tax differences and earning management or the earning quality. Recent studies have started to examine the role of state ownership that plays in firms' tax reporting practices in China. For example, Zeng (2010) investigates the relationship between ownership structure in particular, ownership concentration and state ownership and tax reporting practices of listed firms in China, and finds that government-controlled firms pay more (as proxy by higher effective tax rates) when compared to non-government-controlled firms. Wu *et al.*(2013) also provide evidence that local state-owned enterprises pay a higher effective tax rate than that of private firms, due to the preferential tax incentives from local governments associated with private firms in order to promote local economic growth. However, these studies do not deal with the effect of corporate governance mechanisms such as ownership structure and executive compensations as well as their interactive effect on a firm's tax reporting, in this study, we will fill in the gap to take advantage of the institutional setting in China to specifically on several corporate governance characteristics and their impacts on the tax aggressiveness of Chinese listed firms. Minnick & Noga (2010) find that except that compensation contracts, board of directors characteristics do not have impact on a firm's tax management in the United States, therefore how corporate governance characteristics in Chinese context affect tax aggressiveness is yet to be explored.

3.2 Corporate governance in China: Overview

It is argued that there are two competing views on the appropriate type of corporate governance, namely the market-based approach applied in the UK and U.S. and the control-based approach found most commonly in emerging economies and in continental Europe, although academic research hasn't arrived at a definite conclusion regarding the relative superiority of either type (Bai *et al.* 2004). The features of the market-based governance model include an independent board, dispersed ownership, transparent disclosure, active takeover markets, and well-developed legal infrastructure, specifically, the

largest shareholders play a passive role in the management of firms and do not intervene directly in the day-to-day business and the protection of minority shareholders is well established by law and regulations (Chen *et al.* 2006) ; on the contrary, the control-based model consists of a concentrated ownership structure, insider board, , large investor involvement in firm decision making, limited disclosure with family finance or the banking system for support (Bai *et al.* 2004). There are virtually no markets for corporate control as only a small proportion of shares are circulated on the market and is impossible to acquire sufficient shares to deprive of existing management teams (Chen *et al.* 2006).

It can be found that the corporate governance model applied in China can best be characterized as a control-based approach, where the controlling shareholders, in most cases being the state government, and a variety of governance mechanisms are employed to tightly control the listed firms. It can be seen that a management-friendly insider board, concentrated ownership structure, inadequate financial disclosure and inactive take-over markets have been the governance norms in China (Bai *et al.* 2004). In terms of this approach, stock market is heavily regulated by the Chinese government and its development is subject to constant government intervention. For example, the Chinese government might try to simulate recessionary market by relaxation of regulations and policies. So how has the control-based governance model emerged in China and what institutional determinants are driving its evolution over time?

China has emerged as one of the largest economies in the world and its economics has grown rapidly since its beginning of economic reform. With the government introducing a great variety of privatization and economic reforms into the state-owned sectors, many state-owned enterprises (SOEs) have since been transformed into publicly listed companies on the Chinese and Hong Kong stock exchanges, with government remaining the major shareholder of SOEs through state-owned shares and state-owned legal person (institution) shares, accounting for two-thirds of the total shareholding

(Cheung *et al.* 2008). Agency conflicts and moral hazard problems can be very severe in this setting, a new agency problem arise from the privatization of SOEs with dominant state ownership, which is a conflict of interest amongst stakeholders. It is possible that government has more comprehensive goals other than shareholder value maximization (Cheung, *et al.* 2008). For example, the Chinese government may view that social welfare is potentially more essential than that of value maximization; consequently, a controlling government stockholders can achieve their policy goals via listed firms as a vehicle, even though they may create conflicts with interests of shareholders. The corporate governance structure of listed firms in China will become a more critical issue as China continues to gradually open its financial markets to foreign investment. It is of significance to have a deeper understanding of the current corporate governance system in China and the corporate governance studies related to the Chinese market. What has been lacking in this process is a sound theoretical framework to embrace the unique social/practical/economic environment of China.

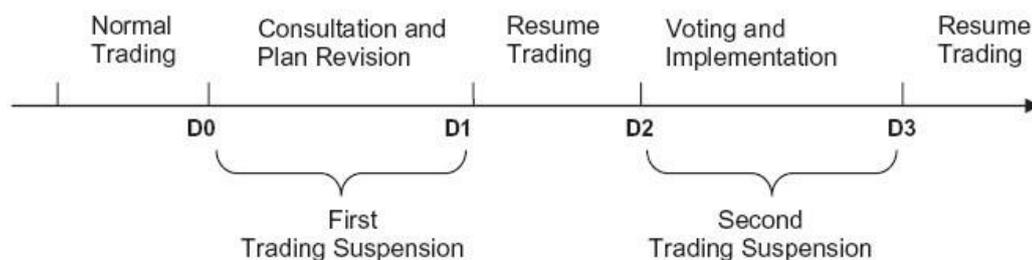
Chinese listed firms have multiple classes of shares: shares that can be traded by domestic investors (A-shares), shares denominated in foreign currencies and reserved for foreign investors (B-shares), and shares of companies listed or cross-listed overseas (H-shares listed in Hong Kong). Approximately 5% of firms issue both A and B shares. A special feature of the ownership structures in China is the existence of non-tradable shares owned by the state to retain control over the listed firms which are classified as state shares and legal person shares, which are often also state owned. The state's shares are administered by government bodies, such as state asset management agencies or institutions authorized to hold shares on behalf of the state, such as wholly state-owned investment companies (Firth, *et al.* 2007a.b). There is a consensus in the existing literature that non-tradable shares are the major drivers of problems in Chinese stock market due to its restriction on the merger and acquisition activities of domestic firms through stock market. For example, the holders of non-tradable shares have the controlling power to determine the corporate policies but their wealth are unrelated to the market prices of

tradable shares. As a result, the market value as well as investor behaviors would neither reflect nor influence the fundamental values of these listed firms (Tong et al, 2012). It is argued by Wu (2004) that the settlement of stock right splitting issues would resolve 80 percent of the problems in the stock market, although Qiu & Yao (2009) suggest that the split share structure (tradable and non-tradable) has impeded the stock markets development and the transformation of the Chinese listed firms.

A recent reform that has been taking place since 2005 deserves a particular mention, as it has the potential of resulting in a fundamental change in the ownership and control structure of Chinese listed firms, which is the so-called 'share-structure reform' (Xi, 2009) or 'split-share structure reform' that phases out the restriction on the transferability of non-tradable shares by paying compensation either in cash or in shares to tradable shareholders, usually in average three shares for every ten tradable shares, despite that these compensation schemes were negotiated on an individual company-by-company basis. Table 3.3 briefly lists the main reform plan that most listed firms follow. As a consequence, a more dispersed ownership structure emerges and controlling shareholdings in many listed firms are being diluted. However, concentrated ownership structure remains a defining feature of Chinese listed firms as the sale of current tradable state-owned shares is still subject to administrative approval (Xi, 2009). In 2005, the 'Guidelines on the reform on non-tradable shares of state-controlled companies' was released by the State-owned Assets Supervision and Administration Commission (SASAC), specifying the requirements on the percentage of state shares to be held by state-controlled firms (Yuen & Zhang, 2008). It states that the approval of the SASAC is required for any sale of state shares; however, a controlling stake in listed firms should be maintained by the state in the industries which are vital to the national economy or security. In particular, these firms are required to include a restriction on their proposal of reform that state shareholding cannot be a particular level.

The figure 3.1 presents the time line that a firm must go through a typical reform process. There are two trading suspension between the reform process. The first period of trading suspension starts on the day D0 when the listed firm announces the split share structure reform, during this time period, the holders of tradable shares are provided a satisfactory compensation plan by holders of non-tradable shares including cash, asset restructuring, warrants and frequently additional shares in order to vote with the reform plan (Li *et al.* 2011; Tong et al, 2012). If both groups of tradable shares and non-tradable shares agree on the reform plan, the reform plan is revised and finalized; trading resumes on day D1 and continues until day D2. Investors have the voting rights against the reform during the second period of trading suspension; the compensation plan must be approved by at least two thirds of the shareholders of voting tradable shares. If the reform proposal is approved, it will be implemented before the trading resumes on day D3 and all holders of tradable shares would be entitled to the compensation in the final plan if they hold shares at the closing day D2 (Tong et al, 2012).

Figure 3. 1: Reform process



Source: Tong *et al.* (2012)

Due to the split share structure reform, both the A shares and B shares can further classified into two groups, the restricted shares and the tradable shares. Restricted shares are shares that can only be transferred privately or auctioned, usually at a discount value relative to that of freely tradable shares in the firm, and are not allowed to trade freely on the Chinese stock exchange (Hou, Kuo & Lee, 2012). However, it is worth noting that restricted are non-tradable for

only a period of time, The reform regulations require that non-tradable shares are not allowed to be sold publicly or transferred within a lockup period of 12 months from the time the firm announced the split share reform implementation plan, and after the lockup period, the non-tradable shares can be actually traded with the restriction that (Hou, Kuo & Lee, 2012)

1. A former holders of non-tradable shares with more than 5 percent of total shares of a listed firm are only allowed to sell at most 5 percent of the shares outstanding within 12 months upon the expiry of the lockup period
2. With a maximum of 10 percent within 24 month after lockup period
3. and then have the flexibility to sell all the non-tradable shares after 36 months

To date, more that 99 percent of Chinese firms listed on Shanghai and Shenzhen stock markets have compensated tradable shareholders, the non-tradable shares of these firms are gradually becoming tradable; while the remaining firms are nominated as S-shares as they have not compensated their tradable shareholders and have been limited in their market prices to fluctuate no more that 5 percent on any trading day (Yang, Chi & Young, 2011). It is evidenced by Yang, Chi & Young (2011) that this reform resulted in statistically significant positive average market adjusted return as well as average abnormal returns for listed firms.

Table 3. 3: Split-share reform plans

Plan classification	Plan details
Compensation shares	Mostly non-tradable shareholders make share compensations to the tradable shareholders and sometimes listed firms make the compensation
Reverse stock split	Non-tradable shareholders contract their share according to some ratio
Cash compensation warrants	Non-tradable shareholders issue warrants to shareholders
Asset restructure	Major non-tradable shareholders make some asset restructure with the listed firms
	Note: if the tradable shareholders did not get the compensation from non-tradable shareholders, they would suffer from a huge loss.

Source: Hou, Kuo & Lee (2012)

In a word, China's stock market is in its infancy and was established under centrally planned economy, accompanied with value maximization is not the sole objective of these Chinese listed firms. The Chinese corporate governance system which is characterized by multiple goals of listed companies, highly concentrated ownership, expropriation of minority shareholders by controlling shareholders, strong insider board and a weak legal system for shareholder protection are found to be the most serious problems in China and has seriously impeded the development of an effective corporate governance system for Chinese listed companies. Therefore it is interesting to see how these unique features of Chinese market affect corporate governance practices as well as tax aggressiveness and their potential firm performance.

3.2.1 Corporate governance regulations and issues in China

As discussed above, regulations on the relationships among all parties with interests in a firm are covered by Chinese definitions of corporate governance; however, in practices the Chinese corporate governance system focuses almost

exclusively on agency problems and within only two types of firms: listed firms and state-owned enterprises (SOEs) (Clarke, 2003). As this study will discuss Chinese corporate governance in a narrow sense, some major corporate governance issues faced by Chinese listed firms are discussed in this section.

In general, In China, properly dealing with the relationships among various stakeholders of a firm becomes perhaps the most important issue; in particular, with further development of the Chinese stock market, a new corporate governance system for listed firms is developing in China which includes both internal and external control. It is noted that information disclosure may play a dominant role in external control, whereas for internal control, a dual-board system namely the board of directors and supervisory board and the independent director system have been introduced.

The legal reforms that have been put in place, especially the 2005 amendment of the Company Law provides a better legal basis for the corporate governance system. However, they have not yet effectively to address the fundamental agency problem facing Chinese listed firm that is the expropriation of minority shareholders by the controlling shareholders. Controlling sellers and buyers in the private sale of control have been able to extract large private benefits at the expense of the minority shareholders of the target firm. Institutional shareholders have to overcome many legal and regulatory barriers that hamper their ability to participate in the governance of their portfolio companies. Independent director have not yet to act with rigorous independence, and a change is necessary to provide effective insight for detecting wrongdoing of the management or the controlling shareholders to whom they owe their appointment (Xi, 2009).

3.2.2 Legal framework for corporate governance

The legal framework under which Chinese listed firms are governed is laid down by the 1993 Company Law. The overall framework has remained

largely unchanged since 1993, although important reforms were introduced by the revised 2005 Company Law (Xi, 2009). According to section 4 of the Company Law, Chinese companies including listed companies have been required to have three governance organs-the shareholders' general meeting, the board of directors and the supervisory board. The shareholders' general meeting is at the top of the power of a company, it is responsible for electing members of board of directors and the supervisory board, examining and approving reports from the two boards and making other important decisions for the company (Yuen & Zhang, 2008).

In order to improve the corporate governance system in China, the independent director system has been introduced since 2001 (Yuen & Zhang, 2008). The China Securities Regulatory Commission (CSRC) currently requires all the domestically listed firms to hire at least two independent board directors and similar requirements were also added into the revised 2005 Company Law. However, yet Yang (2008) and Xi (2009) argue that the independent director system has not worked as effectively as expected so far. Anecdotal evidence suggests that in many cases independent directors in a listed firm cannot be really independent of management or the controlling shareholders to whom they owe their appointment. The exercise of corporate power by the senior managers and controlling shareholders in Chinese listed firms remains unchecked and unbalanced (Xi, 2009). Thus, a change that is necessary in order to provide effective insight for detecting wrongdoing of the management or the controlling shareholders to whom they owe their appointment. On the other hand, the supervisory boards in most Chinese listed firms are also ineffective in supervision of performance in terms of the board of directors and management (Yuen & Zhang, 2008; Xi, 2009). For example, the supervisory boards played almost no role in many disclosed cases of misconduct of the board of directors and management in China. It is indicated by Dahya et al (2000) that five causes for the ineffectiveness of the supervisory board in China, namely, a lack of independence, a lack of incentives, a lack of legal power and responsibilities, technical incompetence and information unavailability. The good news is that significant amendments

were made to address many of the issues identified with the 2005 amendments to the 1993 Company Law and there is a significant enhancement of the effectiveness of the supervisory board (Xi, 2009). Arguably, however, there is room for further entrenchment of the supervisory board, for example, provision could be inserted to help ensure that at least some of the supervisors are independent (Xi, 2009). It can be noted that the dysfunction of the supervisory board in practice can perhaps be attributed as much to its lack of independence as to its lack of effective powers. Another area of possible improvement is perhaps the addition of provision that create adequate liability incentives for supervisors to play a more active oversight role (Xi, 2009). The revised 2005 Company Law lay down the general rule that supervisors owe duties of loyalty and duties of due diligence to the company, however, they do not set out the substance of these duties.

3.2.3 Institutional Investors

Institutional investors have become increasingly important in the Chinese stock markets as equity holders. Institutional investors are viewed as more effective for good corporate governance performance in respect that they can take advantage of more resources to control managers as compared to other small individual investors.

The share ownership of securities investment funds, insurance companies, pension funds, securities companies, commercial banks, and qualified foreign institutional investors has grown dramatically in recent years. As institutional ownership increases, the institutions' role as shareholders has also evolved. It is widely accepted that institutional investors play an active role in disciplining and monitoring managerial discretion as well as reduction in information asymmetry and help increase the protection of minority investors in decisions of listed firms. In general, institutional investors are usually capable of monitoring the performance of managers in an effective way, due to the fact that firstly, institutional investors have more expertise in finance, accounting and law to better discover misstatement than other investors;

secondly, institutional investors have better information access and on some occasions, are also willing to share that information with other shareholders; and finally, interests of institutional investors and other shareholders are largely aligned, both want to maximize a firm's profit and its stock prices (Yuen & Zhang, 2008). Therefore, minority shareholders could benefit from the efforts made by institutional investors in monitoring and participating in the operation of the company.

At the end of June 2007, the presence of 343 open-ended mutual funds have grown their total net value to 1,796.9 billion Chinese RMB, however, the impact of mutual funds on corporate governance of Chinese listed firms has been few studied (Yang, Chi & Young, 2011). In effect, Xu and Wang (1999) and Qi *et al.* (2000) find that in general, corporate performance of Chinese listed firms is positively correlated with concentrated institutional shareholding other than state shareholding and is negatively associated with dispersed ownership. As we have discussed, state ownership may be subject to substantial political costs and agency costs in monitoring a company, the dominance of private institutional investors may improve the corporate governance of listed companies. In China, there are two types of institutional shareholders: those who hold legal person shares and those who hold common A-shares. Xu and Wang (1999) and Sun & Tong (2003) find a positive relationship between that firms' performance and the percentage of institutional legal person shares. It is expected that their impact will become more important as most legal person shares have just become tradable in the market.

Nevertheless, the role of institutional investors holding common A-shares is limited at present (Yuen & Zhang, 2008). The shareholding of these institutional investors in Chinese listed companies is too low to provide them with an incentive to monitor corporate performance. However, the situation is changing after a series of liberalization measures in the Chinese stock market. In 2001, the ban on social security fund was relived and six domestic mutual fund firms was selected by Chinese government, some of which have been

invested in domestic stock markets since 2003 (Yuen & Zhang, 2008). In December 2002, qualified foreign institutional investors (QFII) scheme was implemented to attract foreign institutional investors to invest their money into its domestic stock market. At the end of 2007, 52 foreign institutional investors were granted QFII status by the CSRS; the number of QFII increased by 73.3 percent compared with that in October 2005 (Yuen & Zhang, 2008). Therefore, domestic and foreign institutional investors are going to be important participants in the Chinese stock market. With more participation on the part of institutional investors in the Chinese stock market and the reduction of state ownership in many listed firms, it is expected that there will be a better corporate governance system, including stronger protection for minority shareholders in the near future.

3.3 Developing a Corporate Governance and Tax Framework

3.3.1 Introduction

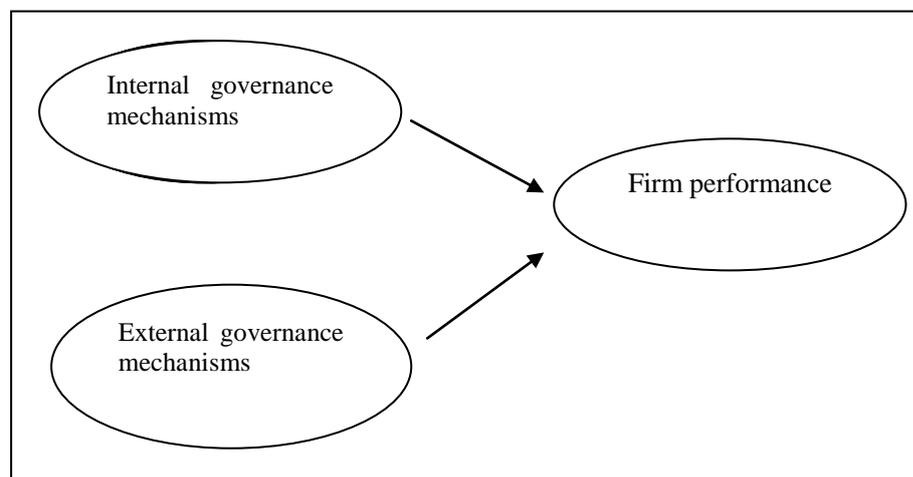
The theory that corporate governance can affect corporate tax shelters is currently incorporated into many of the recent papers examining the determinants and consequences of tax sheltering. However, up to the present, the field does not have a comprehensive model or understanding of why some firms avoid tax more than others. Several recent studies investigate the intersection between firm-level characteristics and corporate tax shelters using a number of proxies such as average Effective Tax Rate (ETR). For example, Gupta and Newberry (1997) discuss the fact that there are a great variety of determinants of GAAP ETRs and Rego (2003) provide evidence that more tax sheltering opportunities lead to lower GAAP ETRs are associated with the scale of international operations.

In general, previous recent studies primarily explore tax aggressiveness across firms within one country, mostly within a US context, where all firms operate under the same tax system, financial accounting standards and institutional arrangements. A growing literature points to the fact that aggressive tax planning is affected by corporate governance attributes (Desai and

Dharmapala 2006; Wilson, 2009); and manager incentives (Phillips, 2003; Rego and Wilson, 2009; Armstrong *et al.* 2010; Gaertner, 2013). Furthermore, studies suggest that firms with industry expert external auditors are more tax aggressive (McGuire *et al.* 2012) but firms that decrease or terminate the purchase of tax services from their auditors are less tax aggressive. In addition, aggressive tax planning is associated with family versus non-family ownership (Chen *et al.* 2010), institutional ownership (Khurana and Moser, 2013) and the extent of private versus public ownership (Badertscher *et al.* 2013). Moreover, U.S. multinational firms are more tax aggressive than domestic-only U.S. firms (Rego, 2003; Dyreng and Lindsey, 2009) and firms that are more tax aggressive generally have lower leverage (Graham and Tucker 2006; Lisowsky, 2010). Finally, firms are less aggressive when they have federal government contracts or strong labor union presence (Chyz *et al.* 2013).

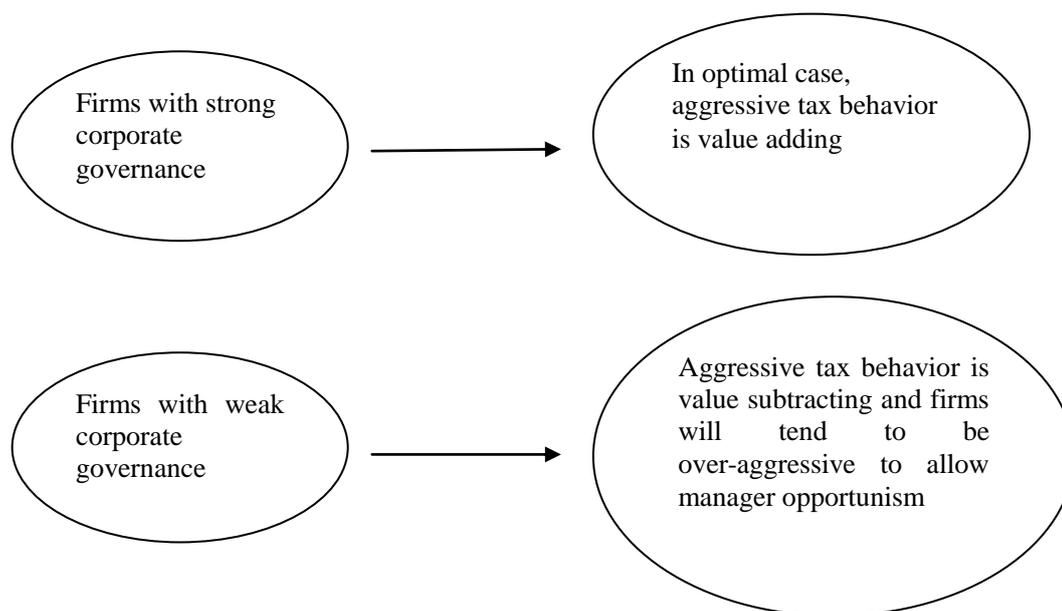
This study endeavors to add to our understanding of the drivers of tax aggressiveness and firm performance in China, by extending, integrating and enriching the lines of work. The governance and performance of Chinese firms necessitate more research attention as China emerges a global economic power (Wright, *et al.* 2005; Hu, Tam & Tan, 2009). Earlier research has investigated how these factors affect firm performance (Figure 3.2), but given the uncertainty of China's institutional transition, previous research have not captured some Chinese unique characteristics, therefore, we will incorporate these characteristics in our research design.

Figure 3. 2: Existing research



One of the significant differences is the mixed ownership of shares between Chinese listed firms those of in other countries. The dominant shareholding (in many cases, controlling shareholding is the state, regional or local government) in most listed firms exerts substantial control through voting rights as well as board representation, which helps shape the policies and strategies of the listed firms (Firth *et al.* 2006). State-owned enterprises (SOEs, from which listed firms was carved out) or private-owned enterprises (that are not controlled by a SOE or the state) are governed differently in China (Peng *et al.* 2004), and different objectives are faced by the different types of controlling shareholding. For example, a different set of control and monitoring mechanisms are employed by CEOs in SOEs and private-owned enterprises, resulting in different incentives on how to most effectively apply tax aggressiveness. Managers in SOEs have little incentive to operate from a profit maximization perspective (Wang & Judge, 2010), even if firm profitability is considered in the management objective, the insignificant weight assigned to managerial effort lead to little incentive to maximize profits and make efficient use of resources. It has been argued that efficient executive compensation is not extensively applied from a profit-maximization perspective in China (e.g. Fleisher, 2001) and use of poorly designed performance contracts with little or no incentive for managers has been accused of significant losses generated (Shirley & Xu, 2001).

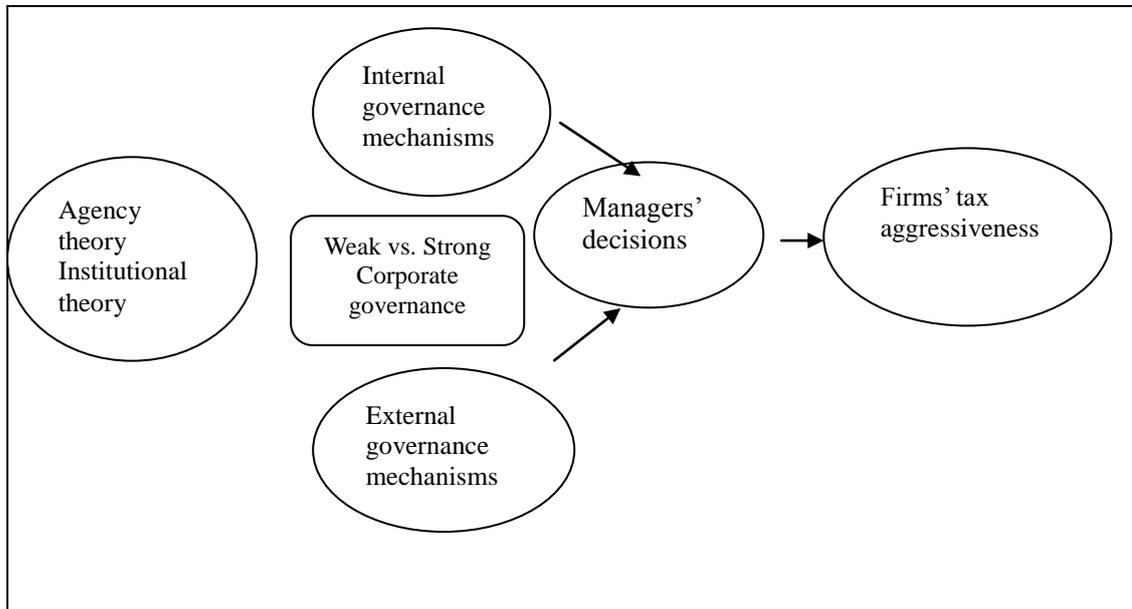
Figure 3. 3: An integrative framework for this study



Advancing this research, we develop an integrative framework (Figure 3.3) to examine the determinants and consequences of tax sheltering activities from the agency and institutional perspectives. As a result, to address an important and previously underexplored question: how do corporate governance issues affect tax aggressiveness of listed firms and thus their potential firm performance with different ownership type? Our research question is related to the call by Shackelford and Shevlin (2001) and Hanlon & Heitzman (2010) for further research on the drivers of cross-sectional variation in tax planning. The extension of the theoretical foundation of tax planning activities in a principal-agent setting should contribute to the growing literature that analyses the role of corporate governance in controlling tax aggressiveness. Tax planning can be complex and obscure which allows for managerial opportunism. Understanding the role that corporate governance plays in the case of an opportunity for managers' actions that benefit themselves versus shareholders can shed light on how corporate governance works. Meanwhile, there is significant uncertainty associated with tax planning which may not be immediately beneficial to performance of a firm, understanding how corporate governance is related to tax sheltering can provide an insight into how corporate governance works in the short-term as well as the long-term.

As we will discuss below, the empirical findings in the corporate governance and tax management literature, albeit mixed, generally suggest that strength of corporate governance should be negatively related to tax sheltering activity or mitigate financial reporting aggressiveness. These finding may imply that tax aggressiveness can be viewed on balance as an undesirable management behavior. However, it is not clear *a priori* that the relationship between corporate governance mechanisms and tax aggressiveness should be so straightforward. As this is due to the fact that tax sheltering activities provide earning benefits and real cash flow to the firm, but may also incur associated costs that may outweigh these benefits if tax avoidance activities are too aggressive (See Section 3.1 for more detail). Therefore, it is possible that more effective monitoring responsibility by the corporate governance mechanisms could have a positive or negative impact on tax reporting aggressiveness, depending on the relative preference for tax sheltering of firm managers and shareholders (Moore, 2007). As Jimenez-Angueira (2007) propose that, shareholders have to employ controls and incentives, through corporate governance mechanisms in order to induce managers to tax position that would result in optimal profit-maximizing tax aggressiveness level where marginal benefits of tax-aggressiveness activities are balance against the costs of those transactions. Firms with strong corporate governance structure should be able to minimize their agency problems with respect to tax position and achieve the optimal level of tax aggressiveness by interests alignments of managers with those of shareholders, while firms with weak corporate governance have unresolved issues related to tax position could allow managers to take advantage of uncertainty with tax system and their informational advantage to engage in tax aggressiveness that are beneficial to their personal gains at the expense of shareholders' wealth. This point of view has been evidence in recent studies (e.g. Desai & Dharmapala, 2006, 2009; Moore, 2007). As a result, following the previous theoretical research, we can expect that firms that are poorly-governed to be very tax aggressive and firms that are well-governed merely to be optimally tax aggressive (see Figure 3.4).

Figure 3. 4: Interaction between firms' corporate governance strength and tax aggressiveness



3.3.2 Corporate governance mechanisms employed in China

Broadly speaking, there are two types of mechanisms employed to resolve the conflicts in a principal-agent setting, in order to better evaluate the current corporate governance practices in China. The importance of effective corporate governance has been emphasized by various academics. The corporate governance system can vary widely depending on the mechanisms firms employ to influence the managers and to promote alignment of their interests and those of managers. Prior studies suggest that a good corporate governance can serve as an effective mechanism to mitigate the opportunistic behaviors of management, effectively alleviate agency problems-especially the agency conflicts between the controlling and minority shareholders, protect shareholders and ensure that investors get a fair return on their investment (Shleifer & Vishny, 1997; Denis & McConnell, 2003; Gillan, 2006). A good corporate governance is also indicative of a more transparency which makes income sheltering more difficult and thus can reduce tax sheltering (Desai, Dyck & Zingales, 2007).

Early economist Adam Smith (1727-1790) has proposed the issue of the separation of ownership and stewardship in joint-stock firms in his book named 'the wealth of nations', and Berle & Means (1932) further argues that managers of a firm pursue their own interests rather than interests of shareholders in practice. Berle & Means (1932) highlights that the nature of the firm as well as the principal-agent problems has called for the development of the agency approach to corporate finance. Thus, a set of effective mechanisms to resolve the conflicts is necessary. Another conflict of interest arises as controlling shareholders take actions to benefit themselves at the expense of minority shareholders. The term tunneling is applied by Johnson *et al.* (2000) to describe the transfer of resources out of firms for the benefit of controlling shareholders, which is a serious agency problem in emerging markets, evidenced from the Asian financial crisis. Tunneling is also possible in mature economies with the evidences of recent scandals of Enron, Global Crossing and WorldCom.

Agency theory and the corporate governance literature identify and propose a range of devices to protect investors from the self-interested motivations of managers and controlling shareholders. The first category of corporate governance consists of internal mechanisms including ownership structure and control, characteristics and composition of the board of directors, executive compensation, and finance disclosure; the second are external mechanism including the effective external takeover market, the legal infrastructure and state regulatory system, and product market competition (Bai *et al.* 2004). Ownership structure is vital to the maximization of firm value, of the four internal mechanisms. Concentrated shareholders can exerts an overpowering influence to exploit resources of the firms for their personal interests at the expense of other shareholders.

Some literature have centered on how corporate governance shapes the behaviors of the CEOs and top managers, for example, company ownership and board structure have been used to help explain decision of management in the area of corporate restructuring (Bauguess *et al.* 2009) and pricing of

executive stock option. Some studies have focused on how corporate governance has prevented managers from opportunistic behaviors in a firm's financial statement (Chung *et al.*, 2002; Park & Shin, 2004), related-party transactions (Lo *et al.* 2010) and corporate fraud (Chen *et al.* 2006). Of course, it is worth noting that as pointed out by Rediker & Seth (1995) that the broader connections among various governance mechanisms and their joint impacts are often ignored when studies on a single corporate governance mechanism. Agrawal and Knoeber (1996) agree this point of view and further propose that interdependence of various governance mechanisms cannot be detected with a focus on a single governance mechanism. For example, Berglöf & Claessens (2006) provide evidence that ownership concentration might exert a substantial discretionary power especially in countries with weak legal enforcement and regulatory environment.

3.3.3 Internal governance mechanisms

In terms of the agency theory, separation of ownership and control leads to divergent interests between managers and shareholders (Jensen & Meckling, 1976). Thus, it is crucial for board of directors to monitor managerial decision in order to ensure protection of interests of shareholders (Fama & Jensen, 1983). However, according to existing literature, the central agency problem for listed firms under a concentrated ownership structure in emerging markets is the exploitation of minority interests by controlling stockholder (Shleifer & Vishny, 1997), is not the conflict between management and shareholders usually under a diffused ownership structure as argued by Berle & Means (1932). For example, excessive executive compensation, loan guarantees, dilution by new share issue, transactions such as asset sales and purchases, intercompany indebtedness, and purchases and sales of goods and services between the listed firm and the private business interests of the controlling shareholder may be done at prices that are disadvantageous to the small shareholders (Bai *et al.* 2004; Firth, Fund & Rui, 2008). Johnson *et al.* (2000) identify it as tunneling to describe the transfer of resources out of firms for the benefits of controlling shareholders.

Firms with concentrated ownership have the influential power to appoint managers to be representative of interests of controlling shareholders instead of having divergent interests. The conflict of interests between controlling and minority shareholders was exacerbated in China due to the fact shares of listed firms being split into tradable shares held by minority shareholders and non-tradable shares held by controlling shareholders (Zou *et al.* 2008; Yang, Chi & Young, 2011). The internal corporate governance from boards and audit committees can serve a monitoring role in restraint of tax sheltering activities. In the following section, we will discuss how the various internal governance mechanisms shape or constrain the opportunistic behaviors of managers in terms of tax management.

3.3.4 Characteristics and composition of board of directors

3.3.4.1 Board composition

Previous literature examining the intersection between corporate governance and tax aggressiveness (Desai & Dharmapala, 2006; Chen *et al.* 2010; Hanlon & Slemrod, 2009) does not attempt to decompose corporate governance into its major mechanisms such as board of director. The extant literature provide little discussion about responsibilities of directors involved in terms of tax compliance and tax governance (Owens, 2008), despite that it have been recognized by tax authorities that the significance of the board as an internal control mechanism for reducing tax aggressiveness (Lanis & Richardson, 2011). As a matter of fact, the board of directors is held accountable for the tax affairs of the firm; the role of board of directors in corporate governance is important with its fiduciary obligation to shareholders and its ultimate responsibility to provide monitoring and strategic direction (Owens, 2008).

From an agency theory perspective, board of directors serves as the primary internal mechanism for constraining managers' opportunistic behaviors, which help to align interests of managers and shareholders (Jensen, 1993). Traditionally, studies on corporate board of directors has focused on relationship between board structure and firm value (e.g. Peng, 2004; Chen *et*

al., 2006), while board size and the independence of board from the management (e.g. Brick et al, 2006), the role of CEO duality (e.g. Goyal & Park, 2002), theoretical aspects of board structure (e.g. Raheja, 2005; Harris & Raviv, 2008) as well as evolution of board structure (Berry *et al.* 2006) play essential role in the literature to date.

Shareholders can exert influence through the board of directors on managers' behaviors in order to ensure their interests being protected by the firm. However, this influence may be less effective especially when managers are in the domination of the board (Bai *et al.* 2004). Furthermore, a firm's board composition can be significantly influenced by its ownership structure, for example, large or controlling shareholders employ a variety of governance mechanism to exert tight control at expense of minority shareholders. Controlling SOEs can assign the CEOs or chairmen of listed firms to ensure their representatives on the board, which is particularly for listed firms with no independent nomination committees where SOEs can exert significant influence through economic or political power (Lin, Lu & Zhang, 2012). However, this practice significantly compromises corporate board independence (Liu & Lu, 2007) but provides a scope for controlling shareholders to pursue their own interests/objectives or to expropriate minority shareholders via tunneling (e.g. Johnson *et al.*2000; Claessens *et al.* 2000; Friedman *et al.* 2003; Liu & Lu, 2007; Lo *et al.* 2010; Lin, Lu & Zhang, 2012).

It is well evidenced that the board composition such as the board size and percentage of insiders on the board) can influence the effectiveness of monitoring, despite the fact that there are competing views as to how composition of the board affects monitoring which in turn affects the firm performance. Earlier literature show that firms with larger boards along with more inside directors lead to agency problems compared to firms with small boards and a higher percentage of outside directors (Hermalin & Weisbach, 1991; Yermack, 1996; Core *et al.*1999), although recent studies document the vague connections between board composition and firm performance, which

varies with characteristics of the company (e.g. Coles *et al*, 2008). Relating the literature to the research question at hand, it is possible that it is possible that small boards may be more active in making decisions in terms of diverting resources to tax management (Park & Shin, 2004; Minnick & Noga, 2010).

3.3.4.2 Independent directors

' Guideline on the introducing independent directors to the board of directors of Chinese listed companies' was issued by the CSRC in August 2001 in order to improve the level of corporate governance of Chinese listed firms and offer better protection for minority investor. The guidelines are mandatory and require all listed firm in China to have at least two independent directors on their boards by 30 June 2002, and at least of one-third of independent directors by 30 June 2003. The independent directors on the board of directors can be viewed as a complement to the board of supervisors owing to the voting rights of independent directors on financial and managerial decisions in terms of M&A activities, related-party transactions, information disclosure and financial statements (Yang, Chi & Young, 2011).

Independent directors perform an essential monitoring function in listed firms, they are viewed as having greater incentives than inside directors and more likely to employ their professional expertise and experiences (Beasley, 1996) to be effective in monitoring of management in order for their reputation preserve (Fama & Jensen, 1983). Board independence is supposed to provide defense against the explorative behaviors by the controlling shareholders and directors (Hu, Tam & Tan, 2009). Different definition of 'independence have been adopted by codes of corporate governance around the world, a common view of independence is defined by Mallin (2007: p102) as having 'no relationships or circumstances which could affect the director's judgment.'

Empirical studies have demonstrated that independent directors are associated with greater monitoring and are an effective corporate governance mechanism and in developed countries (e.g. Beasley, 1996;Hermalin&Weisbach, 2003,

Peasnell, *et al.* 2005). However, existing studies provided mixed results on the effects of independent directors in China. Kato & Long (2006a) and Fan *et al.* (2007) reported that independent directors are positively correlated with CEO monitoring, in contrast, Qiu & Yao (2009) report limits on the effectiveness of independent directors and Liao *et al.* (2009a) report about 14 percent of independent directors are politically connected, which suggest that outside directors are not really independent. Liao *et al.* (2009b) further document that only in the case that board size in Chinese listed firms is effective only in the case that implement board independent by adding extra member instead of removing inside directors.

Relating the literature to the research question at hand, it is possible that independent directors is effective in tax management from the knowledge of their own industry experience and expertise, and is willing to divert resources to tax management as a means of ensuring good firm performance (Peasnell *et al.* 2005; Klein, 2006; Firth *et al.* 2007a,b; Minnick & Noga, 2010). Lanis & Richardson (2011) provide empirical evidence that a higher percentage of outsider independent directors on the board of directors are negatively correlated with the likelihood of tax aggressiveness, it further suggests that more independent boards with its improved corporate governance discourage tax aggressiveness. Sarkar *et al.* (2008) suggest that is not the board independence but rather quality of board that is important for opportunistic tax management; its results show that diligent boards are associated with lower earning manipulation, while CEO-duality and presence of controlling shareholders on the board increase the probability of opportunistic behaviors.

3.3.4.3 CEO duality

It indicates that CEO of a firm also serves as chairman of the board of directors. From an agency theory, for board of directors to be an effective monitoring function, the separation of the positions of CEO and chairman of board of directors is essential in terms of an effective internal corporate governance mechanism (Cohen *et al.* 2002). CEO duality does have its

advantages of giving CEO multiple perspectives on the firm and empowering CEO to act with determination however, Such dual CEO-chairman system allows for little transparency of the CEO's behaviors and often yields considerable power over the operation and governance of firms (Ryan & Wiggins, 2001), their power to control often lead to self-interested decision-making at the expense of the outside shareholders. CEO duality may often lead to corporate fraud and corruptions due to lack of internal control checks for these two most powerful positions in the corporate decision-making process (Lin & Liu, 2009)

Before privatization in China, SOEs didn't have board of directors and therefore CEOs were appointed and supervised by the state (Yang, Chi & Young, 2011), as a result, many CEOs of listed firms currently are strongly politically connected owing to the state in control of majority of listed firms directly or indirectly, which is evidenced by Fan *et al* (2007) that approximately 25 percent of CEOs were previously or are currently government officers. It is evidenced that whether the CEOs can also serve as the chairman of the board is an issue based on the Chinese Company Law or CSRC regulation (Yang, Chi & Young, 2011).

Based on agency literature (Jensen and Mackling, 1976), weak corporate governance structure can result in diverse agency costs, meanwhile with separation of ownership and control, manager have incentive to distract corporate resources for their own benefits at the expense of shareholders. Agency problems are more severe when managers have a strong influence over board member and it is more likely when with CEO duality and when the board is mostly composed of insiders (Li *et al.* 2007), which is particularly crucial in Chinese listed firms given the dominance of executive directors. For example, Bebchuk and Fried (2004) propose that CEO compensation is mainly driven by rents extraction through CEO power and by failure in corporate governance; it is argued that most highly compensated CEOs have the ability to set their own pay through captured boards and remuneration committees. Therefore, As implied by the studies such as Masulis *et al.* (2007), Sarkar *et*

al.(2008), Minnick & Noga (2010), firms with CEO duality will be more likely associated with lower firm value and returns, a feature of which will be have less tax expenses and as a result less tax management.

3.3.5 Ownership and Control

3.3.5.1 Ownership structure of listed companies in China

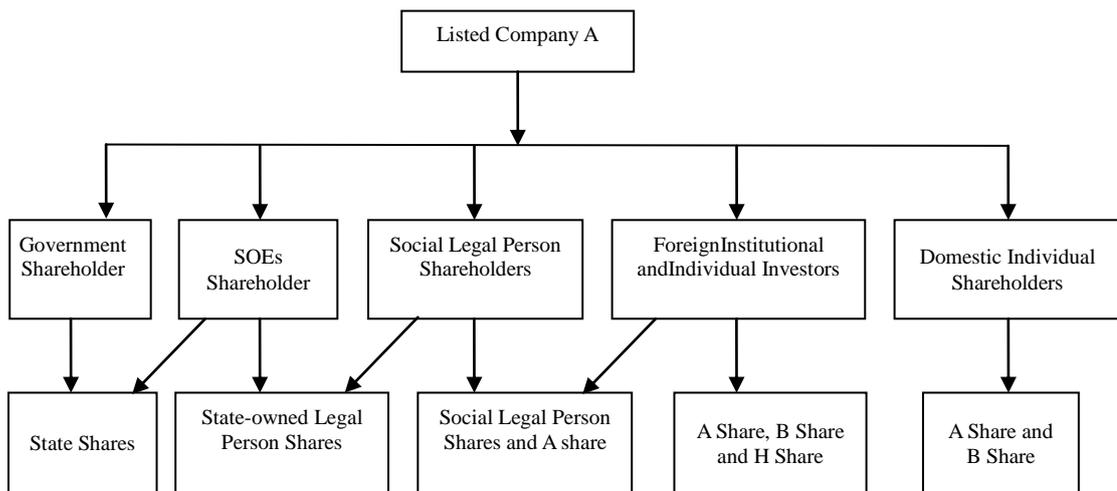
Of the four internal governance mechanisms, ownership structure is vital to the maximization of firm value. It can be argued that a concentrated ownership structure allows the largest shareholders to exert overpowering influences to take advantage of resources of firms for their personal interests at the expense of other shareholders. A study conducted by Claessens *et al.* (2000) further evidence that the presence of pyramidal and cross-holding ownership is common in Asian economies. This ownership structure facilitates tunneling much easier as it gives the controlling shareholders substantial discretionary power to acquire even more control for minimal capital expense.

Chinese listed firms operate under a very unique ownership structure which makes them different from Western developed economies. For most listed firms in China, there usually exist three categories of shareholders: the state, the legal persons (institutions) and individual investors (including employees, domestic and foreign individuals), and on average, each group holding about one-third share of companies, resulting in only around 35 percent of total shares being freely tradable (Wei & Geng, 2008). In contrast, management ownership is much lower in China, averaging only 0.03 percent (Xia & Zhu, 2009). For shares held by the former two groups of shareholders, they are non-tradable, and for shares held by individual investors, they are publicly tradable in the Shanghai and Shenzhen stock exchanges, including A share, B share, where tradable A share on the Shanghai and Shenzhen stock exchange refer to those are traded in Chinese currency RMB and are owned by Chinese domestic institutions or individual residents but are prohibited to be owned by foreign investors while the B share on the Shanghai and Shenzhen stock

exchanges are traded in foreign currencies, in Shenzhen B shares are usually traded in HK dollar whereas in Shanghai they are traded in U.S. dollar. Initially B-shares were available exclusively to some authorized domestic securities firms and foreign investors. Since 2001, domestic individuals were allowed to invest in B-shares. As foreign investors who buy B shares are not directly involved in the preparation of the company or the company operation and management, they become shareholders only through the subscription to these issued tradable shares. Meanwhile, foreign shareholders can change frequently the proportion of foreign shares due to free transferring of shares and high liquidity of the stock, as a result, B share companies are regarded as foreign-invested companies, they were not subject to the 'Law of the People's Republic of China on Income Tax of Enterprises with Foreign Investment and Foreign Enterprises', instead being subject to the 'Provisional Regulations on Enterprise Income Tax' with a tax rate of 33 percent prior to the implementation of the new company income tax law in 2008. In practice, these companies are still eligible for some preferential tax treatment, for example their real tax rate was 15 percent, due to tax exemptions, or the so-called preferential policy of financial returns, from the income tax granted by local governments.

A dominant feature of share ownership in China is the non-tradable state shareholding, either through direct investment or indirectly through holdings of domestic institutions (subsequently named legal persons) many of which in turn are partially or wholly owned by the central government or local authorities. This feature is the product of an ongoing process of partial privatization and corporatization of former SOEs which was initiated with the start of the economic reform process in 1978 but has gathered pace in recent years (Gunasekarage *et al.* 2007). This distinctive ownership structure, together with the influential state ownership which is non-tradable, provides a particular environment to test the relationship between ownership structure and tax aggressiveness. The figure 3.5 below shows the ownership structure of a typical listed company in China.

Figure 3. 5: Typical Chinese-listed company ownership structure



Source: Wei & Geng (2008)

3.3.5.2 State and Institutional Ownership

There is a wide range of previous research studying the association between ownership structure and firm performance. Currently, much research focuses on the behaviors of controlling shareholders. The nature of corporate governance problems varies significantly among publicly listed firms with and without a controlling shareholder (La Porta *et al.* 1998; Bebchuk *et al.* 2009). La Porta *et al.* (1998) point out that ownership is heavily concentrated in developing economies and Holderness (2003) reports that insiders control approximately 20 percent of the ownership of listed firms in the U.S. context. Claessens *et al.* (2000) reports that more than two-thirds of firms are controlled by a dominating shareholder in East Asian countries and family-controlled firms are very common; meanwhile, it is evidenced by Faccio *et al.* (2001) that ownership controlled by family in East Asia results in severe conflicts with other stakeholders and poor firm performance. However, Denis & McConnell (2003) argues that concentrated ownership is often positively related to firm value and that it can monitor and control to minimize agency costs. Anderson and Reeb (2003) further conclude that family owned firms perform better than non-family owned firms in the case of well regulated and transparent markets.

Two major problems have arisen with Chinese unique ownership structure. The first issue is associated with the one-dominant controlling shareholder phenomenon. The stock market in China has been criticized for market manipulation by controlling shareholders and highly speculation by extensive insider dealings, and the consequent agency conflicts have been evidences by the cases of corporate scandals. In China where interests of minority shareholders are exploited by controlling shareholders by the way of misrepresentation of financial statements as well as related party transactions (Hu, Tam & Tan, 2009; Lo *et al.* 2010). Empirical studies have frequently discovered the exploration of interests of minority shareholders by controlling shareholders in China as well as East Asian countries (Claessens *et al.* 2002; Tam & Tan, 2007). The second issue is related to the consequences of inefficient state ownership, a high degree of state shareholding is often found in transformed SOEs in China, exiting literature have shown that state shareholding does not produce superior firm values but is often associated with to efficiency (Bai *et al.* 2004; Yiu *et al.* 2005; Ding *et al.* 2007), which can be attributed to social and economic objectives of state shareholders in addition to firms' goal of profit maximization, weakening the monitoring role of the board. However, the relationship between state shareholding and firm value is not such simple and non-linear relationship is present, it is argued that firm's value increases when the state shareholding reaches a certain threshold (Liu & Lu, 2007; Tian & Estrin, 2007; Lin, Ma & Su, 2009; Qiu & Yao, 2009), although Chen, Firth & Xu (2009) find the present of an alignment effect: the larger the shareholding of the largest shareholders, the better the firm's performance.

In China, as discussed above, the state and legal persons are likely to be the major shareholders, and the majority of publicly listed firms are state-controlled. Most of China's state-owned enterprises on the stock market are not very efficient, either during the IPO stage or the after-market stage (Chen, 2004) and the presence of domestic shareholders can improve firm performance. Prior studies have examined the relationship between state ownership and firm performance as measured by Tobin's Q in China, and

suggest the level of direct state shareholding has a negative effect on firm performance while the legal-person shareholding has a positive effect on firm performance (Xu and Wang, 1999; Hovey *et al.* 2003), which points to the need for a retreat of state ownership in public firms. It is worth noting that legal person shareholders tend to have strong state-related roots, are mostly often state-owned but with a mass of private investors. When the state controls the company, it is not surprising that state-controlling owners and authorities sit on most board seats, and is unlikely to find a director representing minority shareholders. It can be argued that guan-xi (personal relationships) still plays an important role in business practices in China, therefore the possible explanation of this phenomenon is that local authorities and government can use their guan-xi to influence both the market and firms can benefit from the services provided by them in creating economic rents and enforcing transactions (Claessens & Fan, 2002).

It is also of importance to distinguish types of state-controlled firms due to the complex ownership structure. Different state-owned entities and government agencies hold the state-controlled shareholding and are faced with different objectives. Following the study of Cao *et al.* (2011), two categories of state-controlled firms can be classified on the basis of their ultimate controlling shareholders: state assets management bureaus (SAMBs), and SOEs. SAMB is a government agency responsible for controlling and managing and state owned assets but with no cash flow rights from the shares they hold, therefore, dividends as well as other payouts by firms are remitted directly to the local governments or Ministry of Finance (Firth *et al.* 2006). As a result, objectives of less emphasis on profit maximization as well as share price maximization make it low incentive to monitor the listed firms. Meanwhile, executive compensation scheme is not purely performance-based as CEOs work as the representative of the government in SAMB-controlled firms. In contrast, the publicized objective for SOEs-controlled firms is to maximize the firm's value and incentivize management and receive dividends from their investment. SOEs may be subject to the tunneling incentive, (e.g. Claessen *et al.* 2000; Bai *et al.* 2004; Liu & Lu, 2007; Lo *et al.* 2010), that is,

controlling shareholders' incentive to tunnel firm value by expropriation of minority shareholders, as many of listed firms in China are spin-offs of carve-outs from large SOEs and the parent SOEs demand significant returns to finance their unprofitable units (Liu & Lu, 2007).

3.3.5.3 Ownership concentration and tax aggressiveness

The degree of ownership concentration is the first institutional factor we will consider. Ownership concentration has the prominent influences on reduction in information asymmetry and improvement in corporate governance effectiveness (Shlerfer & Vishny, 1997). However, it is also argued by Shlerfer & Vishny (1997) that concentrated ownership structure may lead to expropriations of other stakeholders by the largest shareholder, and Berglöf & Claessens (2006) argue that ownership concentration might exert a substantial discretionary power especially in countries with weaker legal enforcement and regulatory environment. The majority of listed firms in China have a one-dominant shareholder and the more share they own the greater their influence on corporation decisions.

Prior research summarizes that higher ownership concentration is associated with higher leverage and large private benefits of control, lower cash holdings and lower dividends (e.g. Dyck and Zingales 2004; Khan, 2006). On the one hand, it is argued that firms in countries with higher ownership concentration may be more tax aggressive because large shareholders can effectively monitor and incentivize managers to generate more tax savings, such as in the case of Khurana and Moser (2013) studying U.S. firms with higher institutional ownership which also have higher ownership concentration tend to be generally more tax aggressive. On the other hand, in contrast, firms in countries with higher ownership concentration may be less tax aggressiveness, may due to the costs involved such as implementation costs and agency costs, as mentioned above, in the U.S. context, Chen *et al.* (2010) reports that

family-owned firms with higher ownership concentration are less tax aggressive than non-family-owned firms.

3.3.5.4 Institutional ownership and tax aggressiveness

Academics, practitioners and regulators have witnessed a dramatic increase over the past 20 years in the difference between financial accounting income reported to the investors and taxable income reported to the government. Meanwhile, academics have further noted that the increased differences are due to firms' aggressive tax planning, which has led to a call for examining various aspects of tax aggressiveness including the role of ownership structure in the willingness of firms to avoid taxes (Shackelford & Shevlin 2001). However, Shackelford and Shevlin (2001) point out that little is known about the cross-sectional variations in the willingness of firms to undertake aggressive tax practices to minimize taxes; they further point out that ownership structure is one of organizational features that are probably important but an understudied factor that influences aggressive tax planning undertaken by firms.

In the US context, Badertscher *et al.* (2013) find that firms with substantial private equity ownership (In his study, private equity firms are generally organized as limited partnerships that manage investment funds that generally buy mature businesses via leveraged buyout or management buyout transactions and take them private, usually these portfolio firms which are taken private are referred as 'PE-backed' firms engage in significantly greater tax aggressive behavior than non-private equity firms. Chen *et al.*(2010) find that family-controlled firms, which have higher ownership concentrations, are less tax aggressive than other firms. In the study of Moore (2012) that investigates the impact of institutional ownership on the level and time-series variability in book-tax differences, he provides evidence that institutional ownership is negatively associated with varied types of book-tax differences and is consistent with the role of higher levels of institutional ownership that plays in the effective monitoring of management. In contrast, Khurana and

Moser (2013) find that U.S. firms with higher levels of short-term institutional ownership, which also have higher ownership concentrations, are generally more tax aggressive. However, firms with higher institutional investors with longer-term investment horizons are less tax aggressive.

Shleifer and Vishney (1986) propose that institutional investors by virtue of their large shareholdings and voting power play an essential role in disciplining, influencing and monitoring managers which can force managers to concentrate on economic performance and evade opportunities for self-serving behaviors, furthermore, to ensure that firms make corporate decisions that will maximize shareholder wealth (Bushee, 2001; David *et al.* 2001).

Prior research provides mixed empirical evidences on the effect of institutional ownership on firm behaviors. Several studies such as McConell and Servaes (1990) document a positive relationship between firm performance and the percentage share ownership of institutional investors, whereas studies by Agrawal and Knoeber (1996) and Parrino *et al.* (2003) report no relation between corporate performance and institutional shareholdings applying accounting and stock return measures. In terms of the relation of the institutional ownership with the quality of financial reports, Chung *et al.* (2002) emphasizes earning management and managers in firms with greater institutional ownership are prevented from fully pursuing opportunistic earnings through discretionary accruals and Ajinkya *et al.* (2005) study voluntary disclosures and report that firms are more likely to issue more specific, accurate, and less optimistically biased forecasts when institutions own a large percentage of shares outstanding.

Empirical evidence on the effectiveness of institutions to monitor managers is also mixed. On the one hand, it is argued that institutional shareholders can effectively discipline and monitor managers to ensure maximization of long-term firm value by discouraging tax aggressiveness, mainly due to differences in risk preferences between shareholders with large stakes in the

firm and shareholders with more diversified portfolios (Chen *et al.* 2010). These agency conflicts lead to higher leverage which may substitute for tax aggressiveness (Givoly *et al.* 1992). This view is also supported by Del Guercio (1996) that several types of prudent shareholder standards may influence firms to be less tax aggressive to avoid future costs and Bushee (1998) that managers are deterred from reducing research and development expenditures in quarters in case of firms failing to meet short-term earning goals when institutions own a large percentage of shares outstanding. On the other hand, institutional shareholders may monitor managers more closely and influence firms to be more tax aggressive in an effort to maximize after-tax cash flows and after-tax earnings. For example, Laverty (1996) finds that institutional shareholders with a focus on short-term performance may influence managers to make decisions to boost short-term earnings. However, as pointed out by Chen *et al.* (2010) that tax aggressiveness may not increase firm value; it can result in tax savings but also expose a firm to potential penalties imposed by the IRS which entails implementation costs as well as agency costs.

Therefore, there are conflicting predictions on how institutional ownership can affect tax aggressiveness and it remains an open empirical question whether greater institutional ownership affects tax aggressiveness.

3.3.6 Incentive contracts and manager equity incentives

Another major issue of corporate governance is that of determining the levels of the compensation of senior management teams, and the means by which they are made. As this study will develop a simple theoretical framework that embeds the tax sheltering decisions within managerial agency context in China and emphasizes the significance of the factors determining the interaction between tax sheltering and incentive compensation and corporate governance arrangements, in this section, we briefly review these literatures, emphasizing recent studies that are most closely related to our study.

There are at least two views of executive compensation in the literature. The 'optimal contracting view' that considers executive compensation arrangements as the product of arm's length contracting between executives and boards; as a result the contracting provides efficient incentives for reducing agency problems (Bebchuk & Weisbach, 2010). As a result, a strong positive association between executive compensation and firm performance can be predicted from the perspective of optimal contracting approach as managers have less control in determining their compensation. An alternative 'managerial power view' raises the questions about whether the so-called compensation arrangements are the product of arm's length contracting and argue that such arrangements as part of the agency problem itself rather than as a solution to it (Bebchuk & Fried, 2003, 2004).

Incentive alignment between managers and shareholders rely heavily on the use of equity-based payment including stock and option-based holdings to align interests of managers, however, tax rules include both personal and corporate taxes have the potential to influence the nature of optimal contracting and hence the power of managerial incentives by changing the mix between the nature of incentives (stock vs. options), cash and incentives (cash vs. stock), and the timing of compensation (deferred benefit plans vs. current compensation) (Desai & Dharmapala, 2006) which raise the attention of board of directors. For example, personal and corporate taxes can affect the choice among non-qualified and incentive stock option and the decision to defer cash payment compensation (Hanlon, & Heitzman, 2010). Personal taxes can affect insiders' decision to divest equity shareholding at all or through a sale or gift. Moreover, measuring portfolio incentives on a pre-tax basis would differ that of after-tax basis since different tax rates are applied to stock and option gains. Prior research provides evidence that equity-based compensation is associated with managerial risk-taking, in particular in terms of financing and investing decisions (Rajgopal & Shevlin, 2002; Coles *et al.* 2006).

Despite the high returns for shareholders are associated with risky tax planning or corporate tax aggressiveness, there can be significant costs

involved which increase the risk of engaging in such transactions. For example, Wilson (2009) find that interest charges paid by firms to tax authorities account for 40 percent of tax savings in 14 cases of tax sheltering transactions and there may be reputational penalties for firms if their participation in a tax shelter becomes public.

Therefore, in the absence of equity-based incentives, there will be significant difference in risk preference, for example, risk-neutral shareholders are in preference of positive NPV tax strategies to being undertaken by managers, while risk-averse managers are more likely to engage in less risky tax planning (Rego & Wilson, 2012). If firms use incentive contracts to align incentives of managers with those of shareholders, it can be predicted that greater equity-based incentives will induce manager to undertake risky but positive NPV projects and to be more aggressive to increase firm value via tax sheltering activities. Few prior studies examine the relationship between corporate tax aggressiveness and executive compensation practices, these studies investigates the determinants of the level of total compensation and whether equity-based incentives influence managers' investment and financing decisions.

The growth of equity-based incentive compensation is among the most notable developments in recent years and a mass of literature has investigated on its determinants and effects. Mehran (1995) studies the advantages of incentive compensation and reports that firms with a higher presence of outside independent directors on the board are more likely to apply incentive compensation which in turn improves firm performance. In contrast, researchers are concerned about the potentially negative effects of the application of greater incentive compensation (Bebchuk & Fried, 2003), Erickson *et al.* (2003) report that the possibility of firm's accounting fraud increase significantly with the use of equity-based incentive compensation by study the sample of firms that were accused for accounting fraud by the SEC during 1996-2004 .

Shackelford *et al.* (2007) develop a simple model of how taxes influence the firms' accounting decisions; they identify at least two reasons of the importance of accounting information to managers. firstly, incentive compensation contracts rely on firms' accounting information including after-tax net income; secondly, if it is difficult to distinguish between low earnings arising from tax planning that leads to increase in cash from at the expense of earning as compared to from pure poor profitability, then managers are not willing to minimize actual taxes paid, which indicate that managers may not engage in tax aggressiveness that would reduce their expected compensation. Crocker and Slemrod (2005) more directly study the impact of taxes on designing incentive compensation contracts to align managers' interest with those of shareholders, in order to so, They state that "it may be appropriate for the tax officer's salary to depend (inversely) on the effective tax rate achieved" (p. 1595), which means that compensation schemes can be designed by directly or indirectly incorporating tax costs into them.

In recent empirical studies that directly investigate the link between various measures of tax management such as tax aggressiveness and non-compliance and compensation at different level of management positions (such as CEOs) in the firm, Phillips (2003) finds greater effectiveness of tax planning and lower effective tax rates is associated directly with that compensating division managers directly (but not CEOs) on an after-tax basis. Hanlon *et al.* (2005) see that the level of equity incentives from exercisable stock option is positively related to proposed IRS deficiencies, and Erickson *et al.* (2006) find equity-based incentives are positively related to non-compliance.

Slemrod (2004) develops a model that shareholders choose the level of tax aggressiveness by linking compensation of tax managers with stock price or effective tax rates and further suggest that corporate tax noncompliance could be the product of incentive compensation plans. However, the problem with type of incentive compensation is that inappropriate aggressive actions by tax managers entail a "hidden action" (Crocker and Slemrod, 2004) that shareholders cannot either observe whether managers are engaging in illegal

tax evasion or legal tax planning or to adjust the compensation scheme until the firm is penalized.

In addition, in the most recently work, Rego and Wilson (2012) study relationship between compensation of CEOs and CFOs and tax reporting aggressiveness as well as its relationship to firm performance, they find a positive association between incentive compensation and aggressive tax reporting but they find no evidence that tax aggressive is the result of weak governance or results in deteriorating future firm performance. In a follow-up study, Rego and Wilson (2012) find a positive association between the level of CEO and CFO equity-risk incentives and corporate tax aggressiveness, after control for firm performance and board of directors' characteristics. Armstrong *et al.* (2012) directly investigate the interaction between the incentives of tax directors and their measures of tax sheltering, and find that incentives of tax directors are significantly negatively associated with financial effective tax rate which implies that such incentives might induce them to produce a favorable influence on the financial statements.

In contrast, Desai and Dharmapala (2006) develop a model linking tax aggressiveness and equity-based compensation and document an ambiguous effect of managers' compensation on tax planning activities. On the one hand, higher-powered compensation schemes directly induce managers to engage in tax planning activities in order to increase after-tax firm value; On the other hand, high-powered incentives prevent manager's opportunism that may be complementary with tax sheltering, which reduce tax avoidance activities. Generally, they find that increased incentives result in less tax sheltering and suggest that the role of quality of corporate governance that play in this relationship. As equity-based incentives align managerial interests with those of shareholders, it is expected that managers are provided with such incentive to reduce rent diversion that can accompany aggressive tax sheltering. Moreover, their model are tested across well-governed and weak-governed firms and argue the presence of complementarities between rent extraction and tax sheltering which imply that better governed firms will be associated with

more tax sheltering behaviors. Although equity incentives can motivate managers to increase tax sheltering, they conclude that interest alignment of managers with those of shareholders by incentive compensation reduces opportunistic tax sheltering. As a result, the relationship between tax sheltering and equity-based compensation is theoretically ambiguous.

In a similar vein, Desai and Dharmapala (2009) examine the effects of the measures of tax sheltering on firm valuation. They predict that governance arrangements of firms should be an important factor in determining managers' efforts to avoid corporate taxes, in consistent with their prediction, they find that better-governed firms is associated with greater impact of tax sheltering on firms value, and suggest that the simple view of corporate tax sheltering as a transfer of resources from the state to shareholders is incomplete given the inherent agency problems. The result is robust to a wide range of control variables and different extensions to the model.

While the research's predictions for the effect of higher-powered incentives on tax sheltering are ambiguous, the effect of managerial incentives on tax sheltering is an empirical question.

3.3.6.1 Executive compensation in China

Compensation policies chosen by board of directors can play an important role in aligning the interests of managers and shareholders. In general, publicly listed firms are managed by executives rather than directors or shareholders, the decisions made by executives are influenced by monitoring of shareholders as well as by the incentives provided by the way of executive compensation arrangements, including salary, bonuses, perquisites and stock-based incentives. Tirole (2006) suggests the increasing sensitivity of compensation to performance since the early 1980s and that stock options are becoming the most prevalent component of CEO compensation in the U.S, which is also supported by the evidence from other developed economies (e.g. Bryan *et al.* 2002).

In Chinese listed firms, compensation plans for directors are determined by the board and approved at shareholder meetings, while the compensation scheme for CEOs are currently designed by the board of directors (Yang, Chi & Young, 2011). Before the economic reforms began in the 1978, managers of SOEs were representatives of government with their appointment were completely controlled by communist party bureaucrats and administrative, and compensation was determined by manager's ranking within the civil service; there was no incentive scheme to motive managers of SOEs nor were managers allowed to the profit-sharing scheme generated by the enterprises, all profits made by the enterprises were repatriated to the state (Firth *et al.* 2006). As a result, there was fairly small pay differential between CEOs and workers (see Qian, 1995; Zheng, 1998).

More incentive reward systems were introduced to SOEs since the early 1990s and the most popular system was CEO's compensation that consists of a cash salary and a performance bonus (Firth *et al.* 2006), although the bonus system was not sufficiently flexible in practice due to the fact that method of bonus payment was not clearly defined and the formula for determining payment was not disclosed. Article 52, Section 6, Chapter 3 of 'The code of corporate governance for listed companies in China', which was issued by the CSRC on 7 January 2002, requires listed firms to establish remuneration committee (CSRC, 2002a). Chinese listed firms have been encouraged to adopt a more practical performance-based approach (CSRC, 2002a, Articles 69–72, Section 1, and Chapter 5 of the code).

However, it is worth noting that executive stock option schemes which are in the design of long term incentive systems that align the interests of managers and investors introduced in Chinese firms are relatively few (Li *et al.* 2008), and the lack of stock options as a reward mechanism is exacerbated by the very low shareholding by top executives CEOs (Firth *et al.* 2007).

With the establishment State-Owned Assets Supervision and Administration Commission of the State Council (SASAC) in 2003, many regulations have been released to evaluate CEO performance and tie this to CEO compensation.

In particular, 'Interim regulations on the evaluation of the top executive operating performance' in SOEs affiliated to the central government (SOECGs) was promulgated by SASAC in 2003, which stipulated that the design of top executive pay should be on the basis of total sales and profits and described how to evaluate executive performance. SASAC update this regulation in 2006 and 2010 by adding some extra rules such as the punishment of top executives when they were underperforming. SASAC announced two 'supplementary provisions' of this regulation in 2007 and 2008 which made further efforts on alignment of executive pay to firm performance in SOEs. Obviously, the aims of these regulations and reforms of executive compensation in SOE controlled firms are at aligning the interests of managers with those of shareholders, in practice, it has been enacted by SASAC that profitability should be the primary measure of firm performance as to which CEO pay should be linked. Meanwhile, 'Instructions on regulating top executive 'on-job' consumptions in SOECGs' was issued by SASAC in 2006 in order to prevent CEOs from expropriation of shareholder wealth through excessive perquisites.

CEO compensation with its positive effects on firm performance in developed countries has been recognized as an effective corporate governance mechanism, although a body of studies regarding performance-based approaches have provided mixed empirical results and inconclusive evidence on the effect of incentive-based compensation on firm performance in China (e.g. Mengistae & Xu, 2004; Liu & Otsuka, 2004; Firth *et al.* 2006, 2007a,b; Kato & Long, 2006b; Rui *et al.* 2006). Kato and Long (2006b) find top executives' compensation is significantly associated with shareholders' value as well as sales growth rate in China. Rui *et al.* (2006) document that CEO compensation is significantly correlated with return on assets rather than stock returns, although this relationship mainly holds in firms with foreign shareholding and in firms with dominant state shareholding. In addition, CEOs are more compensated in firms with foreign shareholding than firms with highly concentrated ownership and high government shareholding, which may illustrate a tendency for foreign shareholders to be more pro-active in

soliciting the best available managers in the market so that the remuneration is higher. However, Mengistae and Xu (2004) find little evidence of a relationship between performance and compensation and Liu and Otsuka (2004) also argue that the new incentive system has not brought the expected improvements in productivity, while Firth *et al.* (2006) argue that CEO compensation policy can be more applied as a device to achieve the objective of dominant shareholders under concentrated ownership structure, but find that on average the sensitivity of pay to performance is low, which raises questions about the effectiveness of incentive systems in China. Firth *et al.* (2007a) find that different objectives on the application of CEOs incentive compensation for the different types of controlling shareholders, and suggest that a lower CEO compensation is associated with firms with substantial government ownership than private-owned enterprises or firm with higher private ownership and the magnitude of the incentives is too small to be effective. However, as Tian & Estrin (2007) indicate that, most of available perquisites such as dining, transportation housing provision and entertainment for a senior manager's family are not reported as part of the annual income.

3.3.6.2 Executive compensation and tax aggressiveness

The corporate governance view of taxation yield the distinct prediction that the characteristics of a tax system will affect managerial action and hence the extent of the agency problem, in addition, managers may capture benefits of tax sheltering as tax shelters may not indicate a simple transfer of resources from the state to shareholders (Desai & Dharmapala, 2008).

Consistent with the agency cost view of tax aggressiveness, the simple intuition is that shareholders prefer managers to avoid taxes and engage in tax sheltering and managers once their incentive are sufficiently aligned with those of managers, which has resulted in increasing incentive compensation and increased levels of tax sheltering over past years (Desai & Dharmapala, 2009). For example, several studies argue that tax sheltering serves as a substitute for interest deductions in choosing capital structure or as proxies for

similar tax reduction techniques (Graham & Tucker, 2006), it would be only true if corporate tax minimization activities were costless.

However, Several studies have indicated that market reaction of tax sheltering appear not to be in line with this view, For example, Desai and Hines (2002) study determinants of corporate inversions or expatriations by making the U.S. parent company becomes a subsidiary and the foreign subsidiary become the parent company, although inversions are presumably motivated by tax saving, market reactions are not typically positive. Similarly, Hanlon & Slemrod (2009) investigate stock price reactions to news reports about firms' tax sheltering activities, and find little evidence but a small negative reaction to news about tax sheltering, but it is more positive for firms with better governance which is in line with the theoretical framework developed in Desai & Dharmapala (2006). This view appear not to be validated in the data, and does not incorporate all the dimensions of major conflicts between shareholders and managers, as managers may behave opportunistically in other ways that not in the interests of shareholders. This is due to the fact that actions engage in the corporate tax sheltering can be mixed up with the underlying diversionary activities (Desai & Dharmapala, 2009), such as the complementarity between amount of tax savings from sheltering and resources diversion by managers as portrayed in the Desai, Dyck, & Zingales (2007) model., they further indicate that this complementarity may be particularly salient in emerging markets where the possibilities of managerial diversion are more dynamic.

It is expected that firm compensate managers for some level of tax aggressiveness but not for those tax aggressiveness that cause firms to incur additional costs that reduces shareholder wealth. Despite considerable prior research, there is no consensus on whether executive compensation aligns interests of managers with those of shareholders or whether they instead influence managers to manipulate accounting information for personal interests. For example, Bergstresser & Phillipon (2006) and Efendi *et al.* (2007) report that managers are provided equity-based incentives to manipulate

accounting earnings whereas Erickson *et al.* (2006) and Armstrong *et al.* (2012) find no evidence for an interaction between accounting irregularities and equity incentives.

3.3.7 Audit Committee

In many countries, listed firms are required to have audit committees and there are rules on the membership of such committees. The audit committee strengthens a firm's corporate governance by overseeing the accounting and auditing processes. From an agency perspective, an effective audit committee fulfills its oversight role when it is independent of management, has a level of financial and industrial experience to carry out its duties and actively monitor internal controls and financial reporting (Carcello *et al.* 2006). The monitoring role of the audit committee is of significance in China due to its weak legal protection where minority shareholders are subject to the expropriation by dominant shareholders such as the State.

Audit committees were introduced to Chinese listed firms by 'The code of corporate governance for listed companies in China' in 2002, Article 52, Section 6, Chapter 3 requires the convener of these committees must be an independent director and the majority of members of nomination, remuneration and auditing committee must be independent directors. However, an audit committee is required by the Code to be on a 'comply or explain' basis. Chen and Cheng (2007) report that many listed firms have utilized this voluntary compliance and only a few listed firms set up an audit committee within the first year after the issuance of the Code and Lo *et al.* (2010) further suggest that until now, there was no legal requirement for a Chinese listed company to have an audit committee although they were encouraged to do so. The debate about the effectiveness of audit committees in China is mainly to the degree of independence of the committee. With a sample study of top 50 Chinese firms listed in Hong Kong from 2006 to 2007, Lin *et al.* (2009b) found that on average 27.7 percent of audit committee members were government officer and 67.4 percent of the 50 listed firms had at least one government officer. These governance offices are more likely to be politically

connected with the state, although they are classified as 'independent' members of the board (Lin *et al.* 2009a).

Empirical finding in the literature, although mixed, generally suggest that Greater independence on the auditor committee is associated with more effective monitoring, which can mitigate earning management, indicating the role of more effective monitoring plays in controlling tax aggressiveness, at least with respect to financial reporting (e.g.Larcker & Richardson, 2004; Carcello *et al.* 2006; Klein, 2006).

Klein (2006) finds a non-linear association between tax management and audit committee independence, in particular, a significant association is found only when the audit committee has less than a majority of independent directors, it suggest that audit committee is structured to be independent of the CEO are best able to performance its independence oversight function and may be more effective in monitoring the financial accounting process of the firm. Moore (2007) documents a negative relationship between tax aggressiveness and audit committee independence, in line with the argument that stronger governance structure reduces tax aggressiveness. Moreover, Competence of audit committee members are also relevant, independent members of audit committee with both accounting and certain types of non-accounting financial expertise can play a role in mitigating tax aggressiveness and are effective in improving the quality of financial reporting (Bédard *et al.* 2004; Krishnan, 2005; Carcello *et al.* 2006). Prior research on the relationship between audit committee and tax aggressiveness in China is limited to publication in the Chinese language and has produced mixed results (Liu & Ma, 2008; Zheng & Liu, 2008). The scant and mixed result on the effectiveness of the audit committee in constraining tax aggressiveness in Chinese listed firms provides motivation for further study on the impact of audit committees.

3.3.8 Supervisory Boards

In China the two-tier board model is predominantly used, the main characteristic of this structure is the existence of a board of supervisors. Supervisory boards represent an additional control layer in the governance structure of Chinese firms, whose purpose is to monitor managers and directors in the best interest of the company and to keep the interest of all relevant stakeholders aware of when doing so. Listed firms are required to establish a board of supervisors and reports to the general shareholders meeting, since the enactment of Company Law in 1994. A key difference between the board of directors and the supervisory boards is that the member of the supervisory board are no senior executives so that they can play an monitoring role in the performance of the board of directors and the senior management in a relatively impartial manner (Lin & Liu, 2009).

The board of supervisors should be independent of the board of directors, officially, the key responsibilities of supervisors include: (1) to examine the company's financial affairs, (2) to monitor managerial behaviors and decisions made by managers, directors and other executives and to ensure the legal compliance of them with laws, regulations and the articles of firms, (3) to review and audit the reports provided by directors; and to oversee firms' assets; (4) to propose provisional shareholder meetings whenever they think necessary, (5) to request directors and managers to alter their personal actions if they are in conflict with the firm's objectives (Dahya *et al.* 2000, 2003; Tam & Hu, 2006; Lin & Liu, 2009; Yang, Chi & Young, 2011). In addition, in accordance with 'The code of corporate governance for listed companies in China' issued by the CSRC in 2002, the primary responsibility of the board of supervisors is the supervision of corporate finance and ensure the accuracy and appropriateness of financial statements; and member of the supervisory board should have professional experience or expertise in areas such as accounting and law. However, the board of supervisors has not been given the voting right on corporate or merger and acquisition strategies and the election of managers, directors or financial officers, which weaken its supervisory duties. In addition, most chairmen of supervisory boards in

government-controlled listed firms are communist party secretaries who usually are lack of professional expertise and appropriate experience (Yang, Chi & Young, 2011). Thus, a few studies have consistently reported the inefficiency of performance of the supervisory board (Dahya *et al.* 2000, 2003; Xiao *et al.* 2004; Chen, Firth & Xu, 2009). However, some researchers advocate that supervisory boards have a positive effect on corporate governance of a firm, Firth *et al.* (2007a) provide evidence on the vital role of themore and larger active supervisoryin controlling agency problem between managers and shareholders arise due to earning management, as it can leads to an increase in the quality of financial information.

The board of supervisors for listed firms should consist of at least three members, of which at least one member is representative of shareholders and at least one member is elected by employees. A typical Chinese supervisory board have three groups of supervisors, which are (1) executive supervisors (company employees),(2) controlling supervisors (full-time employees of the largest shareholder of the listed firm), and (3) outside supervisors (Hu, Tam & Tan, 2009). In the study of supervisory board, Xu & Wang (1999) found that the majority of Chinese supervisory boards are executive or controlling supervisors; almost none of them are individual shareholders. Therefore, it is suggested by Dahya *et al.* (2003) and Tam & Hu (2006) that supervisory boards are not likely to play an operative role in Chinese corporate governance due to its lack of independence from the its firm and controlling shareholders. In the Chinese context, Tam & Hu (2006) further suggest that despite the fact Chinese supervisory boards are overwhelmingly controlled by the insider supervisors, outside independent supervisors are more effective in their monitoring function than insider supervisors. Therefore, it can be argued that supervisory board can help achieve better governance in the case of high ownership concentration and weak external governance mechanisms in China, (Hu, Tam & Tan, 2009). However, whether or not supervisory board can perform its monitoring function effectively lies on its independence, and in terms of tax planning activities. In the absence of independent supervisory board at current stage of corporate governance development (Hu, Tam & Tan,

2009), we posit that outside supervisors may play a role in protecting interests of minority shareholders by discouraging tax aggressiveness.

3.3.9 External Governance Mechanisms

In this section, takeover market, product market, legal infrastructure will be discussed with the focus on the latter. An active market for corporate control is considered to be essential for the efficient allocation of resources among the external governance mechanisms which allows competent managers to obtain control of sufficient shares to remove inefficient managers in the short term (Bai *et al.*, 2004). As no studies in the specific issues directly focus on this area, recent papers investigate the relationship between various aspects of governance and the market for corporate control (e.g. Gomper *et al.* 2003; Gaspar *et al.* 2005; Ryan, 2009). There are few studies about the effect of takeover market as a corporate governance mechanism in China due to special feature of Chinese M&A caused by the share segmentation system and less developed external corporate control market in China, although the latter has been shown to an effective mechanism in western countries (Yang, Chi & Young, 2011). We can expect studies of a more positive impact of active corporate control market on corporate governance in China as a result of the non-tradable share split reform starting in 2005 as mentioned in section 3.2.

Competition in product market might be a powerful mechanism for resolving agency problems, the increased competition might reduce managerial slack and limit waste of resources, and moreover, it might restrict the tunneling activities of controlling shareholders (Bai *et al.* 2004). A range of studies focus on product market competition and its relationship with different aspects of corporate governance including CEO turnover and compensation structure (e.g. de Bettignies & Baggs, 2007). It is much more related to the extent of state's regulation environment is supportive of competition in markets for goods and services, and the overall level of product market regulation is still restrict in international comparison.

3.3.9.1 Legal Framework: Law and Regulation

Aspects of the legal and regulatory environment are integrally related to corporate governance, and a great of literature studies the link among corporate governance, law and finance (e.g. Coles & Hoi, 2004; Daouk *et al.* 2006). For the purpose of improvement in corporate governance, the Chinese governance must strengthen laws for interests' protection of shareholders and increase enforcement of such laws and regulations. Firms must also take actions to advance the situation at the same time. Bai *et al.* (2004) advocate that legal framework is an effective external mechanism to discipline managers and controlling shareholding's opportunistic behaviors and to ensure a fair return on investment for investors, however, they also argue that Chinese listed firms are regulated by a uniform legal system that this external mechanism plays no role in explaining cross-sectional variation in governance practices. It has been severely and widely criticized for the lack of an effective law enforcement and sound legal framework in China (e.g. Zou *et al.* 2008). In order to provide better protection for investors, the Company Law and the Security Law which was effective in 1994 and 1999 were revised in 2004 and the changes became effective in 2006. however, it is often argued the interests of shareholders especially minority shareholders cannot be well protect in absence of a truly independent legal system and in terms of state in performance of both role of market participant and regulator (e.g. Allen *et al.* 2005).

Lu *et al.* (2010) investigate the influence of state tax policy change on firms' tax aggressiveness along with corporate governance mechanisms of ownership structure and board composition. Under the setting of China's issuance of New Enterprises Income Tax Law in 2007 to change in corporate income tax rate from 33 percent to 25 percent with effect from 2008, Lu *et al.* (2010) find that firms that were more likely to benefit from the tax rate reduction are found to have more tax incentives to minimize their tax payments, while such activity is less prevalent in firms with a greater percentage of shares owned by state-owned enterprises which are primarily motivated by the tax revenue

generation incentive, and is also less marked among firms with an audit committee on the board.

Desai, Dyck and Zingales (2007) propose a situation in Russia in which the impact of the features of a taxation system on size of private benefits those self-interested managers are able to extract. The increase in the amount of income a manager would divert is associated with a high tax rate, while stronger tax enforcement provide additional monitoring and reduce it, and thus the incentive of outside shareholders are aligned with the tax authority to reduce resources diversion, but weak enforcement may increase managerial diversion from outside shareholders as well as tax authority. The study also points out external corporate governance affects firms' response to change in corporate tax rate, with an increase in corporate tax rate leads to more diversion, which as a result have smaller or even negative effects on corporate tax revenues in firms with more concentrated ownership structure and weaker corporate governance.

Jimenez-Angueira (2007) also study the level of tax aggressiveness are influenced by recent changes in tax environment given firms' ex ante governance strength, it suggests that in general firms with low level of efficient investor monitoring and/or low shareholder protection and/or weak board of directors reduced their tax aggressiveness in the period after the change in tax environment such as in the period of high regulation. This finding is in line with changes in tax regime which influences adjustments to the managers' opportunities for tax function that reduced the tax-related rent extraction. However, the results from tests on the relationship between book-tax differences and market prices of firms do not find the resulting increase in valuation of tax aggressiveness in the post-regulation period due to the influences of tax environment changes to take tax strategies that enhances shareholders' wealth is higher for ex ante weak-governance firms relative to other firms.

Hanlon, Maydew and Shevlin (2008) provide evidences that tax-induced changes in financial reporting behaviours (increasing the conformity between accounting earnings and taxable income) have adverse effects on the informativeness of financial accounting earning and cannot curtail aggressive tax planning as it planned, even absent actual changes to the financial accounting rules, which may arise from managers' intention to report earnings to minimize taxes rather than reporting earnings that convey reliable information of firm performance (Hanlon, Laplante & Shevlin, 2005). Atwood *et al.* (2010) examine the whether tax system characteristics impacts corporate tax aggressiveness across countries and find that firms are more tax aggressiveness with higher corporate tax rates, lower required book-tax conformity, and weaker tax enforcement and under territorial tax systems.

3.3.9.2 Auditor quality: Big 4 auditors and auditor opinion

Since the Enron bankruptcy in 2001 and the related collapse of Arthur Anderson in 2002, it has been of significance to and to question the quality of audits being conducted by accounting firms and to criticize auditing, especially by the large international Big 4 accounting firms. The separation of ownership and management control in listed firms makes the independent external auditing especially significant in terms of corporate governance and the supervision of such companies. Audit quality is positively related to earning quality, auditors are expected to be an important corporate governance mechanism that can detect and correct corporate fraud (Beck *et al.* 1998; Francis, 2004). In this section, the audit quality of a firm we discuss include auditor type, auditor opinion as well as auditor fee. We use Big 4 accounting firms to measure auditor type; a firm's decision to hire a Big 4 auditor is likely to be associated with internal controls. The 'Big 4' international auditors are argued to provide high-quality and more independent audits as they have established brand name reputations and therefore have incentives to protect their reputations (Francis, 2004); meanwhile, Big 4 auditors are expected to have better trained employees and technologies that facilitate them to better detect errors and irregularities, and are more likely to incur higher litigation

costs if there is an audit failure (Francis, 2004). In examining the audit reporting of Big 4 versus non-Big 4 auditors using ex-Anderson clients, Lai (2013) provide evidence that Big 4 auditors had a higher propensity to issue going concern modified opinion in order to restrict the level of discretionary accruals of their clients, which reflect the monitoring role of auditors in their client firms under agency theory. Yu *et al.* (2014) investigate the intra-industry spill-over effects of corporate scandals in China and find that the quality of auditors is more relevant and important for reducing the contagion effect of financial scandals. Prior studies that sought to link audit quality to earning management (e.g. Becker *et al.* 1998; Francis *et al.* 1999) and suggest that large audit firms are more effective in constraining managerial opportunistic behaviors in terms of accruals-based earning management and in restraining the ability of their client firms to manipulate earnings, therefore, are able to give greater credibility to the reported earnings of their client firms. For example, Becker *et al.* (1998) find lower abnormal accruals for Big 6 client firms than for non-Big 6 audit clients, while Francis *et al.*(1999) find significant differences in abnormal accruals across all three auditor group (Big 6, mid-tier firms and other audit firms) for the sample during 1988-1994. In essence, prior literature suggests that large auditors provide higher quality of audits relative to other counterparties.

Audit opinion can be applied in an effort to increase auditor independence, which further increase audit quality. Audit opinion reflects the informativeness of earnings and can be viewed as a proxy for financial disclosure in constraining managerial opportunistic behaviors, However, Tsipouridou and Spathis (2014) find no relationship between audit opinion and earnings management as measured by discretionary accruals, which implies that investors would not be altered by auditors with respect to the potential future problems experienced by firms with high discretionary accruals as the information in accruals are not incorporated into the opinions. Therefore, the efficacy of audit opinion as a governance mechanism to curb corporate fraudulent behaviors needs further study, especially in Chinese context, empirical evidence suggest that Chinese listed firms that with a greater degree

of earning manipulation are associated with a greater probability of regulatory enforcement actions against corporate fraud (Chen, et al, 2013)

A higher audit fee implies higher audit quality, either through more audit effort (more working hours) or through greater expertise of auditor, it is documented by prior studies that Big 4 audit always carry a premium relative to the audits of other firms around the world after controlling for other clients characteristics that affect audit fees (Francis, 2004), on average the premium of Big 4 audit has been around 20 percent. It can be argued that auditors would need to exert more efforts on firms with higher aggressive tax activities if they are proxied by larger book-tax differences or greater complexity, which in turn increase the level of audit fees when compared to the counterparties with smaller book-tax differences (Hanlon, 2005; Donohoe & Knechel, 2009; Hanlon, Krishnan, & Mills, 2012). Hanlon, Krishnan & Mills (2012) provide evidence that larger book-tax differences are associated with higher audit fees and it can be expected that audit fees to be higher in order to compensate for higher expected losses and higher audit efforts due to loss of reputation or the risk of legal actions (Krishnan & Visvanathan, 2008). Meanwhile, Donohoe & Knechel (2009) and McGuire, Omer & Wang (2012) also find a positive relationship between the level of a firm's aggressive tax activities and audit fees.

In sum, audit standards have evolved rapidly although the independent audits are quite new in China (Chen *et al.* 2006), the effectiveness of auditors as an external governance mechanism to alleviate corporate opportunistic behaviors among Chinese listed firms have been raised attention recently, China, with weak legal environment and weaker investor protection along with tight control of the media (Chen *et al.*, 2013), it provide a suitable setting to study the contribution of auditors to corporate fraudulent behaviors. Under Chinese institutional setting, auditors can serve as one of the few credible sources of external governance mechanisms which are capable of deterring managerial opportunistic behaviors; other external governance mechanisms such as media, investors and employees are expected to be less effective discouraging

managerial opportunism in China when compared to their counterparts in developed economies.

4.0 Review of Methodology

This section reviews and evaluates the measures of tax avoidance encapsulated in previous studies, and introduces and justifies the tax avoidance measure that will be adopted in this study. The methodology of the empirical section of the study will also be introduced and discussed.

4.1 Measure of corporate tax planning

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 avoidance/evasion 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.

Several measures of tax aggressiveness are available in the literature (see the table 4.1 'measure of tax avoidance), and in the following section we first evaluate different proxies for tax sheltering that are widely applied in prior literature, and consider the extent to which these measures are able to capture the magnitude of the underlying construct of 'tax aggressiveness'. Much prior research relies on total effective tax rates to measure corporate tax planning effectiveness such as Stickney and McGee (1982); Gupta and Newberry (1997); Mills, Erickson, and Maydew (1998). More recently, research has relied on alternative measures of tax aggressiveness, including total book-tax differences (Wilson 2009), cash ETRs (Dyreng, Hanlon, and Maydew 2008), and discretionary book-tax differences (Desai and Dharmapala 2006, 2009).

4.1.1 Effective tax rate measures (ETR)

Commonly used measures of tax avoidance in the existing literature are listed in Table 4.1, and several of them measure variations of effective tax rates (ETRs), which are computed as dividing some estimate of tax liability by a measure of pre-tax accounting profits or cash flow, indicating the average rate of tax burden levied on firms' income or cash flow. Different inferences are possible with various numerators. For example, the GAAP ETR is defined as total income tax expense divided by pre-tax accounting income (Stickney & McGee, 1982; Gupta & Newberry, 1997), which reflect permanent book-tax differences and other statutory adjustments, while tax strategy such as tax deferral (e.g. accelerated depreciation for tax purposes) will not affect GAAP (Hanlon & Heitzman, 2010). The cash effective tax rate (CASH_ETR), on the other hand, introduced by Dyreng et al. (2008) can be calculated as the ratio of cash income taxes paid to pre-tax book income after special items. It is claimed by Dyreng *et al.* (2008) this measure has several advantages over the traditional ETR measure. Firstly, cash ETR is not affected by change in tax cushion of a firm such as tax contingencies, therefore, no matter that a tax

cushion is recorded in a firm's financial statement, the lower cash tax payments associated with tax aggressiveness will have a lower cash ETR (Dyreng *et al.* 2008; Badertscher *et al.* 2013). Secondly, measure of Cash ETR provide a better estimation of a firm's true tax liability than traditional measure of ETR as it captures tax benefits associated with employee stock options (Dyreng *et al.* 2008). Despite these advantages, some measurement errors are associated with cash ETR as it does not capture non-discretionary items of BTDs and is biased downward for those firm that consistently manage pre-tax book income upward (Badertscher *et al.* 2013).

Table 4. 1: Measure of tax avoidance

Measures	Computation	Reflect conforming avoidance	Reflect non-conforming avoidance?	Reflect tax deferrals	Examples of tax avoidance activities
Abnormal current accruals	Residual from $CA_{it} = \beta \Delta SALES_{it} + \text{Controls} + \varepsilon_{it}$	Y	N	Y	Accelerated or deferral of revenue and expenditures.
	or $CA_{it} = \beta (\Delta SALES_{it} - \Delta AR_{it}) + \varepsilon_{it}$				
GAAP ETR	$\frac{\text{income tax expense}}{\text{pretax accounting income}}$	N	Y	N	Tax incentives; transfer pricing; super-deduction of R&D expenditures.
Cash ETR	$\frac{\text{income tax paid in cash}}{\text{pretax accounting income}}$	N	Y	Y	Tax incentives; transfer pricing; super-deduction of R&D expenditures; accelerated depreciation.
Current ETR	$\frac{\text{Current income tax expense}}{\text{Pre-tax accounting income}}$	N	Y	Y	Tax incentives; transfer pricing;
ETR differential	Statutory ETR- GAAP ETR	N	Y	N	Tax incentives; transfer pricing;
DTAX	Residual from regression ETR differential= $\alpha_{it} + \beta \text{controls}_{it} + \varepsilon_{it}$	N	Y	Y	Tax incentives; transfer pricing;
Total BTD	Total book-tax differences	N	Y	Y	Super-deduction of R&D expenditures; accelerated depreciation.
Abnormal total BTD	Residual from $BTD_{i,t} = \beta TA_{i,t} + \mu_i + \varepsilon_{i,t}$	N	Y	Y	Super-deduction of R&D expenditures; accelerated depreciation.
Abnormal permanent	Residual from	N	Y	N	Super-deduction of R&D

BTD	$PERMDIFF_{i,t} = \beta NDTAX_{i,t} + \varepsilon_{i,t}$				expenditures.
Imputed/reported profits gap	Gap between Imputed profits (from statistics data) and reported profits	Y	N	N	Income under-reported for accounting purpose.
Import/export gap	Gap between import and export statistics data	Y	N	N	False declaration with the Customs.

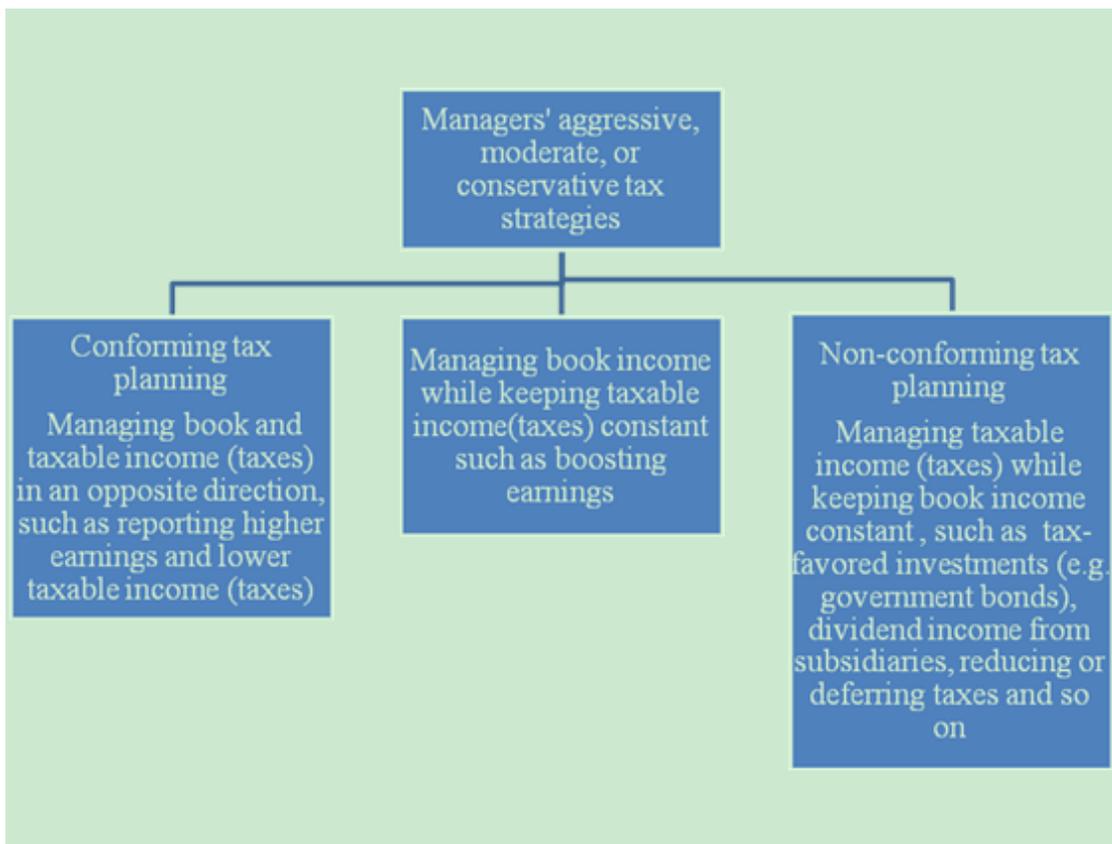
(Source: Hanlon & Heitzman, 2010)

Depending on research questions, researchers must be cautious when making inferences about tax planning activities in terms of ETR measures. Firstly, ETR measure is not available whenever the pre-tax accounting income is zero or negative and even if it is available, it is not a reliable measure for the relative tax burden in the presence of implicit taxes and net operating loss carry-forwards (Wilkie & Limberg, 1993). Furthermore, with pre-tax accounting income being applied as denominator in most ETR measure, only non-conforming tax planning activities can be captured (e.g. tax benefits of interest deductions will not be reflected in ETR measures) (Hanlon & Heitzman, 2010: see Table 4.2). Take private firms for example, a lower level of importance are placed on GAAP accounting incomes, they are more likely to avoid most of explicit taxes by reporting lower accounting income as well as lower taxable income (e.g. conforming tax planning activities). This weakness is also the one associated with book-tax differences measures.

Thirdly, all variants of ETR measure reflect the effect of firms' explicit tax liability, and do not directly capture implicit taxes which reduce pre-tax accounting earnings and are the differences between pre-tax returns on partially or tax-exempt investments and pre-tax returns on fully-taxed investments (Scholes & Wolfson, 1992; Wilkie, 1992). Implicit taxes arise directly related to the existence of tax preferences such as government bond interest, pre-paid income, non-deductible expenses, accelerate depreciation and tax credits for investments (Wilkie, 1988; Scholes & Wolfson, 1992) and can be also applied to reflect an indirect cost (broadly any non-tax costs incurred to reduce explicit taxes) that results from government policies. In general, lower explicit taxes (increases in tax subsidies) will give rise to higher implicit taxes (decreases in pre-tax return) and vice versa. For example, without consideration for implicit taxes, GAAP ETR will be higher to the extent the implicit taxes reduce pre-tax accounting income, such as lower return on tax-advantaged assets arising from tax subsidies in China (Chen & Hung, 2010). A common measure of corporate tax preference provided by government is to compare the resulting effective tax rate (ETR) above to the statutory tax rate. Wilkie (1992) and Wilkie and Limberg (1993) develop an

alternative measure to the ETR for the evaluation of relative tax burdens, in consideration of both corporate tax preferences and implicit taxes, called as the tax subsidy on equity (TSE) measure. TSE is calculated as difference between multiplication of statutory tax rate and pre-tax accounting income and the current tax expenses, scaled by stockholders' equity (Wilkie, 1992; Wilkie & Limberg, 1993) and is an improvement over ETR as it is easy to interpret even when current tax payment or pre-tax accounting profit is negative. In the case of firms engaging in tax planning activities through investments in tax-favored assets or other tax incentive related transactions (e.g. Berger, 1993), implicit tax measure are relevant for studying tax sheltering.

Table 4. 2: Tax strategies



Source: Moser, Khurana, & Raman (2011); Tang & Firth (2011)

4.1.2 Book-tax Differences

It is worth noting that our ability to draw inferences or make meaningful comparisons across prior research studies in the area of corporate tax burdens is hampered by the fact that wide variations exist in the definition of tax burden measures in general, and book-tax differences in particular, and in the ways in which they have been applied across different studies. For example, some papers lay emphasis on total pre-tax book-tax differences (Mills and Newberry, 2001), while others emphasize on temporary differences (Phillips, 2003; Hanlon, 2005), and yet others focus on “total” after-tax book-tax differences (Lev and Nissim, 2004), with the latter applying a 'tax-based fundamental' as the ratio of estimated net taxable income to net book income which captures all book-tax differences along with tax accruals. For classification, we need to identify the differences among the above definitions. Total book-tax differences, which arise from the differences between accounting income under accounting rules and taxable income computed under tax laws, are designed to measure the extent to which a firm is able to avoid paying tax on its accounting income. Book-tax differences consist of three components including permanent differences temporary differences and tax accruals. In the calculation of a 'total' difference between book income and taxable income, many items that are not actually book-tax differences are included such as tax credits that do not affect either measures of book income or those of taxable income, meanwhile, some items included that are after-tax accruals (e.g., tax contingency reserve) that do not affect pre-tax earnings at all (Hanlon & Heitzman, 2010). Temporary differences (identified by deferred tax expenses) are driven by the accounting accruals process and the main component of these, timing differences, capture expense or income items that are recognized (partially or wholly) in different time periods in the accounting and tax accounts, such as depreciation, bad debt provisions, warranty expense, etc. It is worth noting that not all temporary differences are timing differences, and in most cases temporary difference or timing difference approach would be similar as to the deferred tax outcome. These temporary differences can offer outsiders some insight into the discretionary accounting decisions made

by firms; however, it must be borne in mind that temporary differences are also partially driven by the tax policy environment: not all temporary differences are driven variations from economic income reporting of financial accounting income. Rather, favorable tax treatments given to, for example, encourage investment may also lead to temporary book-tax differences. As a result of this, even in the absence of an intention to ‘plan’ taxes on the part of the firm, so-called ‘mechanical’ temporary differences will still exist. Permanent differences arise from differences in income recognition as well as differences in the deduction rules for costs and expenses between GAAP and tax laws, in so far as these differences are permanent in nature, i.e. they arise as a result of items of income or expense/deduction that appear in one or other of the income statement and tax computation, but not both. These items affect the current portion of the tax expense reported in the financial statements, and hence also the total tax expense, and include items such as restructuring charges, goodwill write-downs and a portion of dividends received from other firms, which can be measured by removing temporary differences from total BTDs (Jackson, 2009). Example of permanent differences in China include exemption of government bond interest income, limited deductions of advertising and entertainment expenses, R&D expenses deduction and credits for investment in certain areas (See Appendix II).

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). Managers have different incentives in the reporting of book and taxable income due the different purposes and stakeholders served by the two incomes. Managers are

provided with incentives, according to conventional wisdom, to manage tax downwards whilst reporting higher financial reporting income due to compensation contracts, bond covenants and (in the case of banking organizations) regulatory capital requirements (Fields *et al.* 2001) and the presumed objective of maximization of returns to shareholders, whilst attempting to decrease risk of tax scrutiny and political costs (Fields *et al.* 2001) as well as satisfaction of tax-based contract motivations such as after-tax compensation schemes (Phillips, 2003). In contrast in terms of tax purposes, managers are provided with incentive to report lower taxable income. As a result, these two measures of income are the informative performance measures for uses of financial statements and tax authorities respectively. The majority of studies employ 'income-effect' BTDs; however, 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; Khurana & Moser, 2013; Atwood *et al.* 2010; Armstrong, Blouin & Larcker, 2012; Rego & Wilson, 2012). Outside observers cannot obtain the income reported to tax authority departments directly, and this measure must therefore be inferred indirectly from financial statements data (for studies using actual tax return data, see Mills & Newberry (2001) and Plesko (2003)).

On the other hand, the so-called 'tax-effect' BTDs will be discussed in the next section and the numerical example for comparison between these two measures can be seen in Tang & Firth (2011). Both Manzon & Plesko (2002), Desai (2003) and Boynton *et al.* (2005) provide evidences on the growth of the book-tax gap in the U.S. over time. The measure of the 'book-tax gap' have already been extensively addressed (Hanlon, 2005; Hanlon, Laplante, & Shevlin, 2005; Manzon & Plesko, 2002; Plesko, 2007). A wide range of existing literature suggests book-tax differences can be used as a signal of tax sheltering activity. As we can see evidences in McGill and Outslay (2004) and Badertscher *et al.* (2013), it is suggested that due to the discretion and flexibility available in financial accounting rules, the ultimate tax planning technique provides managers with opportunities to reduce taxable income

without affecting book earnings. Similarly, Mills (1998) and Desai (2003) illustrate that the growing book-tax differences appears to be in line with aggressive tax planning, as Miles (1998) finds that a positive relationship between large positive book-tax gaps and proposed IRS audit adjustments, and Desai (2003) stresses that the increased level of tax sheltering activities are the major drivers of the expanding book-tax differences during the 1990s. Wilson (2009) reports that a positive association between book-tax differences and the actual cases of tax sheltering. Moreover, Phillips et al (2003), Hanlon (2005), and Ayers et al (2006) argue that the difference between financial and tax reporting is also attributable to earnings management. Finally, the evidences in both Phillips et al (2003) and Frank *et al.* (2009) indicate that firms that with earnings management are also associated with tax aggressiveness.

However, despite the above evidences that large BTDs are associated with tax sheltering activities, this measure has inherent limitations. Firstly, the difficulty of identifying aggressive tax reporting arises in part from the ongoing uncertainties with respect to the causes of BTDs. On the one hand, previous studies have documented that aggressive financial reporting is the partially driver of large positive BTDs. It is suggested by Hanlon (2005) that firms with large positive temporary BTDs are associated with less persistent GAAP earnings and concludes that investors appear to view large BTDs as an indication of low quality earnings, while it is supported by Lev and Nissim (2004) who report that earnings growth to be predicted by ratio of tax-to-book income for up to five years ahead. However, on the other hand, some literature suggests that large positive BTDs are a signal of tax aggressiveness, which we have already discussed above, additional supports are provided by Heltzer (2006) who reports results are in line with view of BTDs in providing insight into the relative level of tax reporting aggressiveness of a firm, rather than that of relative level of financial reporting aggressiveness and Desai and Dharmapala (2008) who find a positive relation between BTDs and tax sheltering in the cases of 14 firms involved in tax sheltering activities. Secondly, the difficulty in examining BTDs as a sign of aggressive tax planning can arise due to the fact BTDs can also be caused by firm-specific

characteristics that are independent of aggressive tax or book reporting strategies (Wilson, 2009). For example, firms with significant BTDs can arise from large capital expenditure due to depreciation but these differences are not reflective of aggressive tax strategies. Firm-specific features such as the level of capital expenditures or the extent of a firm's foreign operations can lead to large BTDs that could be not necessarily reflective of corporate tax planning as evidenced by Manzon and Plesko (2002) and Hanlon (2003). Finally, the book-tax gaps do not necessarily reflect corporate tax avoidance activity, they can be attributable to earnings management, cash flow adjustments, tax avoidance, and other techniques in combination (e.g. Mills and Newberry 2001; Phillips *et al.* 2003; Hanlon 2005; Badertscher *et al.* 2009), for example, studies in Phillips *et al.* (2003) and Hanlon (2005) suggest temporary BTDs are related to activities of earnings management; Using the data from the English-version financial reports of Chinese B-shares listed firms and the Chinese capital market, Tang & Firth (2011) provides evidence that BTDs are incrementally informative for future earnings and stock return, and are a useful proxy for both earning management and tax management as it contains mechanical information about inconformity in book and tax reporting requirements. Moreover, in Wilson's (2009) study permanent BTDs arise from the majority of cases of tax sheltering activities. To the extent that earning management and independent firm-specific characteristic are the primary determinants of BTDs; the proxy will be invalid for tax planning activities. This fact should be taken into account in any study that attempts to isolate tax aggressiveness using a BTD measure. Therefore, any measure of tax sheltering must control for other factors (Garbarino, 2011).

Up to present, there are still many unanswered questions remained about the gap between book and taxable income and the prior literature has not reached a consensus on the causes of it. It is an important issue to recognize the difference in inferences in papers applying different measures of book-tax differences (Hanlon & Heitzman, 2010). Meanwhile, identifying the drivers of causes of book-tax differences is a potentially important area for future work which would shed light on why it is informative and why the finding varies

across those measures. Therefore, for example, in our study, the examination of the link between corporate governance practices and the book-tax gaps can provide new insights into whether managers are provided incentives in a manner that potentially induces a wider book-tax gap.

4.2 Critique of tax aggressive measure in China

Individual studies often use different terms to describe that tax reporting behaviors such as tax sheltering, tax aggressiveness, tax evasion, tax avoidance and tax non-compliance and so on, actually they can be used interchangeably, in attempt to minimize the confusion, we will, for the most part, discuss the literature using the term tax aggressiveness. It is broadly defined by Hanlon & Heitzman (2010:p81) that tax aggressiveness is the "reduction of explicit tax per dollar of pre-tax accounting earning or cash flow", which reflect all transactions that might have effects on the firm's explicit tax liability (Dyreg *et al.* 2008).

Although a variety of problems associated with inferring taxable income from the financial statements are identified by Hanlon (2003) and Hanlon,*et al.* (2005), Plesko (2003) examine how well financial statement data are correlated with actual tax return and provide some supports for it when examining correlation between financial statement data and the actual tax return. Due to the confidentiality of tax return data in China, most Chinese studies use public financial statements to estimate taxable income and obtain measure of factors that might be responsible for the causes of BTDs. Among the measures of BTDs based on financial statements, the BTDs with taxable income calculated as current income tax expenses from consolidated companies grossed up by the current applicable tax rate is the widely used in existing Chinese literature (Dai & Yao, 2006; Ye, 2006; Zeng, & Lv, 2010). Although Hanlon (2003) criticize several measurement errors in estimating taxable income from financial statement disclosures in terms of employee stock option, consolidation, tax position reserves, foreign operation, tax credits, as well as negative taxable income, It is evidenced by Plesko (2007) that this

measure of taxable income is significantly and highly and significantly associated with firms' actual taxable income, thus some assurance is provided as a reasonable proxy for a firm's actual taxable income.

However, it is difficult to identify the appropriate tax rate to be applied when grossing up income tax expenses in China, and most Chinese literature use the tax rates applicable from parent companies.

$$\text{Taxable income} = \text{Current income tax expense} / \text{applicable tax rate}$$

Hanlon (2003) and McGill & Outlay (2004) criticize the extent of a firm's BTDT to draw inferences about the degree of tax aggressiveness (non-conforming tax aggressiveness). It is recognized by Wilson (2009: p7) that there is a difficulty in examining BTDTs as a sign of tax aggressive behaviors due to the facts that BTDTs can be caused by firm-specific characteristics that are independent of aggressive tax or financial reporting strategies such as normal temporary BTDTs in terms of differences in the depreciation methods between accounting rules and tax laws, and normal permanent BTDTs in terms of interests on tax-exempt government bonds that are reported in book income but excluded from taxable income.

Variant of this BTDTs measure has been used in a variety of studies in examining the sources of differences in firms' effective tax rates (ETRs). ETRs are calculated by dividing some estimate of tax payment by a measure of cash flow or pre-tax profits or, which capture the average rate of tax per dollar of income or cash flow (Hanlon & Heitzman, 2010). Following the study of Zimmerman (1983), Porcano (1986), Shevlin & Porter (1992), and Gupta & Newberry (1997), firm's ETR as the ratio of current tax expenses to net income has been widely studied as the proxy for the measure of corporate income tax burden. Various forms of ETRs are developed in existing literature. The above 4 forms are widely used in Chinese existing studies (Wu *et al.* 2007; Zheng & Han, 2008; Zeng, 2010; Wu *et al.* 2012a), while the final form not

applicable due to fact that Chinese tax laws base the measure of income tax expenses on accrual-based profit rather than operating cash flows.

- $ETR = (\text{Current income tax expense} - \text{deferred tax expense}) / \text{pre-tax book income}$ (Porcano, 1986)
- $ETR = \text{Current income tax expense} / \text{pre-tax book income}$ (Porcano, 1986)
- $ETR = \text{Current income tax expense} / \text{Pre-tax book income} - (\text{deferred tax expense} / \text{statutory tax rate})$ (Stickney & McGee, 1982)
- $ETR = (\text{Current income tax expense} - \text{deferred tax expense}) / (\text{Pre-tax book income} - (\text{deferred tax expense} / \text{statutory tax rate}))$ (Shevlin, 1987)
- $ETR = (\text{Current income tax expense} - \text{deferred tax expense}) / \text{operating cash flow}$ (Zimmerman, 1983)

Hanlon (2003) and Dyreng *et al.* (2008) identified a number of limitations associated with ETRs as a proxy for tax aggressiveness, which have been discussed in previous section. Most ETR measure use the pre-tax earnings as denominator so it can only capture the non-conforming tax aggressiveness and cannot capture differences caused by the tax preference and specific tax incentives through lobbying activities (Hanlon & Hertzman, 2010) such as the tax benefits of interest deductibility. Under the institutional background in China, the central and local governments will normally apply the tax preference policy in order to attract investments, such as building up economic development zones to give special tax incentives to high-tech firms, resulting in effective tax rates are lower than statutory tax rate. Therefore, due to the presence of the numerous tax incentives in China, especially in coastal and economically developed areas, there will be measurement error in using ETRs to measure tax aggressiveness in the context of China.

4.3 Tax-effect BTDs in China

As discussed before, book-tax differences can be due to mechanical difference between tax rules and accounting standards; they can also be the result of a firm's tradeoff between the financial reporting incentive to increase book income and the tax incentive to lower taxable income.

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.

As indicated by Tang & Firth (2011), there are two ways to measure BTDs. Firstly, the 'income-effect' BTDs which we have discussed in detail before, the income-tax effect method can introduce measurement errors arising from tax loss carry forwards, tax rate differentials and business consolidation (Hanlon, 2003 for a detailed discussion). Secondly, the so-called 'tax-effect' BTDs, which employ prima facie income tax expense (such as the multiplication of statutory tax rate by the book income) minus current tax expense (or the sum of the multiplication of the statutory tax rate by the temporary and permanent BTDs). 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. For example, firms in China are normally taxed at 25 percent since 2008, but those operate in certain tax-favored zones or industries benefit from the lower statutory tax rates.

We follow the method of tax-effect BTDs suggested by Tang & Firth (2011) as she evidences that tax-effect BTDs are particularly appropriate in China due to the fact that 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. Meanwhile, Shevlin *et al.* (2012) claim that tax-effect BTDs enable researchers to evaluate those tax strategies in order for reduction in overall tax burden without influence on total taxable income and book income such as income shifting. In Contrast, the application of income-effect BTDs can capture only those tax strategies that affect book income or taxable income may have restriction on empirical tests, as evidenced by the test conducted by Tang and Firth (2011) to confirm whether tax-effect BTDs are superior to income-tax BTDs in capturing tax management and earning management. But what is difference from Tang and Firth (2011) is that we focus on total tax-effect permanent BTDs rather than total BTDs with the former are categorized by hypothesized drivers of permanent BTDs.

We are able to use tax-effect BTDs from 2006 to 2012 because they are disclosed in the notes to income tax expense part in the listed firms' financial statements. A reconciliation of pre-tax profit and tax expense allows us to avoid the measurement errors inherent in estimating BTDs which is relevant for income-effect BTDs.

4.4 Dataset and sample selection

4.4.1 Dataset and methodology

The major source of data collection for this study is Chinese firms' annual reports from different sectors of the economy; it starts with all A-shares and B-shares firms listed on either Shanghai or Shenzhen stock exchange (excluding the firms in the growth enterprise market and SME board). The advantage of using financial statements to examine the difference between financial and taxable income is that financial statements provide data that

make it possible to examine a broad range of potential explanations for differences between the two incomes (Manzon & Plesko, 2001). Financial statements with their additional notes provide greater detail on expense and revenue recognition methods and cash flows as well as about the past and cumulative effects of many accounting decisions. The availability of financial data is used as a basis for the selection as to which firms are included in the dataset, as there exists no publicly available tax return information at the firm level that can be used in this study. The data for the measure of tax aggressiveness is extracted from details about income tax expense from the 'additional notes to financial statements' in the firm's annual report, all these data have to be done manually; while for other variables, we adopt the database prepared by GTA (CSMAR), a Chinese-based research company for our analysis with the WIND database another Chinese-based research company as a supplement. This database consists of data on the trading of Chinese stock markets and data from published annual reports of the sample firms, and the database have been applied in many research, such as Sun & Tong (2003) and Kato & Long (2006a,b), and it is considered very reliable. Then we match this initial sample of selected firms with other data of variables available. Some variables are missing for some firms thus these firms are dropped when model is run. If the other variables included in the model substantially decrease our sample size, then we exclude them from equation to maximize the sample size (Rego & Wilson, 2012).

4.4.2 Analysis of primary data

The analysis of primary data has mainly been conducted using the Stata version 12 and Microsoft Excel version 2007. Microsoft Excel is used for the data sorting and basic calculations which describe the characteristics of the sample, while Stata is a complete, integrated data analysis and statistical software that has been widely applied in many business and academic institutions around the world. It is used firstly to examine the linearity, homogeneity of variance, outliers and missing values. Secondly, it is used to

analyze the difference in mean values and correlations between variables; it is also used to construct the regression models we need.

4.4.3 Sample selection

Panel A of Table 4.3 outlines the sample selection procedures. Our sample includes Chinese firms that were listed on the Shenzhen and Shanghai Stock Exchanges Markets during 2006-2012. As indicated, before 2005, tax payable is recognized as the income tax expenses in most Chinese listed firms due to the absence of accrual accounting for income tax expenses in China (called the “Tax Payable Accounting Method”). New accounting standards were enacted by the Chinese Accounting Standards Committee in 2006 that were implemented beginning in 2007. We use the data of 2006 as starting point that was restated in 2007. We obtain our main sample from tax notes on listed firms' annual reports manually; we retain firms for which we are able to compute the tax aggressiveness measure. To have complete data for the measurements of tax aggressiveness, we delete firm-year observations for missing data on the selected variables. Except in the year 2011 and 2012, the number of firm-year observations increased over the sample period, in line with the growing trend of stock markets in China. All the data for the institutional variables unrelated to the tax planning, control variables and corporate governance variables are matched with the resulting tax aggressive firm observations, which were obtained from CSMAR database, with WIND database as a supplement. Some data fields are rarely missing such as total assets, while others especially those from the income tax expense note, rarely contain the all the data we needed. It is expected that the data for the number of firms with non-missing fields for all relevant variables would have consecutive two or more years' observations. The criteria applied for sample selection are the same across all parts of the study in order to provide continuity to the analysis and facilitate the evaluation of the findings collectively for the study. Each empirical chapter would provide descriptive statistics related to the variables applied in the empirical regression tests in the chapter respectively.

The sample by year and by industry is shown in panels B and C. Panel C shows that approximately 41 percent of observations are in the manufacturing industry. We pool together the successive cross-sectional data for the seven year period; it is a panel data due to the short time series dimension. Panel data are better suited to study the dynamics of change, increase the degrees of freedom and reduce the co-linearity among explanatory variables (Gujarati, 2009), therefore improve the efficiency of the econometric estimate. Panel data allow us to formally recognize the possible presence of unobservable heterogeneity in our model.

Table 4. 3: Sample selection

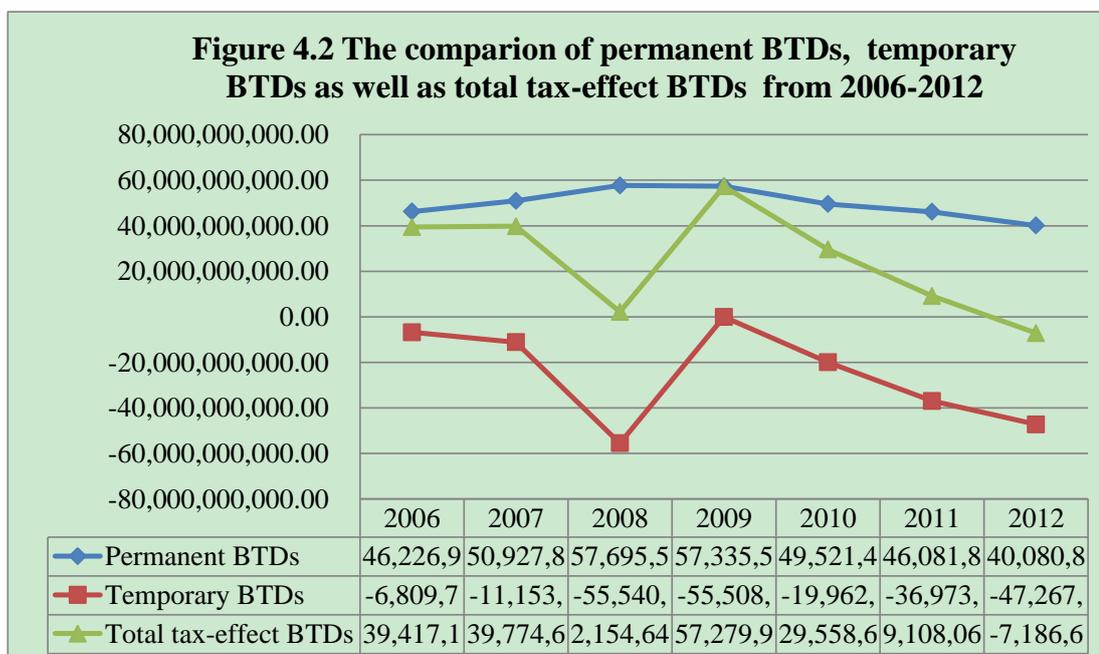
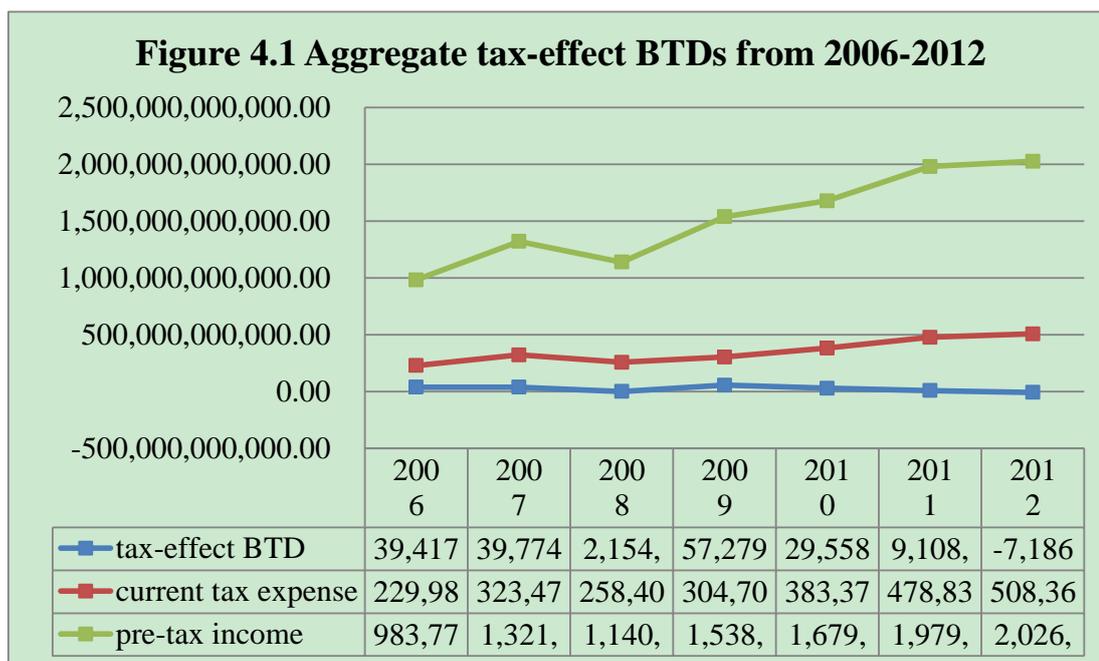
<u>Panel A: pooled sample</u>	
Firm-year observations for both A share and B share firms between 2006 and 2012	10640
less observations without annual reports	315
Less B-shares observations have the same data with A shares	294
less observations with insufficient data to calculate book-tax differences (firms did not disclose the tax reconciliation in their notes to financial statements)	8818
Less observations in financial and insurance industries	133
	<u>1080</u>
<u>Panel B: sample by year</u>	
2006	106
2007	127
2008	156
2009	170
2010	195
2011	193
2012	133
	<u>1080</u>
<u>Panel C: Sample by CSRC Industry Classification</u>	
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
	<u>1080</u>

4.4.4 Descriptive statistics of BTDs trend

A growing aggregate book-tax gap in a country will be consistent with manipulation of reported earnings to the capital markets, tax aggressiveness or some combination of the two. Both Mills (1998) and Desai (2003) in a U.S. context, suggest that expanding book-tax differences are consistent with aggressive tax planning. The existing literature suggests that the ultimate tax planning technique is the one which reduces taxable income without affecting book income (non-conforming tax aggressiveness) (see McGill and Outlay, 2004).

We follow the method of tax-effect BTDs suggested by Tang & Firth (2011). Figure 4.1 and Figure 4.2 show the pattern of total tax-effect BTDs, total permanent BTDs as well as temporary BTDs over time. Three major features of Chinese BTDs can be identified. Firstly, In general, the overall trend is approximately the same, with the aggregate Chinese BTDs being positive in all years except in 2012, that is book incomes are more than taxable incomes, which is consistent with most U.S. studies and some Chinese studies such as Dai & Yao (2006), Ye (2006) and Zeng & Lv (2010), but contrasts with Tang and Firth's (2011) studies where aggregate Chinese BTDs are negative during 1999-2004. It is worth noting that due to the fact that as indicated in Tang and Firth (2011) study, Chinese income tax rules have more conservative expense recognition relative to Chinese GAAP and IFRS (which allows managers' discretion in implementation of income for financial reporting purpose while tax rules are stricter), the book income is usually less than tax income, however, in our sample selection, book income is more than tax income, which reflects that Chinese listed firms have much more parts of profits untaxed. Secondly, the temporary BTDs are all negative, while permanent BTDs are all positive and decrease dramatically since the year 2008, which may be due to the tax regulatory environment changes that are associated with the increased assessment of tax compliance in light of new Enterprise Income Tax Law (EIT Law) to be effective on 1 January 2008. Finally, it is difficult to determine that Chinese BTDs are solely driven by changes in accounting and tax rules in our sample period as they fluctuate over

time. Appendix II details the major differences between Chinese GAAP and corporate income tax laws as reflected in permanent and temporary differences. However, the fluctuation of Chinese BTDs cannot solely be explained by the changes in Chinese GAAP and tax rules during our sample period, and it is a good opportunity to study how management practices explain the variation in the BTDs.



5.0 BTD model: A residual approach

5.1 Introduction

This study advances a new, refined method of separating firm book-tax differences (BTDs) into 'normal' and 'abnormal' components. Prior literature has used a residual approach to separate the different components in BTDs. For example, Desai & Dharmapala (2006) use the residual from a regression of total BTDs on total accruals to estimate a measure of tax planning; Frank *et al.* (2009) construct a tax aggressiveness measure by regressing total permanent BTDs on nondiscretionary permanent items due to the difference between accounting and tax rules; Tang & Firth (2011) develop a cross-sectional regression to divide total BTDs into normal and abnormal components using all Chinese B-share listed firms over the period 1999 to 2004. By doing so, they restrict their measure to tax aggressiveness that does not generate temporary BTDs. 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 and 2012). In our study, we follow their concepts and disentangle BTDs into NBTDs and ABTDs that take account of the uniqueness of Chinese accounting and tax systems. This provides a motivation for our research which is based on the knowledge of unique institutional Chinese setting in term of the differences in tax laws between China and that of developed countries. Using a sample of Chinese A-share firms listed on either the Shanghai or Shenzhen Stock Exchange from 2006 to 2012 and data drawn from the *Accounting Standard 18 Income Taxes* (ASBE, 2006) tax reconciliations, we take a detailed look at the determinants of BTDs in Chinese context to determine a 'normal' level of BTDs that arise as a result of divergence between Chinese GAAP and tax rules, and to deduct this from the total BTDs in order to arrive an 'abnormal' BTD which is presumed to

arise a result of earning management and tax planning. The refined proxy for tax planning is examined against the measures of firm value as a further analysis of shareholders' valuation of corporate tax planning and a consistent negative association between them is found; which provides implication for a tax-related manager-shareholder relationship. The contribution of this study is three fold. Firstly, 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). Secondly, 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, to our knowledge, this is one of the few studies that investigate the shareholders' valuation of corporate tax planning; the conclusion suggests the tax-related institutional and policy differences between China and most recent U.S research when interpreting existing research.

The remainder of the study is organized as follows. Section 5.2 provides the institutional background in terms of modeling book-tax differences in China including a discussion of related prior literature. In particular, we discuss Chinese book-tax differences in terms of its characteristics and measurement. Section 5.3 outlines detailed research design that successfully separating book-tax differences into normal and abnormal components. Section 5.4 presents empirical results and further analysis as well as shareholders' valuation of tax aggressiveness are in section 5.5 and 5.6. The last section 5.7 provides a summary of conclusion of the study.

5.2 A model of Normal book-tax differences

5.2.1 Introduction

This section examines the misalignment between accounting standards and enterprise income tax rules in terms of the differences between taxable income and book income, and prior models for the measure of BTDs are examined.

In decomposing BTDs into a normal component, the component that is thought to be the proxy for tax avoidance (and/or earning management), the standard approach has been conducted as the items thought to generate mechanical BTDs shown in the right-side regression (e.g. Mills & Newberry, 2001; Desai & Dharmapala, 2006; Frank, Lynch & Rego, 2009; Tang & Firth, 2011). For example, Tang & Firth (2011) regress BTDs on the following variables: change in investment in gross property, plant & equipment and intangibles, change in revenue, two variables related to tax losses and the tax rate differential between consolidated firm's applicable tax rate and the average tax rate for the group. However, the existing research ignore the information that is provided in the notes to the published financial statements in decomposing BTDs. *ASBE 18 Income Taxes* (ASBE, 2006) provides guidelines for various disclosures in relation to the tax expenses. In particular, ASBE 18 require firms to provide a reconciliation between the actual tax expense provided in the income statement and the notional tax expense which is the product of the pre-tax accounting profit and the applicable tax rate, however, it is not compulsory for all the listed firms in Chinese context. The reconciliation therefore effectively provides a breakdown of the major sources of a firm's BTDs. In practice, there is certain extent of commonality in the categories disclosed although the ASBE 18 does not provide guidelines about the precise categories of breakdown that a firm should report in the tax reconciliation. Common categories include the effects of (see details in chapter 3):

- Income not taxable
- Non-deductible expenses for tax purpose

-
- The effects arising from differences in effective tax rate of subsidiaries or subsidiaries of foreign operation
 - Prior year adjustments

As a result, the tax reconciliation provisions of ASBE 18 provides users with additional information on the composition of BTDs. Prior studies has not generally made use of this information, however, the information obtained from these disclosure, although not entirely consistent from firm to firm, would allow researchers to break down BTDs into useful normal mechanical components, which facilitate a more detailed understanding of the drivers of BTDs across firms and over time.

5.2.2 Prior model for measure of BTDs

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 is the most basic factor the drives BTD, the differences between GAAP and tax laws are both temporary and permanent, leading to temporary BTDs and permanent BTDs. The detailed review of temporary and permanent BTDs can be seen in section 4.1.2. These two differences can be known as mechanical BTDs, which arise whenever income or expenses appear in the income statement but not in taxable income or vice versa, without firms making any particular efforts to tax avoidance. For example, depreciation for GAAP purpose may be 5 years, while for tax purpose it is 10 years as a minimum.

However, besides the mechanical differences between GAAP and tax laws, BTD could also arise from tax avoidance and/or earning management activities. Managers have the opportunity to apply the ambiguity in accounting and tax rules due to the fact that both rules do not specify tax and accounting treatments for every business transactions due to complex and continually changeable business activities. That is, firms with efforts to manage earnings that involve change to book income that do not result in corresponding

differences in taxable income or with efforts to manage taxable income downward in order to minimize tax liability without affecting book income. A more comprehensive analysis of BTDs would make BTDs as arising from following three sources:

$$\begin{aligned} \text{BTDS} &= \text{difference between book income and taxable income} \\ &= \text{mechanical BTDS} + \text{income due to non-tax conforming earning} \\ &\quad \text{management} + \text{income from tax sheltering} \end{aligned}$$

Since BTDs are argued to be a function of mechanical differences, earning management and tax avoidance, the literature to date has made various attempts to adjust BTDs, in order to develop a purer measure of tax avoidance (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). Some studies have attempted to 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). For example, the U.S.-based studies by Desai & Dharmapala (2006, 2009) define abnormal BTDS as the component of the BTDS not attributable to accounting accruals in order to measure corporate tax avoidance activities. It is obtained by regressing scaled BTDS on scaled total accruals, where total accruals is applied to control for earning management and the residual is the abnormal BTDS to represent a firm's level of tax sheltering. Their regression equation can be cast in the following form:

$$BTD_{i,t} = \alpha_i + \beta TA_{i,t} + \varepsilon_{i,t}$$

Where: $BTD_{i,t}$ is BTD scaled by total assets;

$TA_{i,t}$ is total accruals scaled by total assets;

And: the i subscript indicates firm i and t represents time period

In this case, Desai and Dharmapala (2006,2009) treat the causes of book-tax differences as non-book-tax conforming earning management and tax sheltering activities, and the validity of this measure rests on two assumptions. First, that BTDs are a constant proportion of total accruals both over time within a firm and cross-sectionally across firms, which would not be true, in cases such as fixed asset depreciation is merely a function of differences between accounting and tax depreciation rules, rather than a function of accruals. Second, the remaining BTDs are entirely due to tax sheltering, which would not be true, as mechanical BTDs are involved and may give misleading estimation.

Milles and Newberry's (2001) study, unlike most studies examining BTDs, utilize confidential tax return data over the period 1981 -1996 to examine issues of whether certain firm characteristics cause managers to focus on tax-conforming transactions thus lowering measured book-tax differences. Milles & Newberry (2001) first scale BTDs by beginning total assets, in common with Desai and Dharmapala (2006), Jimenez-Angueira (2007); Frank *et al.* (2009); Armstrong *et al.* (2012)and Badertscher *et al.* (2013); and then regress scaled BTDS on a dummy variable of whether the firm is public or private and a variety of control variables in order to capture both opportunistic behavioral of firm and mechanical differences. This study evidences that there is a tradeoff between tax and non-tax costs of financial versus tax reporting and make a contribution to the division between aggressive tax behaviors and mechanical differences.

Tang and Firth (2011) adopt a similar methodology in Chinese context and argue that abnormal BTDs are indicative of earning and tax management, after controlling the mechanical differences generated by the disparity between financial and income tax reporting. Normal BTDs are estimated by running the following regression:

$$BTD_{i,t} = \beta_0 + \beta_1 INV_{i,t} + \beta_2 \Delta REV_{i,t} + \beta_3 NOL_{i,t} + \beta_4 TLU_{i,t} + \varepsilon_{i,t}$$

where $BTD_{i,t}$ is book-tax differences for firm i in year t , scaled by the lagged value of total assets; $INV_{i,t}$ is the sum of gross property, plant and equipment and intangible assets, proxies for investment scale; $\Delta REV_{i,t}$ is the changes in revenue from year $t-1$ to year t , proxies for economic growth; $NOL_{i,t}$ is the value of accounting loss, proxies for tax loss; and $TLU_{i,t}$ is the value of tax loss utilized for firm i in year t . The error term of the regression is defined as abnormal BTDs. The one issue with Tang & Firth (2011) is that book-tax differences examined may not reflect the tax avoidance at all in its hypothesis. For example it is hypothesized that there is a positive relationship between abnormal BTDs and the number of tax rates, as they argue (p19) that "Chinese listed firms have strong incentives and opportunities to shift income from subsidiaries with a high tax rate to those with a low tax rate" by way of manipulated transfer pricing; however, it is a conforming tax avoidance activity by profit shifting and does not create BTDs.

Frank *et al.* (2009) investigate the association between aggressive tax and financial reporting, and find that firms exhibiting financial reporting aggressiveness also have a tendency to exhibit tax aggressiveness. Frank *et al.* (2009: p9) argue that total BTDs and Desai and Dharmapala's (2006) measure does not control for nondiscretionary items (e.g., intangible assets and property, plant and equipment) that cause temporary and/or permanent BTDs. The Desai and Dharmapala's (2006) measure use total accruals does explicitly control for earnings management but this control would potentially eliminate any relationship between financial and tax reporting aggressiveness. Their measure of tax aggressiveness involves permanent BTDs, which they adjust to remove the effect of non-discretionary items (i.e. those items that lead to mechanical BTDs). Frank *et al.* (2009) do not include temporary differences in their measure of tax aggressiveness, as they argue that temporary BTD reflect earning management via pre-tax accruals (Phillips *et al.* 2003; Hanlon, 2005) and thus would be spuriously correlated with measure of financial reporting aggressiveness. Moreover, they argue that aggressive tax sheltering is more likely to be associated with permanent rather than temporary book-tax differences. As we can see from the estimation equation below, they remove the effects of non-discretionary items that are known to cause permanent

differences (e.g. intangible assets) and other statutory adjustments (e.g. state taxes) but are unrelated to tax planning by regressing permanent BTDs on various items.

$$\begin{aligned} PERMDIFF_{it} = & \alpha_0 + \alpha_1 INTANG_{it} + \alpha_2 UNCON_{it} + \alpha_3 MI_{it} + \alpha_4 CSTE_{it} + \alpha_5 \Delta NOL_{it} \\ & + \alpha_6 LAGPERM_{it} + \varepsilon_{it} \end{aligned}$$

They control for goodwill and other intangible assets (*INTANG*), income or loss attributable to the equity method (*UNCON*), and to minority interests (*MI*), current state tax expense (*CSTE*), changes in net operating loss carry forwards (*ΔNOL*) and non-discretionary permanent differences that persist through time (*LAGPERM*) such as municipal bond interest and tax credits. The residual from this regression form is the discretionary permanent BTDs.

Frank *et al.* (2009) model in terms of overall approach can be representative of the way that BTDs have been analyzed in the literature, that is, regress scaled BTDs on a set of variables thought to influence BTDs mechanically (see Milles & Newberry 2001; Manzon & Plesko, 2002; Rego, 2003; Desai & Dharmapala, 2006; Jimenez-Angueira, 2007; Dyreng *et al.* 2008; Khurana & Moser, 2013; Chan *et al.* 2010; Chen *et al.* 2010). The Frank *et al.* (2009) methodology could be a useful measure of corporate tax avoidance if the non-discretionary BTDs could be removed by the underlying determinants they chosen not driven by aggressive tax sheltering. However, the choice of the variables in the literature lack of theoretical supports, such as in Frank *et al.* (2009) model, their inclusion of goodwill and other intangible assets as an explanatory variable for permanent BTDs as follows:

"[W]e control for goodwill and other intangible assets...because differences between the financial and tax accounting rules for goodwill and other intangibles frequently create permanent differences unrelated to tax planning."
(2009: p473)

The inclusion of other variables may follow the similar fashion, and the measure of discretionary permanent BTDs may less likely to reflect current aggressive tax planning by inclusion of persistent permanent differences through time such as municipal bond interest and tax credits. Moreover, as pointed by Frank et al (2009), the measure of discretionary permanent BTDs do not directly reflect tax planning activity that generate temporary differences which could also be a significant component of corporate tax sheltering activities. As a result, with different sources of permanent BTDs across different jurisdictions, researchers should be careful in the choice of control variables for estimating the nondiscretionary portion of BTDs.

In sum, as we can see from above discussion, the methods employed to date have tended to suffer from drawbacks that only give limited insight into how firms manage their tax liabilities and failed to link the measure of normal BTD with the characteristics of the tax system. Therefore, we 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 the corporate tax system into account. After that, we attempt to explain these abnormal BTDs by relating to corporate governance characteristics.

5.2.3 Measuring normal book-tax differences in Chinese context

BTDs are designed to measure the extent to which a firm is able to avoid paying tax on its accounting income and arise from the differences in income recognition as well as the deduction rules for costs and expenses between GAAP and tax laws. As shown in the tax reconciliation disclosed in annual financial reports, they represent the difference between prima facie income tax expense and those tax expense derived from consolidated income statement which has discussed in section 4 which has discussed in section 4. Under the Chinese tax laws, Book-tax differences arise principally as a result of (ASEB, 2006):

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- Non-deductible expenses such as losses caused by penalties and fines, overrun donation, sponsor costs, fines for delaying tax payment
 - Income not taxable such as interests on government securities
 - Prior year adjustment to tax payable
 - Income generated arising from differences in effective tax rate of subsidiaries or subsidiaries of foreign operation

Examination of tax reconciliation for the Chinese listed firms revealed that the above four categories of book-tax differences were disclosed by the vast majority of firms. An examination of the tax disclosure of the Chinese firms listed in Shenzhen and Shanghai stock exchange over the period 2006 to 2012 reveals that a range of categories are disclosed. Other commonly utilized categories include: the effect of changes in statutory tax rates on deferred tax balances, utilization of brought forward tax losses, current period tax losses carried forward, unprovided deferred tax, withholding tax on dividends, effect of taxation of associates and joint venture, R&D tax credits, tax concession and tax refund such as purchase of domestic equipment. In this study, we break down book-tax differences into several categories in terms of the tax reconciliation. Except item 7, 8 and 11, all other items are present in the annual reports of Chinese listed firms. The hypothesized drivers for these BTDs take into account of the tax adjustment items on tax forms of Chinese income tax laws and are listed in Table 5.1.

Table 5. 1:Hypothesized Drivers ofBTDs

	Category of Permanent BTD	Hypothesized Drivers of Category	Proxy variables	Prior Literature
1	Income not taxable	Investment income (dividend income) Finance income	INV_{it} $INTEREST_{it}$	Dai & Yao (2006); Ye(2006); New EIT law (2008)
2	Expenses not deductible	Industry membership; operating expenses.	OPE_{it}	Dai & Yao (2006); Ye(2006); Tang & Firth (2011)
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.	$TURNOVER_{it}$ $ASSETS_{it}$ $OPEPROFIT_{it}$	Khurana & Moser (2013); Frank, Lynch & Rego (2009)
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. Could also include a measure of group complexity (number of subsidiaries?)	$TOTALPROFIT_{it}$ $LAG1PROFIT_{it}$ $LAG2PROFIT_{it}$	Manzon & Plesko (2002); Wilson (2009); Zeng (2010); Tang & Firth (2011);
6	Current period tax losses carried forward (Current period unrecognized losses)	Current period pre-tax profit and two lags of pre-tax profit.	$TOTALPROFIT_{it}$ $LAG1PROFIT_{it}$ $LAG2PROFIT_{it}$	Desai & Dharmapala (2009); Frank, Lynch & Rego (2009)
7	Withholding tax and similar effects of intra-group transfers	Some measure of profits generated in foreign jurisdictions	N/A	
8	Taxation of capital gains and losses	Accounting gains on sale of fixed assets	N/A	
9	Acquisitions and disposal of properties, subsidiaries and joint ventures (Non-taxable profit on the sale of subsidiaries and associates)	Assume that it is related to the size of the firm, Normal BTD for this item = (Total fixed assets / Average total fixed assets * average value of this BTD across firm-years)	N/A	
10	Other permanent differences	Try a combination of the previous drivers	N/A	

11	Exceptional items	No driver	N/A	
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1. Income not taxable:

According to the Article 26 of EIT law (2008), equity investment income such as dividend income and bonuses between qualified resident enterprises, are not taxed, which will be a driver of permanent BTDs. As financial statements of Chinese listed firms do not disclose information on dividend income separately, and it is conflated with category of investment income under equity method, then investment income will be a proxy for the non-taxable income. Another driver of income not taxable will be focus on finance income, which is applied as a proxy for interest on government securities (non-taxable interest) (Article 26, EIT law 2008).

2. Expenses not deductible

It is hypothesized that the normal level of non-deductible expenses will differ by industries but should be constant as proportion of total expenses within an industry. Therefore, it is hypothesized that industry membership and operating expenses will be the main drivers of non-deductible expenses. It is argued that there are differences in treatment of expenses under the accounting rules and tax laws, with the former understating expenses to users of financial statements and the latter overstating expenses to tax authorities (Tang & Firth, 2011). Therefore, operating expenses is included to control for different expenses recognition in accounting rules and tax laws.

3. Effect of different tax rates applied to income

It can be expected that the application of different tax rates can arise due to the overseas tax rates or preferential subsidiary tax rates that are different from the domestic tax rates, or due to the individual domestic and foreign tax rates differing from the 'applicable' average rate which is applied in calculation of notional tax expenses in the tax reconciliation. The drivers of resulting permanent differences will include measures that capture mix of sources of overseas income, which can be derived from segmental reporting of each

listed firms, the best proxy measure of the extent of this effect is segmental operating income before exceptional items, segmental turnover, segmental total assets and net assets, all by its geographically segment, in order to control for differences between financial and tax accounting reporting which frequently create permanent differences unrelated to tax aggressiveness. However, in the case of Chinese annual reports, the segmental reporting is categorized by its downstream and upstream industry, with no disclosure on foreign income. As a result, we apply operating profit, turnover, total assets from consolidated profit and loss account, and use industry membership as a dummy variable. The turnover is included to control for the differences between tax and accounting rules in terms of revenue recognition under each system. Firms with higher levels of either fixed or intangible assets tend to have higher non-debt tax shields in the form of higher depreciation or amortization deductions for tax purposes than those for the book purposes (Manzon & Plesko, 2002; Khurana & Moser, 2013). Total assets is included to control for firms size and complexity effects, which is argued to be associated with level of tax noncompliance (Hanlon *et al*, 2005; Chan, Lin & Mo, 2010). As the variables would be deflated by total assets to control for any scale effects (Akbar & Stark, 2003), natural log form would be applied to minimize the spurious bias to the estimated effect of scale (see variable definitions).

4. Prior years adjustments

The presence of prior years' adjustments arise as a result of adjustments to prior year estimates of tax payment due, therefore it is hypothesized that there is a normal relationship between prior-year adjustments and the level of prior-year accounting pre-tax profits. It can be estimated by regressing current period prior-year adjustments on the previous two years of pre-tax accounting profits.

5. Tax losses:

A factor that may limit the estimate of firms' taxable income derived from financial statement data is the presence of net operating losses (NOLs). A company that incurs a net capital taxable loss in a given year and is unable to

take advantage of the three-year carryback provision but is allowed to carry the capital loss forward to offset against capital gains generated in future years but only limited up to five years. Both Amir & Sougiannis (1999) and Atwood & Reynolds (2008) recognize that current period utilization of prior period tax losses is value relevant. The presence of recognized and unrecognized tax losses and their subsequent utilization can produce potentially important distorting effects on both temporary and permanent BTD differences. As a result, it is of significance to take losses into account in deriving the normal level of BTDs across firms. Previous approach in the literature has predominantly been to exclude loss-making firm-years from the analysis (Dai & Yao, 2006; Desai & Dharmapala, 2006; Hanlon & Slemrod, 2009; Atwood *et al.* 2010; Chan, Lin & Mo, 2010), due to its tendency to identify 'loss-making' firms as those firms that report an overall accounting loss. However, it is mostly likely that a large number of unrelieved losses carried forward by firms are generated in cases that whose overall accounting profit is positive, given the complex structure of most large listed firms. NOL carry forwards can affect the incentives to engage in tax avoidance, due to its association with valuation allowance account (Desai & Dharmapala, 2009). Firms with NOL carry forwards have less incentive to engage in current year tax planning. In Chinese context, When a firm generate a taxable loss in one year could carry the loss forward to offset taxable income earned in the subsequent 5 years (ASBE, 2006: Article 5). It is indicated by Willie (1992) that BTDs will be understated when a tax loss occurs and overstated when a tax loss is utilized. When a tax loss is utilized, the preceding year's tax losses are carried forwarded against current year's taxable income, leading to positive BTDs. As indicated by Manzon & Plesko (2002), the presence of NOLs carry forwards cannot make efficient use of tax deductions and benefits.

The utilization of tax losses are derived by a combination of tax losses generated in prior period with sufficient off-settable profits in current period. When previously recognized tax losses brought forward is utilized by firms, temporary BTDs and therefore total BTDs will increase in the period of utilization, which is due to the reversal of previous negative temporary

differences generated by the recognition of the tax losses in deferred tax assets. As a result, the utilization of tax losses can be driven by the factors of sufficient off-settable profits in current periods in combination with tax losses generated in prior periods. Therefore, it is hypothesized that utilization of tax losses carried forward, on average, will be positively associated with profit in current period, but negatively associated with recent period reported profit, and we will apply two lags of prior period profits in the model. In terms of the current period unrecognized losses appear in the tax reconciliation note, it is recognized as permanent differences and will depend on the firm's assessment of the possibility of future recovery, as well as on the level of tax losses themselves. As a result, in consistent with the utilization of tax losses, it is hypothesized that this category will be related to current and prior year period pre-tax accounting profits, and is expected that such losses will be both negatively related to both current and prior period levels of pre-tax profits.

6. Withholding tax and similar effects of intra-group transfers

Principally dividends that are declared by subsidiaries located in overseas jurisdictions fall in this category, and therefore it is hypothesized that the normal level of such taxes would be related to the amount of accounting income generated in foreign jurisdictions. As financial statements of Chinese listed firms do not disclose information on foreign subsidiaries or foreign investment, the category of drivers will not be examined, and will be included in the category of other permanent differences.

7. Other permanent differences

This category includes items that do not naturally fall into any of the other categories, or that have been categorized as such by the firm. It is therefore possible that this category could be related to any of the drivers hypothesized for the other categories.

5.3 BTD model and variable analysis

5.3.1 Estimating Abnormal BTDs from total BTDs

The estimation equation is as follows:

$$\text{BTD}_{it} = \alpha_0 + \alpha_1 \text{TURNOVER}_{it} + \alpha_2 \text{OPE}_{it} + \alpha_3 \text{OPEPROFIT}_{it} + \alpha_4 \text{TOTALPROFIT}_{it} + \alpha_5 \text{LAG1PROFIT}_{it} + \alpha_6 \text{LAG2PROFIT}_{it} + \alpha_7 \text{INV}_{it} + \alpha_8 \text{ASSETS}_{it} + \alpha_9 \text{INTEREST}_{it} + \text{Year} + \text{IND} + \varepsilon_{it} \quad (1)$$

Where:

BTD_{it} = the reported tax-effect total permanent BTDs for firm i in year t

TURNOVER_{it} = the net sale for firm i in year t

OPE_{it} = the operating expenses for firm i in year t

OPEPROFIT_{it} = the operating profit before interests and taxes for firm i in year t

TOTALROFIT_{it} = the pre-tax profit for firm i in year t

LAG1PROFIT_{it} = the prior one year lagged pre-tax profit for firm i in year t

LAG2PROFIT_{it} = the prior two year lagged pre-tax profit for firm i in year t

INV_{it} = the total investment income for firm i in year t

ASSETS_{it} = the total assets for firm i in year t , which is measured by the log of
(total assets divide by average total assets across the whole
sample)

INTEREST_{it} = the finance interest income for firm i in year t

YEAR is Year dummy variables and IND is Industry dummy variables

All the variables are scaled by lagged total assets except for the ASSETS variable. We use robust standard errors by clustering on each firm (Sun, Tong & Tong, 2002; Petersen, 2009; Chen & Al-Najjar, 2012). Year-fixed effects as well as industry fixed effects are included in all tests in order to control for differences across time and across industries.

Due to fact that the BTD model is a measuring model where the residuals are derived as independent variable in the following two empirical chapters, and the residuals are supposed to contain the firm-specific effects, therefore it is

reasonable to use the OLS² model to exploit the panel data features of the sample (Multiple observations per firm over time), although as argued by Robert & Whited (2012) that, a major advantage of using fixed effect model is to resolve or reduce the extent of a key econometric problem that occurred in a pooled ordinary least squares (OLS) in empirical studies, namely omitted variables that are correlated to explanatory variables. Estimates from fixed-effect model are also presented for comparison purposes

5.3.2 Tax aggressiveness variables

The first measure of tax aggressiveness we will use is the total BTDs, following the method of tax-effect BTDs suggested by Tang & Firth (2011), which is discussed more in the review of methodology chapter. The various seven categories of BTDs for the discussion in Table 5.1 are also examined to check any differences for further adjustments. Based on the income tax expenses regarding the reconciliation between tax expenses and accounting profit, we calculate the tax-effect BTDs for firms with such disclosures for years 2006 to 2012. A reconciliation of tax-effect book income and tax expense enables us to avoid the measurement errors inherent in estimating BTDs which is the case for income-effect BTDs.

5.3.3 Institutional variables unrelated to tax planning to Control for normal BTDs

Following Tang & Firth (2011 and 2012), the hypothesized drivers of each category of book-tax differences discussed in section 5.2 are examined in regression models. The accounting information is extremely informative for the BTDs and several variables from financial statements and their related disclosures are selected to capture the mechanical relationship. Specifically,

² Although Breusch-Pagan test and Hausman test suggest that there is significant firm effect and Panel data method is argued to better control for the magnitude of unobserved missing variables, especially under the fixed effect model (Robert & Whited, 2012).

we add variables $TURNOVER^3_{it}$, OPE_{it} , $OPEPROFIT_{it}$, $TOTALROFIT_{it}$, $LAG1PROFIT_{it}$, $LAG2PROFIT_{it}$, INV_{it} , $ASSETS_{it}$, $INTEREST_{it}$, to control for differences between financial and tax accounting reporting which frequently create differences unrelated to tax aggressiveness (e.g. Manzon & Plesko, 2002; Dai & Yao, 2006; Frank, Lynch & Rego; 2009; Wilson, 2009; Tang & Firth, 2011).

Industry is a set of dummy variable for each industry classification, a major feature of Chinese corporate income tax is that the income tax rate varies across firms with different investors and firms established in different industries and locations. The applicable income tax rate (ATR) for listed firms ranges from 0 percent to 33 percent, and since a new Enterprise Income Tax Law (EIT Law) was promulgated by the National People's Congress of China to take effect on 1 January 2008, the ATR ranges from 0 percent to 25 percent (See Table 5.2 and 5.3).

Table 5. 2: Tax rate for varying industries in China since year 2000

Industry classification	Rate for taxable income starting from 01/01/2000
Transportation and warehousing, Industries and business	7-20
Construction and real estate	10-20
Social service such as food and beverage	10-25
Communication and cultural industry	20-40
Other industries	10-30

(State taxation administration, 2000)

Table 5. 3: Tax rate for varying industries in China since year 2007

Industry classification	Rate for taxable income starting from 01/01/2007
Farming, forestry, animal husbandry and fishery	3-10
Manufacturing	5-15
Wholesale and retail trade	4-15
Transportation and warehousing	7-15
Construction	8-20
Social service such as food and beverage	8-25
Communication and cultural industry	15-30
Other industries	10-30

(State taxation administration, 2007; Notes: The detailed classification is based on CSMAR database)

For every firm-year, regress BTDs on all the main variables that are thought to affect mechanical permanent BTDs. we estimate listed equations cross-sectionally each year and use the residuals from BTDs model as the measure of abnormal BTDs into stage 2 regression in the next two chapters. Variables are winsorized at 1 percent and 99 percent in order to get normal level of equation for the level of tax aggressiveness. Normal BTDs are the fitted values measured as the differences between the total BTDs and abnormal BTDs. The residuals cannot be aggregated across all firms to obtain the measure of aggregate tax sheltering in the year t (Desai & Dharmapala, 2006), but can be identified as the proxy for the level of tax aggressiveness for each firm of our sample period.

5.4 Empirical Results

5.4.1 Descriptive statistics for BTB model

To test the significance of the relationship between corporate governance mechanisms and tax aggressiveness, we use a regression analysis that control for major mechanical differences between financial reporting and tax rules we examine, and then apply the residuals calculated from cross-sectional extended

model to estimate ABTDs⁴.

Panel A, B and C of Table 5.4 shows the summary statistics and correlation matrix for the variables used in the BTDs model. Panel A shows that the mean (median) of BTD is 0.014 (0.0008), suggesting that aggregate Chinese BTDs are generally positive during 2006 and 2012 and is consistent with trend of aggregate BTDs in U.S. context (Hanlon, Laplante & Shevlin, 2005; Frank *et al.* 2009; Armstrong *et al.* 2012). The means (medians) of TURNOVER and OPE are 72.41 percent (64.89 percent) and 67.33 percent (59.42 percent) of total assets respectively. The mean (median) of INV is 1.04 percent (0.23 percent) of total assets, which indicates that most listed firms can create profits via investing activities.

We further divide the total BTDs into two subsamples that is, the subsample with positive BTDs and the subsample with negative BTDs. Panel B of Table 5.4 shows that, regardless of the positive and negative BTDs, the mean BTD is biggest in 2008 which shows the effect of new accounting standards which

⁴The main key assumptions for a standard regression model include the homoskedasticity (error term is constant), no serial correlation (covariance of error terms is zero) and exogeneity (no correlation between regressors and error term) (Gujarati, 2009). All the assumptions are directly related to error terms (residuals), which are important in the BTDs model regression as I am modeling BTDs and use its residual to examine the relationship between corporate governance mechanisms and tax aggressiveness. The implication for these assumptions is in order to ensure the regression coefficients and standard errors are unbiased, and to ensure the p-value as well as significant tests trustworthy. Firstly, as one of the key assumptions for a standard regression model, Unit root tests ('xtfisher' command in Stata) for stationarity of both level values were applied and results show that all the variables passed the Augmented Dickey-Fuller test and Phillips-Perron test. In terms of issue of endogeneity, The Ramsey RESET test (Stata Command: ovtest) shows that the regression does not pass the test (P-value) and have this problem inherent in the regression; it may arise from omitted variables or error-in-variables. It is argued that taking endogeneity problem seriously will complicate the nature of empirical work, the omitted variable bias is not easily resolved by including additional proxy variables in the analysis or the method of instrumental variables, much empirical work appear to implicitly assume that endogeneity biases are a second-order concern, despite researchers recognize this concern (Duncan, Magnuson & Ludwig, 2004). Therefore, I would stay with the problem as it is difficult to find the instrument variables and the method to deal with endogeneity will reduce the sample size significantly (Chenhall & Mores, 2007) which is a big concern for running the models in following chapters. Finally, significance levels are based on robust standard error clustered at the firm level to control for heteroscedasticity and serial correlation in all fixed-effect and OLS models.

was effective in that year. Meanwhile, the Chinese BTDs shows the pattern of decreasing differences between book income and tax income for the sample period, no matter positive or negative BTDs.

The majority of the relationships between the BTDs and the explanatory variables are as expected in Panel C. The correlation analysis shows that total BTDs have a positive association with various types of profit except the prior two year lagged pre-tax profit, INV and ASSETS, and a negative relation with TURNOVER and OPE , which is consistent with study of Manzon & Plesko (2002). While the primary focus is on the ability to predict BTDs rather than on identifying the specific variables that generate the BTDs, the high degree of correlation between variables might suggest that the inclusion of each variable into the regression analysis is of significance to avoid a correlated omitted variable and inaccurate inferences in terms of relative explanatory power of any particular variable (Manzon & Plesko, 2002).

Table 5. 4:Descriptive statistics and correlations**Panel A: Summary of hypothesized drivers of BTDs**

Variables	Obs	Mean	Std. Dev	Min	Max	Median
BTD	1080	0.014	0.288	-1.568	7.8	0.001
TURNOVER	1080	0.724	0.488	0.001	3.604	0.639
OPE	1080	0.673	0.489	-0.014	3.543	0.594
OPRPROFIT	1080	0.061	0.067	-0.354	0.339	0.055
TOTALPROFIT	1080	0.059	0.069	-0.373	0.665	0.05
Lag1PROFIT	1052	0.051	0.072	-0.837	0.763	0.043
LAG2PROFIT	1024	0.087	1.469	-0.899	46.981	0.038
INV	1022	0.01	0.022	-0.029	0.279	0.002
ASSETS	1080	-1.532	1.675	-7.973	3.738	-1.712
INTEREST	1074	0.002	0.002	0.000	0.016	0.002

Panel B: Subsamples of BTDs

Year	Full sample BTDs		Positive BTDs (subsample 1)		Negative BTDs (Subsample 2)	
	Obs	Mean	Obs	Mean	Obs	Mean
2006	106	0.0342	77	0.0495	29	-0.0064
2007	127	0.0079	92	0.0135	35	-0.0071
2008	156	0.0505	86	0.0959	70	-0.0053
2009	170	0.0231	91	0.0478	79	-0.0055
2010	195	-0.0048	125	0.0069	70	-0.0257
2011	193	0.0011	119	0.0041	74	-0.0039
2012	133	0.0003	70	0.0037	63	-0.0035
2006-2012	1080	0.0145	660	0.0292	420	-0.0084

(Note: for positive BTDs, the bigger the figure, the more the differences between book and tax differences, and for negative BTDs, the higher the figure, the less the differences between book and tax differences)

Panel C: Correlation Matrix

	BTD	TURNOVER	OPE	OPEPROFIT	TOTALPROFIT	Lag1PROFIT	LAG2PROFIT	INV	ASSETS
TURNOVER	-0.047 (-0.047)								
OPE	-0.042 (-0.013)	0.991 (0.984)							
OPEPROFIT	0.029 (0.288)	0.035 (0.047)	-0.097 (-0.092)						
TOTALPROFIT	0.043 (0.331)	0.052 (0.079)	-0.063 (-0.052)	0.873 (0.948)					
Lag1PROFIT	0.027 (0.219)	0.019 (0.042)	-0.045 (-0.064)	0.474 (0.707)	0.41 (0.735)				
LAG2PROFIT	-0.166 (-0.177)	-0.031 (-0.001)	-0.036 (-0.091)	0.031 (0.577)	0.024 (0.598)	0.024 (0.71)			
INV	0.107 (0.276)	-0.059 (-0.062)	-0.027 (-0.035)	0.11 (0.043)	0.116 (0.054)	0.02 (0.039)	0.015 (0.052)		
ASSETS	0.013 (0.047)	-0.025 (-0.076)	-0.04 (-0.093)	0.069 (0.038)	0.033 (0.017)	0.047 (0.007)	-0.116 (-0.018)	-0.143 (-0.039)	
INTEREST	0.075 (0.033)	0.149 (0.196)	0.140 (0.194)	0.077 (0.028)	0.107 (0.094)	0.116 (0.120)	0.0029 (0.069)	0.054 (0.118)	-0.042 (-0.012)

Note: Pearson correlation is at the top and the spearman correlation is at the bottom.

5.4.2 Regression results for BTDs model

Columns 1 to 7 of Table 5.5 show⁵ the results on individual categories of total permanent differences to provide a benchmark for the estimation of the full model and evidence regarding the effect of different factors on the book-tax gaps. The columns 8 and 9 of Table 5.5 report the results from estimated BTDs model for full sample with OLS model and fixed-effect model respectively, it shows that overall model is a good fit, the R-square for each of fixed-effect model and OLS model are 50 percent and 44.8 percent respectively. In terms of a fixed-effect model, we assume that differences across firms can be captured with firm-specific constant, but that the marginal effect of each explanatory variable is same across all firms and over time. we infer from this result that a relatively few variables that reflect the differences in accounting and tax approaches applied for book and tax purposes explain a significant proportion of the total BTDs.

Six out of eight variables are significant in OLS regression, and four variables are significant in fixed-effect model, which suggest that other insignificant variables in fixed-effect model are proxying for firm-level characteristics, and it can be further argued that OLS model may be better for out-of-sample prediction and for the measurement of abnormal BTDs.

⁵It is important to make sure that there is no multicollinearity problem among the independent variables which cause misleading problem. Rawlings (1998) suggest that $VIF > 10$ as a benchmark for serious collinearity. I calculate the variance inflation factors for the regression variables, one variable (Variable "Turnover" with extremely high VIFs is dropped out for full sample in regression, it can be argued that the rationale for the high correlation between turnover and profit measures is that profit measure is partially proxying for turnover effect. As a result, none of the individual variables exceed 10 and the their mean exceed 1, so there is no indication that multi-collinearity is a problem.

Table 5. 5: Estimated coefficients from BTD model

Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	FE model	OLS	OLS	
Dependent Variables	BTD1	BTD2	BTD3	BTD4	BTD5	BTD6	BTD7	BTD	BTD	Positive BTD	Negative BTD	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
OPE		-0.0003 (-1.36)						0.000 (0.73)	0.000 (0.24)	-0.004 (-1.40)	0.00019 (0.41)	-0.00053 (-0.36)
OPEPROFIT			-0.010 (-0.47)					0.013** (-1.97)	-0.091*** (-4.89)	-0.087*** (-3.98)	-0.119*** (-5.76)	-0.058** (-2.14)
TOTALPROFIT					0.067* (1.81)	0.0517*** (3.80)	0.008* (1.87)	0.169*** (8.71)	0.191*** (6.32)	0.155*** (7.48)	0.144*** (3.92)	
Lag1PROFIT				0.001 (0.74)	-0.043** (-2.36)	-0.016** (-2.30)	0.001 (0.29)	-0.017*** (-3.09)	-0.016* (-1.74)	-0.004 (-1.04)	-0.022*** (-3.18)	
LAG2PROFIT				0.000 (-0.007)	0.000*** (2.57)	-0.000*** (-19.05)	-0.011*** (-3.74)	-0.020*** (-2.77)	-0.020* (-2.51)	-0.013** (-1.96)	-0.016 (-0.77)	
INV	0.115*** (5.61)						0.002 (0.16)	0.063*** (3.39)	-0.104 (-0.45)	0.049*** (3.28)	0.004 (0.15)	
ASSETS			0.006 (1.02)				0.000 (0.37)	0.0007*** (4.10)	-0.0009 (0.71)	0.000 (0.25)	0.002*** (4.47)	
INTEREST	-0.009 (-0.17)						-0.123* (-1.79)	-0.155 (-1.55)	-0.096 (-0.56)	-0.269*** (-2.58)	-0.023 (-0.15)	

Intercept	0.002*** (4.15)	-0.00012 (-0.35)	0.021 (1.21)	0.0002 (0.33)	-0.002 (-1.32)	-0.003*** (-3.00)	0.003*** (2.62)	0.002* (1.82)	0.000 (0.09)	0.004*** (2.94)	0.000 (-0.03)
Observations	853	1028	657	538	585	811	621	958	958	586	372
R-square	0.368	0.034	0.054	0.041	0.284	0.249	0.171	0.448	0.507	0.512	0.453
Year dummies	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled
Industry dummies	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled	None	controlled

Note: All variables are scaled by total assets except total assets itself. 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 are as follows: BTD_{it} is the reported tax-effect total permanent BTDS for firm i in year t , which is adjusted for the change in tax rate since 2008; $BTD1_{it}$ is the reported tax-effect non-taxable income category of total permanent BTDS for firm i in year t ; $BTD2_{it}$ is the reported tax-effect expenses not deductible category of total permanent BTDS for firm i in year t ; $BTD3_{it}$ is the reported tax-effect different tax rate effect category of total permanent BTDS for firm i in year t ; $BTD4_{it}$ is the reported tax-effect prior year adjustment category of total permanent BTDS for firm i in year t ; $BTD5_{it}$ is the reported tax-effect utilization of tax losses category of total permanent BTDS for firm i in year t ; $BTD6_{it}$ is the reported tax-effect current period unrecognized tax losses category of total permanent BTDS for firm i in year t ; $BTD7_{it}$ is the reported tax-effect other permanent differences category of total permanent BTDS for firm i in year t ; OPE_{it} is the operating expenses for firm i in year t ; $OPEPROFIT_{it}$ is the operating profit before interests and taxes for firm i in year t ; $TOTALPROFIT_{it}$ is the pre-tax profit for firm i in year t ; $LAG1PROFIT_{it}$ is the prior one year lagged pre-tax profit for firm i in year t ; $LAG2PROFIT_{it}$ is the prior two year lagged pre-tax profit for firm i in year t ; INV_{it} is the total investment income for firm i in year t ; $ASSETS_{it}$ is the total assets for firm i in year t , which is measured by log of (total assets divided by the average total assets across whole sample); $INTEREST_{it}$ is the finance interest income for firm i in year t . Year and industry dummy variables are also included in models.

In column 8 of Table 5.5, Operating expenses (OPE) is positively related to permanent BTDs, operating expenses themselves can be driven by the treatment of advertisement costs, as a proxy for political costs, which are supportive of conclusions by Hanlon, Maydew & Shelvin (2008), Hanlon & Slemmond (2009) and Minnick & Noga (2012), that tax management can be influenced by political costs, and are consistent with firms with greater proportion of non-deductible expenses and at greater risk from public attention tends to have more permanent BTDs. columns 10 and 11 report the results from estimating BTDs model from subsamples positive BTDs and negative BTDs, each of coefficients on the variables have the similar results with that of full sample, except the operating expenses, which have a negative coefficient in subsample of negative BTDs. In terms of accounting treatment, costs such as advertisement costs and costs for business entertainment are reported as operating expenses in the financial reporting (ASBE 2006); however, with regard to tax treatment, the expenses for business entertainment or advertising insured by an enterprise shall be deductible to the extent of not more than 0.5 percent and 15 percent of sales revenue of the current year and the excess may be carried forward to future years for deduction (Article 43 & 44, New EIT law, 2008), therefore, the variable operating expenses has an unpredictable effect on BTDs, either positive or negative.

Specifically, total assets⁶ (ASSETS) is positively related to the total permanent BTDs, consistent with larger firms making relatively more advantage of tax-favored investments than smaller firms (Manzon & Plesko, 2002). It is worth noting that coefficient on total assets (ASSETS) are significantly positive except in the subsample of positive BTDs, the rationale for the insignificance can be that firms with positive BTDs might also have the positive accounting income, which might have less incentive for income smoothing compared to that of loss firms, which further indicate listed firms'

⁶Qualitatively identical results to those reported above in models are found in Table 5.8 when take log form of total assets directly instead of the variable ASSETS defined above.

tradeoffs between financial reporting and tax reporting decisions.

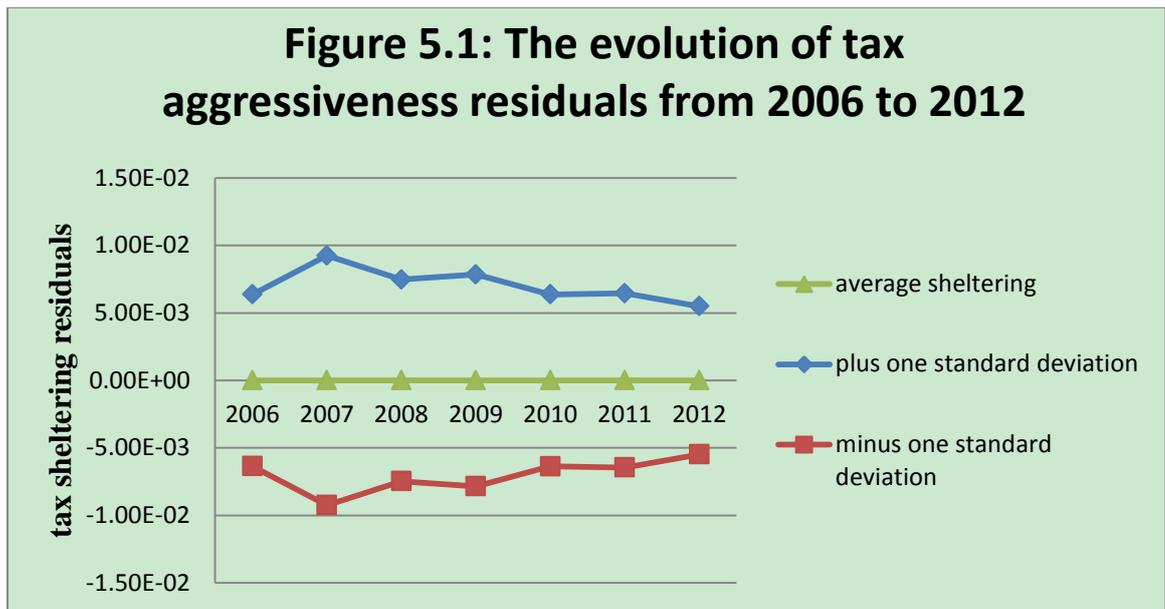
As seen in both individual regressions for each category and full sample regression results (Column 5, 6 and 8 of Table 5.5), utilization of brought-forward tax losses is positively related to current period pre-tax profit (TOTALPROFIT), while are negatively related to the recent prior period pre-tax profits (LAG1PROFIT), which confirms our prediction that reversal of previous recognized tax losses have important effect on total permanent differences. Meanwhile, in line with our prediction, unrecognized current period tax losses is negatively related to prior period levels of pre-tax profits (LAG1PROFIT and LAG2PROFIT). The positive and significant coefficient on current pre-tax income are consistent with profitable firms making more significant investment in tax-advantages assets that generate differences resulting in greater book income relative to taxable income. Investment income (INV)⁷ is positively related to total permanent BTDs, consistent with increases in investment income and non-taxable interests will lead to increase in level of tax aggressiveness, as listed firms have incentives to create profits via investing activities to reduce income tax burdens, due to the Chinese accounting regulation on non-taxable income (Article 26, EIT law 2008). It is worth noting that investment income has different sign in fixed-effect model and OLS model, which can be argued that it can affect different BTDs

⁷Some prior studies have their data set that were constrained to firms outside financial and insurance industries due to the unique reporting incentives and regulatory monitoring in these industries (e.g. Jimenez-Augueira, 2007; Frank, Lynch & Rego, 2009; Chan, Lin & Mo, 2010). Therefore, in this part we include financial institutions into the sample. To validate our results, we re-estimate the results by adding a dummy slope term as which is the interaction of interest income and dummy variable as well as dummy intercept the dummy variable is 1 for financial and insurance firms and 0 for non-financial firms, due to the special characteristics of financial and insurance firms in terms of interest income variable. Therefore, we will apply the 1206 firm-year observations for the inclusion of financial and insurance firms. The results (untabulated) show that the tests do not qualitatively change our inferences, however, there is presence of multicollinearity, especially for the variables of interest income, which validate the exclusion of financial and insurance firms in the BTD model.

categories in different directions, as it can account for differences caused by lower of cost or market for book purpose and unrealized gain/loss recognized for book but not for tax purpose (Dai & Yao, 2006; Ye, 2006).

We interpret these resulting residual BTDs as a more precise measure of tax sheltering activities. As the residuals are constrained by the regression procedures that cannot be interpreted as the amount of income sheltered from taxes by firm i in year t , and cannot be aggregated across all firms to obtain a measure of aggregate tax sheltering in year t (Desai & Dharmapala, 2006), it is only measured as proxy for variations in tax sheltering activities within a firm over time. This resulting residuals will contain abnormal tax planning and earning management, they can be regressed on variables designed to capture corporate governance characteristics that are thought to be associated with aggressive tax planning and also on earning management variables. Figure 5.1 plots the averaged residuals across all firms in the sample for each year from 2006 to 2012 (also including one standard deviation from the mean residual for firms in each of these years). It is worth noting that this figure cannot be applied to address questions about whether the aggregate amount of aggressive tax activities has grown over time (Desai & Dharmapala, 2006). The most important feature is the substantial increase in variation of this measure across firms since the year 2008. Despite the analysis relies only on within-firm variation, the explanatory variables for tax aggressiveness that identified within firms over time can also shed light upon this variation across firms.

Figure 5. 1: The evolution of tax aggressiveness residuals from 2006-2012



(Note: The figure plots the average residuals for the measure of tax sheltering activities from 2006 to 2012 discussed in the above text along with the average plus and minus one standard deviation of that tax sheltering measure)

5.5 Robustness tests

5.5.1 Hold-out Sample Prediction

It has been argued that it is better to use OLS model for prediction, therefore, to validate our results, we apply an out-sample test where we estimate ABTD in a different sample to the test period. Both Tang & Firth's (2011) model and our BTD model with the sample period from 2006 to 2012 are applied. In particular, we use the parameters estimate in the subsample 1 (samples are divided into two subsamples based on the number of listed firms involved, subsample 1 is the first half of total number of listed firms and the remaining is the subsample 2) to calculate the NBTDs for the subsample 2 and obtain the predicted ABTDs (predicted residuals). Then subsample 2 is estimated with the same BTD model variables to obtain the actual ABTDs (actual residuals). Finally, to calculate the sum of squares the distance between the predicted ABTDs using hold-out sample tests and actual ABTDs derived from

subsample 2, with our BTM model and Tang & Firth's model. It is worth noting that in our BTM model, the dependent variable is total permanent BTMs, while in Tang & Firth's (2011) model, the dependent variable is total BTMs, for comparison purpose, both total BTMs and permanent BTMs as dependent variable in Tang & Firth's (2011) model is applied. As we can see from the Table 5.6, our model has a smaller sum of squares between predicted ABTMs and actual ABTMs, which indicate our BTM model is more accurate in measuring the level of tax aggressiveness.

Table 5. 6: Sum of Squares between predicted ABTMs and actual ABTMs

	Sum of squares
Tang & Firth's (2011) model with total BTMs	0.007408921
Tang & Firth's (2011) model with total permanent BTMs	0.000872256
Our BTMs model	0.0000507

5.5.2 The explanatory power of tax management and earning management

The raw BTM is not a pure measure of tax avoidance, with the residual approach applied in BTMs model, the ABTMs can be argued to be a function of earning management and tax avoidance. Following the approach of Tang & Firth (2011), we estimate the relationship between absolute ABTMs derived from our BTMs model and the incentives for earning management (EM) and tax management (TM) using set of variables that are proxy for various EM and TM incentives from Tang & Firth (2011)'s model. TM incentives variable is ATR is the applicable tax rate for the sample listed firms disclosed in the tax notes, EM incentives variables include SEON which is a dummy variable that equals to 1 when consolidated entity has a rights issue or public offering in year t+1 and 0 otherwise, and LOSS which is also a dummy variable that equals to 1 when a consolidated entity has a loss in the current year t and 0 otherwise. TM and EM variable is the SOELG which is a dummy variable that

equals to 1 when a consolidated entity is a state-owned enterprise controlled by a central or local government and 0 otherwise.

Table 5.7 represents the extent to which different factors affect ABTDs derived from our BTDs model. The results from the four models indicate that EM account for 0.76 percent of ABTDs, TM explain 1.6 percent of ABTDs, and the combined EM and TM incentives explain 2.26 percent of ABTDs. The results are consistent with tax and non-tax cost literature review that TM and EM are dependent and interactive (Tang & Firth, 2011), and suggest that ABTDs account more for tax sheltering activities than earning management, as a result, in the next two chapter, EM variable will be included in regression to control for effects of earning management.

Table 5. 7: The explanatory power of earning management and tax management

Factors	Model	Adjusted R ²
EM factors (SOEN,LOSS)	$ABTD = \alpha_0 + \sum EM + \varepsilon$	0.76%
TM factors (ATR)	$ABTD = \alpha_0 + \sum TM + \varepsilon$	1.6%
Combined TM/EM factors (SOELEG)	$ABTD = \alpha_0 + \sum TM/EM + \varepsilon$	2.26%
EM, TM and EM/TM factors	$ABTD = \alpha_0 + \sum EM + \sum TM + \sum TM/EM + \varepsilon$	4.68%

5.6 Shareholders' valuation of corporate tax planning

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 section, we look for the association between ABTDs 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 and also is relevant for the further studies in next two empirical chapters.

The empirical model in this section is based on a standard valuation model used in the accounting literature, An OLS regression was applied to test the association between market values of firms and the proxy for tax aggressiveness while controlling for firm-specific characteristics and corporate governance factors. The data set used for the main analysis was unbalanced panel of 1080 firm-year observations for the period 2006 to 2012, in consistent with sample selection in Chapter 4. The measure of 'tax aggressiveness' applied in this section is initially derived from discussion above, it is accepted this proxy is an imperfect measure and can introduce measurement error problems to the analyses, although prior studies have provided evidence about the book-tax differences as a proxy for tax aggressiveness (e.g. Mills, 1998; Manzon & Plesko, 2002; Wilson, 2009). Data on financial statements and corporate governance are collected from the CSMAR database with WIND database as a complement.

We employ several market-related valuation proxies taken from prior literature, including Tobin's Q, cash flow capacity and return volatility 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'Q⁸ is included with its definition of q is discussed below. The risk factor, the variability in monthly

⁸Tobin's Q (TOBINQ1) that is applied for the main regressions in Table 5.8 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 in Table 5.8. For robustness check, we also repeat all the regressions using industry-adjusted Tobin's Q ratio (Wu *et al.* 2012; Firth *et al.*, 2013), Our findings are unaffected.

return of firms for year t, which captures aspects of a firm's underlying economic fundamentals such as firm-specific risk (Comprix, Graham & Moore, 2011); while the cash flow capacity is proxy for firms' profitability, not only earning but also cash flows is of significance to shareholders. The control variables are mainly related to agency costs and information asymmetry as well as several firm-specific characteristics in line with taxation literatures (Jimenez-Augueira, 2007; 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). We also include the year and industry effects and use robust standard errors by clustering on each firm (Petersen, 2009; Chen & Al-Najjar, 2012) in order to correct for potential heteroskedasticity and potential time series dependence within firm observations. The initial model (1) incorporating the proxy for tax planning and related control variables as follows:

$$\text{Tobin's } Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + \text{YEAR} + \text{IND} + \varepsilon_{it} \text{ (Model 1)}$$

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:

$$\text{Tobin's } Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + \beta_9 INST_{it} + \beta_{10} INDEP_{it} + \beta_{11} OC_{it} + \text{YEAR} + \text{IND} + \varepsilon_{it} \text{ (Model 2)}$$

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.

$$\text{Tobin's } Q_{it} = \alpha_{it} + \beta_1 \text{ABTD}_{it} + \beta_2 \text{LEV}_{it} + \beta_3 \text{EM}_{it} + \beta_4 \text{LOSS}_{it} + \beta_5 \text{LNTA}_{it} + \beta_6 \text{DP}_{it} + \beta_7 \text{ROE}_{it} + \beta_8 \text{CAPINT}_{it} + \beta_9 \text{INST}_{it} + \beta_{10} \text{INDEP}_{it} + \beta_{11} \text{OC}_{it} + \beta_{12} \text{ABTD} * \text{INST}_{it} + \beta_{13} \text{ABTD} * \text{INDEP}_{it} + \beta_{14} \text{ABTD} * \text{OC}_{it} + \text{YEAR} + \text{IND} + \varepsilon_{it} (\text{Model 3})$$

In each of the above models, both the ABTDs derived from BTDS OLS and fixed-effect regressions has been employed, but the main analysis we discuss will focus on ABTDs from fixed-effect model. The regression results for ABTDs from OLS model will also be presented (See Table 5.10) as both of them produce similar results. The regression results of the three models are reported in Table 5.7. The level of multi-collinearity was assessed and the test shows the levels were acceptable. 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 $\text{ABTD} * \text{ABTD}$, the inclusion of this quadratic tax planning variables did not change the results reported previously (See Table 5.8).

Model 3 incorporate ⁹ 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 that moderating corporate governance variables with ABTDs contribute little in terms of their additional explanatory power when comparing the adjusted R² 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. 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).

⁹The 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 $Q_{it} = \alpha_{it} + \beta_1 ABTD_{it} + \beta_2 LEV_{it} + \beta_3 EM_{it} + \beta_4 LOSS_{it} + \beta_5 LNNTA_{it} + \beta_6 DP_{it} + \beta_7 ROE_{it} + \beta_8 CAPINT_{it} + \beta_9 TR_{it} + \beta_{10} TR*ABTD_{it} + YEAR + IND + \epsilon_{it}$. Due to the insignificance of the variable of interest TR*GOV, the regression results are not reported)

Table 5. 8:Regression estimations for shareholder valuation of tax aggressiveness

	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			The inclusion of ABTD square term	
			High institutional ownership	Low institutional ownership			
Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Dependent variables	TOBINQ 1	TOBINQ 1	TOBINQ1	TOBINQ 1	TOBINQ 1	TOBINQ1	TOBINQ1
ABTD	-0.225*** (-3.54)	-0.186*** (-3.16)	-1.31*** (-3.80)	-0.235** (-2.55)	-0.058 (-1.12)	-0.186*** (-3.02)	-0.147*** (-2.69)
ABTD*ABTD						0.137** (2.31)	0.137** (2.25)
LEV	-0.731*** (-3.65)	-0.9*** (-4.18)	-0.66*** (-3.63)	-1.54*** (-4.54)	-0.046 (-0.26)	-0.662*** (-3.23)	-0.852*** (-3.94)
EM	0.046 (0.12)	0.192 (0.52)	-0.02 (-0.26)	0.019 (0.03)	0.891* (1.96)	0.09 (0.24)	0.224 (0.62)
LOSS	0.363** (2.07)	0.238*** (3.22)	0.263*** (3.3)	0.719*** (4.24)	-0.06 (-0.15)	0.297* (1.93)	0.165* (1.75)

LNTA	-0.341*** (-7.28)	-0.367*** (-6.52)	-0.434*** (-8.74)	-0.337*** (-4.31)	-0.409*** (-8.44)	-0.341*** (-7.74)	-0.352*** (-6.67)
DP	0.007*** (3.77)	0.006*** (3.2)	0.04** (2.07)	0.007*** (3.87)	0.012 (0.6)	0.005*** (3.61)	0.005*** (2.99)
ROE	3.58*** (7.18)	2.87*** (6.36)	1.93*** (4.7)	3.75*** (5.68)	1.91*** (3.66)	2.95*** (6.43)	2.23*** (5.31)
CAPINT	-0.221 (-1.49)	-0.301** (-1.99)	-0.304** (-2.10)	-0.305 (-1.44)	-0.047 (-0.30)	-0.152 (-1.03)	-0.237 (-1.58)
INST		0.966*** (7.99)	1.01*** (7.99)				0.95*** (7.98)
INDEP		-0.047 (-0.14)	-0.126 (-0.34)				-0.07 (-0.25)
OC		-0.858*** (-4.03)	-0.849*** (-4.27)				-0.927*** (-4.31)
INST*ABTD			-0.663*** (-2.76)				
INDEP*ABTD			1.525* (1.94)				
OC*ABTD			1.39*** (3.26)				
Intercept	4.685*** (9.72)	5.41*** (11.23)	6.10*** (12.44)	4.89*** (6.05)	5.424*** (10.29)	4.67*** (10.31)	5.32*** (11.85)
Observations	663	641	644	379	284	663	644
R-square	0.459	0.525	0.577	0.513	0.502	0.48	0.547
Year dummies	controlled						
Industry dummies	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. Variable definitions: $ABTD_{it}$ are derived from fixed-effect BTDs model in previous section, figures in $ABTD_{it}$ are all multiplied by 100 for scale effects; $TOBINQ_{it}$ is measured as market value A divide by the ending total assets; OC_{it} is the ownership concentration, $INST_{it}$ is the institutional shareholding; $INDEP_{it}$ is the percentage of directors who are independent; LEV_{it} is the leverage ratio; $LOSS_{it}$ 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; EM_{it} is the earning management measure which is calculated as profit before tax-operating cash flow; $LNTA_{it}$ is log of the total assets at the fiscal year-end t; ROE_{it} is return on equity which is proxy for firm profitability; DP_{it} is the dividend payout ratio which is calculated as the dividends per share divide by earning per share; $CAPINT_{it}$ 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.

Regression results for the level of operating cash flows(CFO) and stock return volatility (VOL) as a dependent variable in model 1 respectively, is a further supplement study to the firm value of Tobin's Q. In consistent with the negative relationship between tax planning and firm value, the operating cash flows is also reducing with the increasing aggressive tax activities, while the positive relationship between stock return volatility and the proxy for tax planning suggests increased uncertainty of market participants regarding managers' behaviors in tax planning activities as well as the information conveyed in financial reports (Comprix, Graham & Moore, 2011).

Table 5.9: Other measures of firm performance where ABTD is the residuals from fixed-effect model

Year	2006-2012	2006-2012
Method	OLS	OLS
Dependent variables	CFO	VOL
ABTD	-0.139** (-2.04)	0.014** (2.39)
LEV	-0.632*** (-3.22)	0.098*** (3.58)
EM	0.09 (0.19)	0.193*** (3.96)
LOSS	0.112 (0.55)	0.018 (0.66)
LNTA	-0.324*** (-5.64)	-0.059*** (-8.13)
DP	0.006*** (3.67)	-0.004* (-1.77)
ROE	2.07*** (3.19)	0.138** (2.18)
CAPINT	-0.027 (-0.16)	0.05** (2.35)
Intercept	4.62*** (8.13)	0.931*** (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. ABTD_{it} are derived from fixed-effect BTDs model in previous section, figures in ABTD_{it} are all multiplied by 100 for scale effects; CFO_{it} is the cash flow capacity measured as cash flow from operating activities divide by ending total assets; VOL_{it} is the volatility of monthly return which measure total risk associated with a firm's stock price.

Table 5. 10: Robustness tests using ABTD from OLS model

						High institutional ownership	Low institutional ownership		
Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Dependent variables	TOBINQ1	VOL	CFO	TOBINQ1	TOBINQ1	TOBINQ 1	TOBINQ 1	TOBINQ1	TOBINQ1
ABTD	-0.189*** (-2.89)	0.015** (2.13)	-0.123* (-1.65)	-0.163*** (-2.73)	-1.14** (-2.53)	-0.197** (-2.14)	-0.057 (-0.90)	-0.178*** (-2.67)	-0.149*** (-2.57)
ABTD*ABTD								0.046 (0.77)	0.054 (0.96)
LEV	-0.817*** (-3.83)	0.101*** (3.73)	-0.682*** (-3.36)	-0.976*** (-4.30)	-0.869*** (-4.29)	-1.700*** (-4.67)	-0.051 (-0.29)	-0.802*** (-3.73)	-0.965*** (-4.24)
EM	-0.105 (-0.25)	0.199*** (4.12)	0.006 (0.01)	0.066 (0.17)	-0.203 (-0.48)	-0.122 (-0.19)	0.862* (1.92)	-0.133 (-0.32)	0.034 (0.09)
LOSS	0.322* (1.89)	0.022 (0.77)	0.083 (0.42)	0.198*** (2.77)	0.212*** (2.83)	0.677*** (4.01)	-0.071 (-0.18)	0.31* (1.87)	0.18** (2.38)
LNTA	-0.425*** (-10.53)	-0.05*** (-7.54)	-0.377*** (-6.97)	-0.433*** (-8.98)	-0.46*** (-9.90)	-0.427*** (-6.87)	-0.429*** (-8.39)	-0.418*** (-10.52)	-0.421*** (-9.11)
DP	0.006*** (3.77)	-0.004* (-1.79)	0.006*** (3.66)	0.006*** (3.18)	0.005*** (2.6)	0.007*** (3.88)	0.012 (0.58)	0.006*** (3.76)	0.06*** (3.16)
ROE	3.93*** (7.12)	0.124** (2.04)	2.27*** (3.28)	3.12*** (6.36)	2.38*** (5.5)	4.25*** (5.91)	1.91*** (3.73)	3.77*** (6.97)	2.92*** (6.00)
CAPINT	-0.196 (-1.34)	0.048** (2.25)	-0.011 (-0.06)	-0.286* (-1.90)	-0.297** (-1.96)	-0.273 (-1.31)	-0.04 (-0.26)	-0.196 (-1.34)	-0.29* (-1.94)
INST				0.984*** (8.06)	0.992*** (7.96)				0.986*** (8.01)
INDEP				0.008 (0.03)	0.013 (0.04)				-0.035 (-0.10)

OC				-0.904***	-0.901***				-0.929***
				(-4.12)	(-4.24)				(-4.19)
INST*ABTD					-0.491				
					(-1.58)				
INDEP*ABTD					1.36				
					(1.33)				
OC*ABTD					1.08**				
					(2.23)				
Intercept	5.53***	0.873***	5.14***	6.09***	6.39***	5.84***	5.63***	5.46***	5.99***
	(13.27)	(11.99)	(9.82)	(14.3)	(14.39)	(8.96)	(10.46)	(13.24)	(14.74)
Observations	663	641	663	644	644	379	284	663	644
R-square	0.448	0.71	0.289	0.519	0.539	0.505	0.501	0.49	0.52
Year dummies	controlled								
Industry dummies	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. ABTD_{it} are derived from OLS BTDs model in previous section, figures in ABTD_{it} are all multiplied by 100 for scale effects; other variable definitions follow table 5.9)

5.7 Conclusion

Managers in firms would face the tradeoffs between tax costs and non-tax costs such as financial reporting costs when making financial and tax reporting decisions. 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). Evidence based on U.S. data shows that BTDs can detect earning management in some settings (Phillips *et al.* 2003) and BTDs are also a good indicator of tax aggressiveness (Frank *et al.* 2009; Wilson, 2009; Tang & Firth, 2011).

This study extends the existing literature in China with its unique institutional characteristics that are different from those in the developed world. For example, the changes in China's tax regime has potentially provided firms with incentives to engage in tax and earning management. 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). It should be recognized that it is difficult to measure corporate tax planning and different measures have their own strengths and weaknesses and none are inferior or superior to the other. To our knowledge, this is the first such dataset applied in the tax literature in Chinese context.

The evidence from our modeled regression is consistent with the view that a small number of mechanical factors are responsible for a significant amount of book-tax differences, which account for around 45 percent of the differences between financial and tax reporting. This study also provides insight into the policy debates with regard to book-tax conformity. Institutional mechanical

differences are still the major differences between accounting law and tax rules, increasing the extent of conformity between accounting income and taxable income can be argued as a way of preventing both tax aggressiveness and earning management, and also as a way to reduce financial costs and tax costs. These empirical evidences provide new insights to help explain the informational content of book-tax differences.

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. Then we will use the refined decomposition of tax liability to examine the effect of corporate governance mechanisms on the abnormal BTDs in the following two empirical chapters. However, there remains more research to be done into the nuances of book-tax relationship, such as the detailed analysis of particular industries (e.g. financial and insurance industries) with more homogeneous financial and tax reporting, modeling specific type of expense and income items for the accruals process of two rules in order to have a better understanding of both the origin of these differences (Manzon & Plesko, 2002). No measure can be perfect, in order to prove that the resulting residual is a good proxy for the firm's tax planning activity, a validation check can be taken use the sample of firms that are involved in ligation in terms of aggressive tax sheltering activities (Graham & Tucker, 2006; Desai& Dharmapala, 2009; Frank *et al.* 2009); However, due to the confidentiality of tax data in China, we cannot obtain the list of listed firms that are accused for engaging in aggressive tax sheltering, therefore, this can be one limitation of our study. Residual approach conducted by Desai & Dharmapaala, 2006, 2009) and Frank *et al.* (2009) are based on U.S. financial data, which we cannot apply for comparing their ability to explain tax sheltering activity with our BTD model's ability directly, therefore only theoretical arguments were derived.

The study also 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 would be further studied in the next two empirical chapters. 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),

6.0 Controlling block-holders, institutional investors and tax aggressiveness of Chinese listed firms

6.1 Introduction

Tax aggressiveness is broadly defined as an activity where transactions are made with the aim to increase either after-tax income or after-tax cash flow. Prior research examine the extent to which tax disclosure contain information about earning information and suggest that book-tax income differences (BTDs) relating to both firm's earnings quality and operating performance (e.g. Philips *et al.*, 2003; Lev and Nissim, 2004; Hanlon, 2005, Blaylock *et al.* 2012), certain economic characteristics and firm valuation (e.g. Donohoe & McGill, 2011) as well as to mechanical differences between financial reporting standards and tax laws. Shelvin (2002) argues that the growing BTDs may be caused by the increased tax aggressiveness behaviors. This chapter examines how of the complex corporate ownership in China affects tax reporting practices of listed firms. A growing line of literature has looked at ownership structure and corporate governance mechanisms in China (Shleifer & Vishny, 1997; Gul *et al.* 2010; Badertscher *et al.* 2013). Yet limited research has examined the role of ownership structures on tax reporting practices of listed firms in China (Zheng & Han, 2009; Zeng, 2010; Wu, *et al.* 2012a; Wu, Rui & Wu, 2013). This study is motivated by the growing importance of the role that China plays in world economy, which provides a unique institutional setting to examine the effect of strength of political connections vs. market forces on the tax reporting practices of Chinese listed firms. The governance of China's SOEs is subject to both market and non-market forces such as government interventions and political connections in China's emerging economies (Fan, Wong & Zhang, 2007). It is argued that political connections constitute a valuable source of firm value (Fisman, 2001; Leuz & Oberholzer-Gee, 2006). The positive effects that derived from government-related benefits including bank loans, favorable tax treatments and market power (Fisman, 2001; Adhikari *et al.*, 2006; Claessens *et al.* 2008). It is emphasized by prior studies that the effects of political connections are most pronounced in countries with

weak legal enforcements, inefficiencies of independent institutions to monitor government and high levels of corruption (e.g. Agrawal & Knoeber, 2001; Fisman, 2001; Faccio, 2006; Claessens *et al.* 2008). Therefore, it is expected that government control and political connections still play a significant role in the Chinese market, despite the significant progress has been made on the reforms of social and economic systems over the past two decades. This is due to the fact that a majority of the Chinese listed firms are spin-offs from wholly state owned firms, which has discussed in previous section. The state (central, city and regional governments, associated departments and ministries, and SOEs) often retain a substantial investment in the spin-off listed firms. State ownership represents a strong form of political connection and a more direct tie with the government than having connected managers (Wu, Wu, Zhou & Wu, 2012). The significance of political connections as a factor of tax aggressiveness has attracted growing research interest (Adhikari et al, 2006; Faccio, 2006; Wu, Wu, Zhou & Wu, 2012; Chan, Mo & Zhou, 2013). For example, Adhikari et al (2006) find that firms with political connections in Malaysia pays tax at significant lower effective tax rates than other firms, which further suggest the importance of political connections as a determinant of tax reporting practices in relationship-based economies. In our study, two different types of political connections commonly found in China are examined. They are political connections through controlling shareholder and connections through the state ownership. From another perspective, market-oriented forces resulting from regulatory change can also affect corporate governance and firm performance (e.g. Mar & Young, 2001). Since the implementation of market-wide reforms, in particular, the split-share structure reform, we can evaluate whether market forces represented by institutional ownership play an important role on the tax aggressiveness in the process of market development, although China's economy is still under government interventions. Thus, China's institutional setting is particularly conducive to observe the effects of political connections intertwining with market-oriented forces in the adoption of tax reporting practices during the transition period. Meanwhile, the development of the accounting and tax

system in China provides a unique research setting, and the study will highlight some aspects of tax management in China.

Our study makes several contributions to the existing literature. Firstly, this study adds to extant literature by addressing the relationship between ownership control and tax strategies from a different perspective, namely, an agency perspective within the Chinese institutional framework, examining the tax aggressiveness as an indication of the agency problem faced by listed firms. It is argued that the root causes of tax aggressiveness in China arise from the conflict of interests between controlling ownership and minority shareholders (Ding, Zhang & Zhang, 2007). This study attempts to link ownership structure of listed firms with their tax aggressive behaviors; given that ownership structure is identified as the primary determinant of agency costs. Government shareholding of most listed firms is traditionally a typical phenomenon in most emerging economies, with the on-going process of market-oriented reforms in these economies, our empirical results should contribute to investors' understanding of accounting and management behaviors in Chinese listed firms and serve as a reference for emerging economies to improve their tax compliance. Secondly, this study adds to the mostly U.S.-based BTD literature by providing international empirical evidence on the implications of the regulatory and opportunistic sources of BTDs for interpreting the influence of political forces, market forces and their interaction on tax aggressiveness. Our results provide evidence that political connections are an important determinant of corporate tax planning in a 'relationship-based' economy.

The remainder of this chapter is organized as follows. Section 6.2 discusses the relevant institutional background in China. Section 6.3 reviews literature and develops the hypotheses. Then the next section 6.4 describes data and designs models for the empirical tests. Section 6.5 presents the results and sensitivity results. Finally, a conclusion and summary is presented in section 6.6.

6.2 Institutional Background

6.2.1 Split share structure reform

The split share structure reform of China that started in 2005 marks a major change upon the institutional setting of the Chinese stock market (Cumming & Hou, 2012). Historically, China's stock market is characterized by a high level of ownership concentration and a low level of marketability. Historically, A unique institutional feature of China that was different from those of other countries was the split share structure (or called a two-tier share structure), which refers to the presence of both tradable shares and non-tradable shares although both types of shares have the same cash flow and voting rights but with different tradability (Zou *et al.* 2008). Prior to the split-share structure reform as of February 2005, non-tradable shares accounted for two-thirds of the total A-shares outstanding and were mainly controlled by the various levels of Chinese governments and legal persons, with the remaining shareholding held by a large numbers of individuals and some financial institutions. In China, the top 10 shareholders are normally the state and legal person for most listed firms. The aim of this split share structure was designed to significantly constrain the tradability of shares held by state and legal persons in order to give government absolute control over the partially privatized companies in stock markets while improving the performance of SOEs with market mechanisms at the same time. This unique split share structure can induce conflicts of interests between tradable and non-tradable shareholders as well as divergent interests, which has long been recognized as the main cause of many corporate governance problems in China (see Chen, Firth, Gao & Rui, 2006, Chen, Firth, Xin & Xu, 2008).

It is argued by Shleifer & Vishny (1997) and Claessens & Fan (2002) that the expropriation of smaller shareholders by the largest shareholders is the main agency problem in Asian emerging markets, which indicate that the controlling shareholders of Chinese listed firms may use their control rights for tunneling, for example, controlling shareholders are provided with incentives to transfer cash from listed firms via cash dividends (Chen, Jin & Yuan, 2011).

Wei & Geng (2008) provide evidence that such a split share structure has created severe agency problems between the controlling non-tradable shareholders and other tradable shareholders due to the misalignment between risk sharing and exercise of control by non-tradable shares. On the one hand, managers of the non-tradable shares controlled firms have greater incentive to act in the best interests of state or legal persons due to weak managerial incentives faced by them and their political appointments; on the other hand, a lack of common interest for market disciplines and shareholder value maximization resulted in agency problem between holders of tradable shares and non-tradable shares, as non-tradability may induce non-tradable shareholders to expropriate firm resources for their private interests. Aharony, Wang, and Yuan (2010), Jian & Wong (2010) and Jiang *et al.* (2010) provide evidence that listed firms can benefit the controlling shareholders at the cost of smaller shareholders through related party transactions. Meanwhile, Yu *et al.* (2006) find that controlling shareholders use false information disclosure to engage in earning manipulation in order for compliance with CSRC's profitability requirements.

In order to solve the governance problems, a split share structure reform program was initiated by the Chinese government in April 2005, with the aim of converting non-tradable shares into tradable shares. It is worth noting that, conversion from all non-tradable shares to tradable can have a huge downward price pressure to the existing tradable shares due to the increased liquidity and extra supply of tradable shares in the market, non-tradable shareholders are required to compensate tradable shareholders in order to make their shares tradable in the future (Firth, Chen & Zou, 2010). With the exception of the compensation plan, the reform had very little direct immediate impact on the structure of the Chinese stock market in the short run.

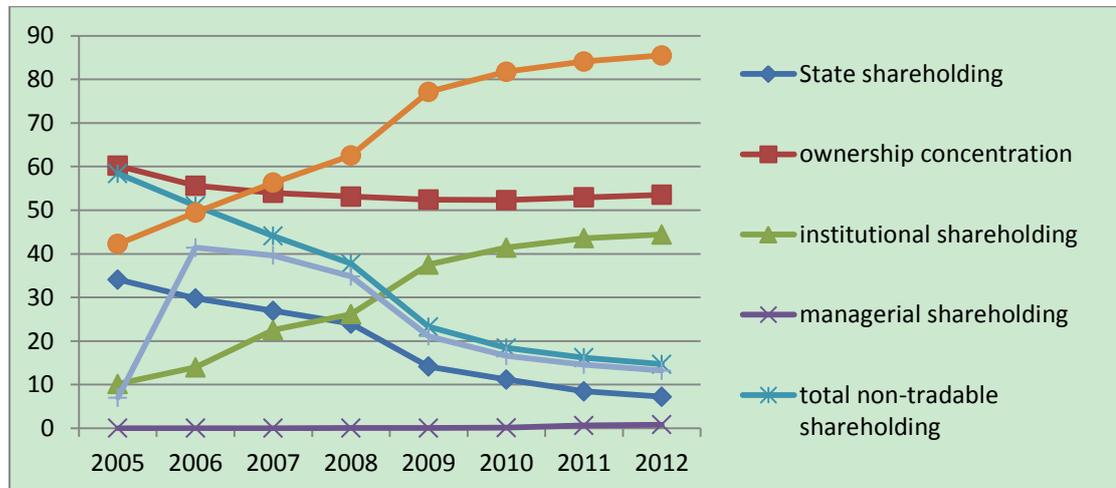
According to *The Measures for the Administration of the Share-Trading Reform of Listed Companies*, there is a compulsory 12-month lockup period to restrict holders of non-tradable shares from selling their shares after the reform plan becomes effective for each participant firm. In addition, non-tradable

shareholders are only allowed to sell, at most, 5 percent (10 percent) of the shares outstanding within 12 (24) months after the lockup period (Liao, Liu & Wang, 2011).

It can be expected that the impact of this reform to be more pronounced among Chinese firms controlled by state ownership, since it enhances the incentives of the dominant shareholders to monitor and ensure firm value maximization by managers and it is of interest to examine the effect of different types of ownership structure on the tax reporting practices of listed firms in China after the split share structure reform.

The figure 6.1 illustrate how the ownership structures of the Chinese listed firms have evolved over time since the year 2005 when the split share reform started to the year 2012. It is clearly that the proportion of state ownership as well as total non-tradable shareholding consistently decreased from 2005 to 2012, which is consistent with the changing policies of Chinese government to divert more of state shares since the split share structure reform that was effective in 2005. Meanwhile, it is worth noting that the proportion of tradable shares increase significantly since the 2005 with the restricted shares decrease over time simultaneously, reflecting the role of split share structure reform. The proportion of the managerial ownership and the institutional ownership was very low initially and increase consistently over time, which is in consistent with the growing number of mutual fund and securities firms associated with the latter.

**Figure 6. 1: Evolvement of ownership structure for Chinese listed firms
(In percentage)**



6.3 Literature review and Hypothesis

Managers are provided with incentives for diversification or activities that reduce shareholder value, given the separation of ownership and control, but managers would be pressured by large shareholders to reduce diversification and increase economic performance. Therefore, the identity of the owners of a firm has implications for the objectives of a firm and the way managers exercise their power. In our study, in terms of the research question at hand, state ownership and ownership concentration represent a strong form of political connection and a more direct tie with Chinese government while institutional ownership represents the form of market forces.

6.3.1 State ownership and tax aggressiveness

A special feature of the corporate ownership structure in China is the existence of non-tradable shares including shares owned by the state to retain control over listed firms which are classified as state shares and legal person shares. The non-tradable shareholders are entitled with exactly the same cash flow and voting rights but with restriction on public tradability even if the firm is

listed. Meanwhile, they are provided with the controlling power to direct and influence the decision-making of the firms, with their wealth is irrelevant to the market price of tradable shares (Tong, Zhang & Zhu, 2012). Despite the non-tradable shares reforms during the recent decade, the majority of Chinese listed firms are still closely linked to the government. The largest and the controlling shareholder for Chinese listed firms is most likely a large SOEs or central/city government, which can largely influence managerial decisions through its shareholding and political power (Liu & Lu, 2007; Lo *et al.* 2010).

Empirical evidences suggest state ownership was not an effective governance mechanism in China due to inefficient monitoring and operation¹⁰, low managerial incentives and higher agency costs (Xu & Wang, 1999; Chen & Al-Najjar, 2012). The presence of state shareholding can be problematic due to several reasons (Jiang,Laurenceson&Tang, 2008). Firstly, the government shareholding can lead to inefficiencies such as lack of incentives to minimize costs (Shleifer&Vishny, 1997) and complicate the usual principal-agent problem due to the social and political objectives (e.g. maintaining level of employment) of government shareholding are conflicted with minority shareholders (e.g.maintaining level of employment) of government shareholding are conflicted with minority shareholders (e.g. profit maximization). Secondly, the status of their non-tradability precludes an outside market in corporate control (e.g. takeovers) and opportunistic behaviors have been widespread within listed firms (Yenug, 2009).

Several studies examined the influence of state shareholding on tax strategies and offered divergent conclusion. On the one hand, it is argued that managers of government-controlled firms may have different tax objectives compared

¹⁰The behaviors include: 1) transferring and appropriating company's profit and assets through unfair related party transactions; 2) neglecting conflict of interest and engaging in self-dealing in pursuit of private gains; 3) cheating on profit level to meet public offering requirements; 4) manipulating IPO and secondary market prices; 5) trading on insider information; 6) engaging in deceiving public investors for private gains through outright misrepresentation; 7) developing connections by using companies' resources. (Yenug, 2009:p10)

with their counterparts (Crocker & Slemrod, 2005; Zeng, 2010; Wu, Wang, Gill & Luo, 2012; Chan, Mo & Zhou, 2013). As managers in government-controlled firms are appointed and evaluated by the government (Kato & Long, 2006a.b), state ownership provide them with incentive to pursue social and political objectives besides objective of maximization of after-tax profits. Cao and Zhang (2008) and Zeng (2010) find that management in firms with higher state shareholding are less aggressive in tax reporting in order to obtain a good reputation of more tax payments to get promoted and a promising political career. Wu *et al.* (2007) and Wu, Wang, Gills & Luo (2012) do not find a significant relationship between state shareholding and tax burdens; however, the effect of firm size on effective tax rate depends on the nature of the controlling shareholder.

On the other hand, managers of government-controlled firms are more likely to maximize corporate resources under their control through aggressive tax strategies by taking advantage of their political connections (Cull & Xu, 2005; Faccio, 2006), which may in turn increase managerial compensation through its impact on firm value (Bushman *et al.* 2004; Wang, Wong & Xia, 2008). For example, Adhikari *et al.* (2006) find that firms in Malaysia with higher state shareholding pay less tax due to benefits from their political connections. Kim and Zhang (2013) also shows that political connections are positively associated with aggressive tax planning, due the fact that lower cost of tax aggressiveness such as reduction in the probability of tax planning being detected by related administrators and a lesser need for financial transparency via political connections (Leuz & Oberholzer-Gee, 2006; Yu & Yu, 2011). Therefore, it is possible that the cost of tax planning is lower and the benefit is higher for politically connected firms than for that of counterparts.

The argument for the influence of political influence on corporate tax aggressiveness is inconclusive and leads to our first hypothesis:

H1: State ownership is associated with tax aggressiveness of Chinese listed firms.

6.3.2 Ownership concentration and tax aggressiveness

Large controlling shareholders typically can exercise control power through their concentrated ownership over major corporate decisions including tax strategies and directly engage in the managerial process. There are two counteracting effect of ownership concentration on corporate governance (La Porta *et al.* 1999; Claessens *et al.* 2002). First, an incentive alignment effect. Concentrated ownership can serve to align the interests between controlling and minority shareholders in countries with a less developed legal and institutional environment (Shleifer and Vishny, 1986; Lins, 2003). Second, an entrenchment effect. The controlling shareholders are provided incentives to transfer cash flows from the firm at the expense of minority shareholders (Claessens *et al.* 2002; Fan and Wong, 2002; Johnson *et al.* 2000). Empirical studies apply the ownership concentration as a proxy for the monitoring strength (e.g. Wright *et al.*, 1996) and find a negative relationship between managerial opportunistic behaviors and ownership concentration. In view of the unique institutional environment in China, the widespread concentration of state ownership in Chinese listed firms induces more entrenchment effect and less incentive alignment effect, which in turn lead to weak corporate governance and low transparency (e.g. Ding, Zhang & Zhang, 2007; Gul, Kim, and Qiu, 2010).

Prior literature provides mixed results on the association between ownership concentration and the level of tax aggressiveness. On the one hand, firms in countries with higher ownership concentration are provided with incentives of tax aggressiveness as they have lower non-tax costs and may be more tax aggressive because large shareholders can effectively monitor and incentivize managers to generate more tax savings (Desai & Dharmapala, 2008; Zeng, 2010;). In this case, ownership concentrated firms are more concerned with tax saving strategies in order to benefit themselves. On the other hand, firms in countries with higher ownership concentration may be less tax aggressiveness due to implementation costs and agency costs involved (Chen *et al.* 2010). In firms with highly concentrated ownership structure, the large shareholders will

have incentive to monitor managers' behaviors including their tax-saving activities due to the significant costs associated with risky tax planning activities and to ensure that managers behave in ways that benefit shareholders (Firth *et al.* 2007a,b; Badertscher *et al.* 2013). Therefore, we test the following hypothesis:

H2: Ownership concentration is associated with tax aggressiveness of Chinese listed firms.

6.3.3 Institutional ownership and tax aggressiveness

Institutional shareholding is considered as good for overall corporate governance practices, due to the active role of monitoring and disciplining managerial opportunism as well as improvement of information efficiency that play in the capital market (Bushee, 1998, 2001; Gillan & Starks, 2000; Wei, Xie & Zhang, 2005). It is often been assumed that all institutional shareholder are equal in their monitoring role, however, the power of institutional investors is partially a function of the size of their individual or collective shareholding (Maug, 1998; Chung *et al.* 2002). When institutional investors have high shareholdings, they will typical hold for a longer period of time and have greater incentives to monitor managers' actions. When shareholdings are low, they often invest for short-term horizons and have less incentive for them to monitor managerial opportunism, as they can liquidate easily or sell off their investment shares in response to unfavorable performance. In the similar vein, it is argued by Gasper *et al* (2005) that investment horizon of shareholders affects managerial decisions in corporate control events and weak monitoring role of short-term investors facilitate managers to trade-off interests of shareholders for personal benefits. The presence of asymmetry in the effectiveness of monitoring role indicates that 'active monitoring' institutional investors potentially with longer investment horizon and lower monitoring costs often exert more influences than other block-holders (Bushee, 1998, 2000). The 'short-termism' institutional investors are more emphasis on short

term performance, and trade heavily based on current earnings; therefore fail to serve as effective monitors (Laverty, 1996; Koh, 2003; Callen & Fang, 2013), Yan and Zhang (2009) provide evidence that short-term institutional shareholders are better informed and actively trade to exploit their informational advantages for self-interests than long-term institutional shareholders. If this is true, it is expected that concentrated shareholding in the hands of institutional investors is likely to reduce accounting quality. Koh (2007) also provides evidence that aggressive earning management among firms that manage earnings to meet earnings targets is constrained by long-term institutional investors but no such relationship holds for short-term institutional shareholding. Chung *et al.* (2002) find that large institutional shareholding in a firm prevents managers from in pursuit of opportunistic earning management through discretionary accrual choices. Prior empirical studies find that the practices of tax aggressiveness are related to the representation of active institutional shareholders, although the results are mixed (Koh, 2003; Park & Shin, 2004; Wong *et al.* 2009). Moore (2012) analyzes the impact of institutional ownership on the level and time-series variability in book-tax differences among US firms and show that institutional ownership is negatively associated with book-tax differences. In contrast, Khurana & Moser (2013) find that U.S. firms with higher institutional ownership which also have higher ownership concentration are generally more tax aggressiveness. However, this finding is driven by firms with higher levels of short-term institutional investors, which is claimed to typically influence firms to promote short-term market value as opposed to long-term profitability and are more likely to push managers to invest in projects with greater expected near-term earnings (Laverty, 1996; Bushee, 1998, 2001; Gasper *et al.* 2005), whereas firms with higher institutional investors with longer-term investment horizon are more concerned about long-term consequences of tax aggressiveness owing to a long lag between the design/implementation of tax transactions and detection by the IRS (Khurana & Moser, 2013) and thus are less tax aggressive.

On balance, it is clear that large institutional shareholders have become

increasingly active in corporate governance and corporate decisions. Tax aggressiveness may not increase shareholder value or firm value, for example, more aggressive tax behaviors can cost firm value in the long-term in terms of increased probability of a tax auditing which lead to additional taxes, penalties and fined by tax administrations (Mills, 1998). On the one hand, institutional investors may effectively discipline and monitor managers in order to ensure that they maximize long-term firm value by constraining tax aggressiveness; on the other hand, institutional investors may influence managers to be more tax aggressiveness with an effort to maximize after-tax cash flow or after-tax earnings, as these institutional investors have a focus on short-term firm performance and induce managers to boost short-term earnings. Due to lack of consensus, we examine the relationship between tax aggressiveness and institutional ownership but do not predict the direction of the association. Therefore, our third alternative hypotheses are formally stated as follows:

H3: Institutional ownership of a firm in China is related to its level of tax aggressiveness.

6.4 Regression models for hypothesis testing

We test a multivariate regression specification to examine the relationship between the various proxies of ownership structure and the level of tax aggressiveness. α_{it} is the constant term capturing the fixed effect and the coefficient β captures the effects of independent variables on listed firms' level of tax aggressiveness, ε_{it} is an error term. Residuals from the BTDs model in previous chapter 5 are abnormal BTDs which will be regressed on a set of variables in the following equations. The first two equations test Hypothesis 1, the equation 3 tests hypothesis 2 and equation 4 tests hypothesis 3. Equation 5, 6 and 7 are designed to examine the interaction between market forces (INST) and government-related interventions (OC, STA and GOV) on the level of tax aggressiveness. The effects of ownership shareholding are studied in separate regressions as these shareholdings are highly correlated and severe

multicollinearity will be present if both are included in one regression (Wei, Xie & Zhang, 2005).

The basic specifications are as follows:

$$ABTD_{it} = \alpha_{it} + \beta_1 OF_STA_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (1)$$

$$ABTD_{it} = \alpha_{it} + \beta_1 GOV_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (2)$$

$$ABTD_{it} = \alpha_{it} + \beta_1 OC_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (3)$$

$$ABTD_{it} = \alpha_{it} + \beta_1 OF_INST_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (4)$$

$$ABTD_{it} = \alpha_{it} + \beta_1 OC + \beta_2 OF_INST_{it} + \beta_3 OC_{it} * OF_INST_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (5)$$

$$ABTD_{it} = \alpha_{it} + \beta_1 OF_INST_{it} + \beta_2 GOV_{it} + \beta_3 INST_{it} * GOV_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (6)$$

$$ABTD_{it} = \alpha_{it} + \beta_1 OF_INST_{it} + \beta_2 OF_STA_{it} + \beta_3 INST_{it} * OF_STA_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} (7)$$

Where:

$ABTD_{it}$ is the residual BTDs derived from BTM model in chapter five, scaled by total assets

OC_{it} is the ownership concentration which is calculated as the percentage of shares held by the largest ten shareholders over the total outstanding shares

OF_STA_{it} is the state shares fraction which is the percentage number of state shares as well as legal person shares over total outstanding shares.

OF_INST_{it} is the institutional share fraction which is the level of total institutional shareholding over total outstanding shares

GOV_{it} is an indicator variable equal to 1 when the largest shareholder is government-related, and 0 otherwise

Control variables are a set of control variables

YEAR and IND are year and industry dummy variables

¹¹Each of the models is deflated to control for any scale effects (Akbar & Stark, 2003). The reported results are based on OLS estimation with presence of dummy variables. One possible problem in panel data estimation across years is that error terms for a given firm-year observation are correlated across years, therefore, we use robust standard errors by clustering on each firm (Petersen, 2009; Chen & Al-Najjar, 2012), in order to correct for potential heteroskedasticity and potential time series autocorrelation within firm observations.

6.4.1 Ownership variables

We include a set of variables that are likely sources of book-tax differences or incentives to invest in tax planning. Here we include indicator variables ownership concentration (OC_{it}) and ownership share fraction (OF_{it}), which are our main variables of interest. Ownership concentration (OC_{it}), on the one hand, plays a significant role in alleviating information asymmetry and improving corporate governance effectiveness (Shleifer and Vishny, 1997). On the other hand, however, it is argued by Shleifer and Vishny (1997) the ownership concentration may result in expropriations of other minority stakeholders by the largest shareholders. Most Chinese listed firms have a

¹¹The application of difference-in-differences methods has become very widespread for estimation of causal effects, which measure the effect of a treatment for two groups for two time periods (Cameron & Trivedi, 2009; Lechner, 2011). It is often used to measure change induced by a particular treatment or event and difference-in-difference estimator represent the difference between pre- and post-differences of the treatment and control groups, in this study, is the change in accounting policy that was effective in 2008. With unbalanced panel data from 2006 to 2012, I compare changes in outcomes for group affected by tax reform that was effective in the year 2008 with changes in outcome for groups not affected by tax reform. TR is a dummy variable with 1 stands for period 2008 to 2012 and 0 stands for period 2006 to 2007, which is the equivalent of 'treatment', and GOV is a dummy variable with 1 stands for government-related firms and 0 stands for non-government-related firms, which is the equivalents of 'control groups', capture the possible difference between treatment and control groups. The interaction term (TR*GOV) between TR and GOV, is our main variable of interest, which is the same as a dummy variable equal to one for those government-related firm observation in the treatment group in the period 2008-2012. The model is as follows, $ABTD_{it} = \alpha_{it} + \beta_1 GOV_{it} + \beta_2 TR_{it} + \beta_3 TR_{it} * GOV_{it} + \text{control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it}$. Due to the insignificance of the variable of interest TR*GOV, the regression results are not reported.

dominant shareholder and will have greater influences with the increase in number of shares they owned. We therefore examine whether the proportion of shares owned by the largest shareholders has an influence on the manipulation of tax planning.

The variable ownership share fraction (OF_{it}) can be applied to test the influence of different level of ownership structure that are typical of Chinese listed firms on tax aggressiveness in China respectively, namely, in our study, state ownership plus state-owned legal person shareholding (OF_STA_{it}), the percentage of institutional investors shareholding (OF_INST_{it})¹² and the percentage of mutual funds shareholding (OF_FUND_{it}). As the proportion of ownership held by the above different level is obviously correlated, so we test their effect on tax aggressiveness separately. GOV_{it} is a dummy variable which is equal to 1 when the largest shareholder is government-related institution and 0 otherwise. These two measures OF_STA_{it} and GOV_{it} examine the extent of influence of government on a firm.

6.4.2 Firm-specific Characteristics

In addition to test the association between types of ownership structure and aggressive tax activities, we also control for year-fixed effects, industry-fixed effects and several additional firm-specific characteristics that the prior literature (e.g., Manzon and Plesko, 2002; Rego, 2003; Mills, 1998; Dyreng *et al.*, 2008; Frank *et al.*, 2009; Chen *et al.*, 2009; Zeng, 2010; Khurana & Moser, 2013) suggest that could be associated with aggressive tax reporting to capture unobserved heterogeneity across firms so as to ensure that the results are not driven by fundamental differences among the level of ownership structure. As

¹²Institutional shareholding disclosed in Chinese stock market including shareholding held by mutual funds, insurance companies, securities companies, wealth management products, QFII, pension funds, financial companies, trust companies, banks and the general legal persons. In this study, the $INST_{it}$ is measured as the total institutional shareholding minus the general legal persons shareholding.

indicated by Marra *et al.* (2011), failure to control for potentially confounding factors may result in a misleading interpretation of results.

We include variables commonly found in the tax literature that affect costs, benefits and opportunities of firms to engage in tax sheltering activities. We include $LOSS_{it}$ and LEV_{it} to controls for a firm's need to tax planning. 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, Lin & Mo, 2010; Tang & 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. we use 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, Maydew & Shevlin, 2008; Wilson, 2009; Frank, Lynch & Rego, 2009; Armstrong, Blouin & Larcker, 2012), which is measured as total liabilities divided by total assets. This is due to the fact that firms have less incentives to tax planning with greater leverage arise from the associated tax benefits of debt financing such as interest on borrowing is tax deductible (Stickney & McGee, 1982; Porcano, 1986). Meanwhile, leverage could imply the increasing monitoring by debt-holders and managers are also concerned with increased financing reporting costs associated with tax savings (Zeng, 2010). A higher non-tax cost of conforming book income will be associated with a tax aggressiveness position given the higher leverage, and thus a negative relationship between leverage and aggressiveness can be expected (Chan, *et al.* 2010). However, due to the mixed empirical evidences on the relationship between leverage and BTDs in prior literature (Mills & Newberry, 2001; Frank *et al.* 2009; Moore, 2012), therefore, we make no prediction about the sign of the coefficient on LEV_{it} .

In addition, market value of equity, all in natural logarithm ($SIZE_{it}$) is added to capture changes in the scale or size of the firm and also proxy for the benefits of tax sheltering (Jiang, Lee & Anandarajan, 2008; Wilson, 2009; Armstrong, Blouin & Larcker, 2012; Tang & Firth, 2012; Khurana & Moser, 2013). The impact of firm size on tax aggressiveness is inconclusive, on the

one hand, larger firms have higher political pressure to be less aggressive, and on the other hand, larger firms may take advantage of greater political influence and are better able to enjoy tax benefits (Wu, Wang, Gills & Luo, 2012). Dyreng *et al.* (2008) find that long-run tax sheltering is positively associated with firm size. Larger firms are more likely to have a sophisticated internal tax department, given the presence of economies of scale of tax planning (Armstrong, Blouin, & Larcker, 2010). Capital intensity ($CAPINT_{it}$), which is measured as fixed assets divided by total assets, is added to control for the opportunities related to investments in fixed assets, and can affect book-tax differences through its accelerated depreciation relative to its actual lives of assets (Porcano, 1986; Gupta & Newberry, 1997; Mills & Newberry, 2001; Phillips, 2003; Frank *et al.* 2009; Lin, Lu & Zhang, 2012; Wu, Wang, Gills & Luo, 2012; Wu, Rui & Wu, 2013). Capital-intensive (CAPINT) firms are more influenced by the differences in financial reporting and tax treatments of depreciation.

The other variables are related to firms' financial performance, ROE_{it} is added to control for firm's profitability because growing and profitable firms are more likely to make larger investments in depreciable assets. Therefore, the overall firm performance is controlled and the specific effects of tax management is teased out by inclusion of variable ROE_{it} (Hanlon, Maydew & Shevlin, 2008; Chen, Chen, Cheng & Shelvin, 2010; Armstrong *et al.* 2012; Khurana & Moser, 2013).

Finally, measure for earning management (EM_{it}) is added to control for Chinese listed firms' engage in earning management for financial reporting purpose, due to the fact that ABTD can be indicative of earning management and tax management of the Chinese listed firms (Mills & Newberry, 2001; Phillips *et al.* 2003; McGill & Outslay, 2004; Hanlon, 2005; Frank, Lynch & Rego, 2009; Tang & Firth, 2011; Firth, Lo & Wong, 2013). The study conducted by Phillips *et al.* (2003) find firms' management of their book income in order to avoid reported losses, which in Chinese listed firms, Jiang & Wang (2008) find that percentage of firms with small profits is significantly

higher than that of firms with small losses, which further provide evidence on Chinese listed firms' engagement in earning management (Firth, Lo & Wong, 2013); meanwhile, it is regulated by CSRC (2001) in terms of delisting and trading restrictions that losses for three consecutive years cannot be reported by Chinese listed firms in case of their shares being suspended and delisted. As a result, there is propensity for Chinese listed firms to report positive earning to avoid delisting (Tang & Firth, 2011). Therefore, it is necessary to control for earning management as it can give rise to similar differences in examining effects of BTDs (Phillips, Pincus & Rego, 2003; Hanlon, 2005; Wahab & Holland, 2012). We do not predict the sign for control variables including LEV, ROA and SIZE as prior studies do not have consistent results (Gupta & Newberry, 1997; Wu, Wang, Lin & Li, 2007; Zeng, 2010).

6.4 Data collection and preliminary results

Data on financial statements and ownership structure are collected from the CSMAR database, while the information about different types of ownership structure is collected from both CSMAR database and WIND database. The data set used for the main analysis was unbalanced panel of 1080 firm-year observations for the period 2006 to 2012, in consistent with sample selection in Chapter 4.

Table 6.1: Summary statistics for variables in the ABTD model

Panel A: Descriptive statistics

Variables	Obs.	Mean	Std. Dev	Min	Max
ABTD	958	0	0.008	-0.055	-0.030
OC	1051	0.636	0.178	0.148	1.018
STA	1048	0.200	0.248	0	0.863
INST	1024	0.169	0.179	0	0.882
FUND	944	0.133	0.158	0	0.774
GOV	1010	0.846	0.361	0	1
LEV	1054	0.519	0.200	0.014	1.376
LOSS	1073	0.072	0.259	0	1
SIZE	1040	10.026	0.061	8.486	12.700
ROE	1044	0.078	0.334	-8.889	0.662
EM	1054	-0.063	0.099	-0.453	0.905
CAPINT	1054	0.305	0.210	0	0.861

Panel B: Pearson Correlations Matrix

	ABTD	OC	STA	INST	FUND	GOV	LEV	LOSS	SIZE	ROE	EM
OC	0.161										
STA	0.105	0.316									
INST	-0.095	0.096	0.205								
FUND	-0.129	0.066	0.247	0.879							
GOV	0.150	0.167	0.314	-0.006	-0.078						
LEV	0.132	0.013	-0.063	-0.031	-0.012	-0.005					
LOSS	-0.087	-0.065	0.031	-0.123	-0.117	0.026	0.166				
SIZE	0.172	0.490	0.239	0.287	0.278	0.209	0.036	-0.147			
ROE	0.082	0.082	-0.004	0.135	0.133	-0.042	-0.134	-0.367	0.126		
EM	0.194	-0.035	-0.075	-0.079	-0.065	-0.055	0.097	-0.192	-0.113	0.109	
CAPINT	0.049	0.228	0.163	0.016	-0.007	0.187	-0.090	0.125	0.163	-0.038	-0.352

Panel C: Firms' applicable tax rates

Year	Nominal tax rate	Total firms	Number of firms with applicable tax rate lower than nominal tax rate	percentage of firms with applicable tax rate lower than nominal tax rate
2006	0.33	105	53	0.505
2007	0.33	126	56	0.444
2008	0.25	155	68	0.439
2009	0.25	169	73	0.432
2010	0.25	194	76	0.392
2011	0.25	192	72	0.375
2012	0.25	132	30	0.227
Total		1073	428	0.399

Table 6.1 provides the descriptive statistics of all major variables. All variables are stationary¹³ based on the Augmented Dickey-Fuller and Phillips-Perron unit root tests. Pearson correlation among explanatory variables is presented in Panel B. Both of the state shareholding and government-related firms dummy variable are positively correlated with ABTDs, which is different from Ding, Zhang & Zhang (2007); Zeng (2010); Tang & Firth (2011) and suggests the need for further analysis. Because no correlation coefficient between independent variables is greater than 0.8 and Variance Inflation Factors (VIFs) are relatively low and smaller than 10, it can be concluded that the issue of multi-collinearity problems is unlikely to be present in the regression models (Gujarati, 2009). Furthermore, it is indicated by Firth, Fung & Rui (2007a,b) that the endogeneity issue of ownership is less of a concern due to the fact that dominant owners are usually selected by the state, subsequent transfers of the dominant shareholding are relatively rare and state's approval is required.

A new Enterprise Income Tax Law (EIT Law) that general tax rate 25 on company profits was effective in January 2008, However, the effect of new EIT Law on Chinese listed firms would depend on firms' prior statutory tax rate (Yin & Cheng, 2004; Lin, Lu & Zhang, 2012). For firms with a statutory tax rate that is higher than the new income tax rate of 25 percent would be expected to be tax planner before the implementation of the New EIT law. However, managers' strategies on book income and taxable income management may not always be preferred by firms due to the various conflicts among stakeholders. It shows that, on average the applicable tax rate (ATR) is 23 percent, which is much less than the nominal rate of 33 percent (25 percent since 2008). Panel C of Table 1 shows firms' applicable tax rate in each year from 2006 to 2012. Since 2006, the number of firms that enjoy preferential rates has been reduced to 23 percent; this reduction is consistent with the change in tax policy discussed in Chapter 3. Overall, almost two-fifths of the sample observations in our study have ATRs lower than 33 percent (25 percent since 2008). The maximum ATR of a firm is greater than one, it is

¹³The results for unit root tests are not reported to conserve space

possible for a number of reasons, one reason may arise from the process of consolidation within a group of subsidiaries or associated firms with their net operating profits are combined net operating losses of those subsidiaries or associated firms (Adhikari *et al.* 2006).

Table 6.2 shows the mean differences tests. It shows that government controlled firms have slightly higher ownership concentration and much higher state shareholding compared to private investor controlled firms. The sample mean tests of ABTD by firm control type, high-low ownership concentration, and high-low institutional ownership show that firms under government control or exhibit high ownership concentration are more tax aggressive than their counterparties. Firms with high mutual funds shareholdings are less tax aggressive than those with low mutual funds shareholdings.

Table 6.2: Mean differences tests

Variables	Government-related firms (GOV=1)	Non-government-related firms (GOV=0)	Difference
ABTD	0.121	-0.073	-0.194***
OC	0.651	0.568	-0.083***
STA	0.237	0.019	-0.218***
Variables	High ownership concentration (OC>64%)	Low ownership concentration (OC<64%)	Difference
ABTD	0.095	-0.091	-0.186***
Variables	High institutional shareholding (INST>11%)	Low institutional shareholding (INST<11%)	Difference
ABTD	-0.036	0.032	0.068
Variables	High mutual fund shareholding (FUND>7%)	Low mutual fund shareholding (FUND<7%)	Difference
ABTD	-0.027	0.061	0.088***

High and low ownership concentration and institutional shareholdings are defined by being above or below their median value. ***1% significance

6.5 Regression results

6.5.1 Ownership structure and tax aggressiveness

As discussed in Chapter 3, decision-makers in firms need to take into account the tradeoff between the benefits and costs associated with determining the level of tax aggressiveness (Chen, Chen, Cheng & Shevlin, 2010). Benefits associated with effective tax management include greater tax savings and rent extraction for decision-makers at the cost of shareholders; while in terms of costs, there are not only potential penalties by tax departments but also significant non-tax costs such as implement costs, price discount imposed by other shareholders in the case of rent extraction (Desai & Dharmapala, 2006). As a result, the choice to engage in opportunistic behaviors depends on tax and non-tax cost consideration as well as on incentives of managers.

The sample goes down to only around more than 900 observations due to missing values for ABTDs from BTDs model and some control variables. Overall, the R-square for the models ranges from 16 percent to 21 percent, suggesting that the magnitude of ABTDs can capture the reporting distortions induced by incentives of managers in response to Chinese institutional setting, after controlling for the mechanical misalignments between accounting and tax rules. Our main results reflect tests of H1, H2 and H3 are shown in Table 6.3, and Table 6.3 shows the results from models 1 through 7.

In terms of our hypothesis 1, the coefficients on STA and GOV are of interest. Although we make no prediction regarding the relationship between ABTD and the state ownership, Model 1 of Table 6.3 shows that the variable STA has a significant positive coefficient ($p < 0.01$) which shows there is a strong significant relationship between state shareholding and the level of tax aggressiveness. This is consistent with model 2 result when we replace STA with the dummy variable for government control GOV. The coefficient on GOV is also positive and significant at the 0.01 level, its coefficient suggests that on average, the abnormal book-tax differences is higher by 21.5 percent for government-controlled firms than for non-government-related firms, thus

they have strong incentives for tax management, the evidence is consistent with Adhikari *et al.* (2006) and Tang & Firth (2011) and Wu, Wu Zhou & Wu (2012), but is in contrast with study of Cao & Zhang (2008); Zheng & Han (2008) and Zeng (2010). One explanation would be that managers in government-related firms or firms with a higher state shareholding still have incentives to tax planning in an effort to increase their accounting-performance-based compensation, to attract foreign investment and to obtain permission to issue additional shares in the equity markets (Chen, Chen, Lobo & Wang, 2011). However, the reality of political connections as a possible factor in the tax reporting practices of Chinese listed firms needs to be recognized. As discussed above, multi-dimensional perspectives of political connections existed in the context of Chinese 'relationship-based' economy where the connections are based on informational ties between firms and politicians (Adhikari *et al.* 2006; Wu, Wu, Zhou & Wu, 2012; Ma, Ma & Tian, 2013). Political connections can be translated into government support for a range of overlapping reasons, while the percentage of state shareholding in a firm (STA) or the government involvement in the firm (GOV) represent a strong form and a more direct tie with the Chinese government and can be viewed as a proxy for government support. Government involvement is associated with institutional environment in China (Wu, Rui & Wu, 2013). Managers are provided with incentive to be more tax aggressive than their counterparts, in order to take advantage of these tax benefits from governments, such as lower possibility of tax audits and penalties being imposed for tax evasions (Faccio, 2006; Li *et al.* 2006; Claessens *et al.* 2008; Faccio, 2010; Wu, Wu Zhou & Wu, 2012). Most of prior studies such as Ding, Zhang & Zhang (2007), Wu, Wang, Gills & Luo (2012) find a negative relationship between the high level of state ownership and tax planning in China, which suggest that the associated political goals and social objectives such as tax revenue maximization and unemployment settlement with state ownership, in order to make managers themselves in these firms promoted, resulting in less incentives to engage in tax planning activities.

For hypothesis 2, Model 3 of Table 6.3 shows that, ownership concentration (OC)¹⁴ has a significant positive ($p < 0.01$) association with the level of tax aggressiveness as expected in line with prior studies such as (Liu & Lu, 2007; Zeng, 2010). It does support the argument that entrenchment effect are expected to dominate the alignment effect in Chinese context, and indicate that large shareholders in firms with highly concentrated ownership will have sufficient incentive to exercise control and power over managerial process including their tax-saving activities that they are concerned, thus increasing monitoring costs, which is an inefficient corporate governance strategy in Chinese market with weak legal protection of minority shareholders. Meanwhile, it also suggest that large shareholders in Chinese listed firms have ties with government through political connections, which can be utilized to help firms to obtain government-related resources and supports such as tax-benefits (Zeng, 2010; Wu, Wu, Zhou & Wu, 2012), in line with our hypothesis 1 test results considering the government as major block-holders of the majority of listed firms in China.

Finally, in terms of hypothesis 3, the coefficient on INST, which is proxy for market forces, is of interest. The coefficient on institutional ownership (INST) is negative and statistically significant at the 0.01 level; suggest that firms with higher level of total institutional ownership generally report lower ABTDs. In other words, firms with greater institutional ownership are less tax aggressive after controlling for other factors that affect tax sheltering activities, in consistent with study of Moore (2012) and Khurana & Moser (2013). The results provide evidence on decrease in information asymmetry between shareholders and managers by the higher level of institutional ownership and the greater external monitoring by institutional investors on managerial reporting decisions. Model 5 further focuses on mutual funds as the most important institutional investors and shows that the result shows a consistent

¹⁴Ownership concentration exclude the largest one shareholding is reconsidered, that is the ownership concentration from top2 to top 10 shareholding, and our results are unaffected.

positive sign but larger coefficient on FUND, which suggests the greater active monitoring of management by mutual fund investors.

6.5.2 Interaction between political forces and market forces

In model 6-11, we further add three interaction terms OC*INST, OC*STA and INST*GOV as an independent variable respectively where appropriate to examine the relative strength of government association versus institutional investors influence on tax aggressiveness. We notice that with presence of the interaction variables, the coefficients on these variables are still positive. In contrast, the coefficient on INST and FUND are still negative and highly significant. Such results generally indicate that the institutional investors exert effective constraint on firm tax aggressive strategies and can mitigate the associated risks of a firm utilizing its political connections for aggressive tax avoidance. This finding also supports the promotion of institutional investors as monitoring agencies for corporate governance and minority interest protection in China. We also re-estimate the respective models using mutual fund shareholding (FUND) for robustness tests, new results are qualitatively equivalent to the previous results.

In sum, empirical results shows that the tax reporting practices could also be driven by government control and government interests in China, a country which is similar to other emerging economies in its lack of full market competition and democratization. It provides implications for firms that they should integrate political behaviors and market strategies effectively, and balance the relationship between political behaviors and the market-oriented strategies. Firms with political connections should not ignore the improvement of their market orientation.

6.5.3 Effects of control variables.

We discuss the effects of the control variables on the level of tax aggressiveness in this section. Several control variables¹⁵ are also significant. Table 6.3 shows that the coefficients for *LEV*, *EM*, *SIZE* and *CAPINT* are statistically significant across model 1 through 7.

The coefficient on *LEV* (leverage ratio) is positive and statistically significant at the 0.01 level, indicating that as long-term debt to total asset ratio increases, our sample firms experience higher abnormal permanent book-tax differences, in consistent with studies of Frank, Lynch & Rego (2009) and Chen, Chen, Cheng & Shevlin (2010) that highly leveraged firms may benefit from deductions in interest expenses compared to their counterparts. In addition, the coefficient of *CAPINT* (capital intensity) is significantly positive, suggesting that capital-intensive firms, proxied by a higher ratio of fixed assets to total assets, have more opportunities in selection of differing estimates and methods for purpose of depreciation expenses calculation, tend to have higher positive abnormal book-tax differences, which is in consistent with study of Mills & Newberry (2001), Chen, Chen, Cheng & Shelvin (2010) and Lin, Lu & Zhang (2012).

In terms of firm size (*SIZE*), the coefficient is positive and significant, larger firms are more likely to be subject to political costs in terms of political cost hypothesis (Watts & Zimmerman, 1986) as they are more subject to scrutiny

¹⁵For robustness test, the control variables *CFO*, measured as operating cash flow for firm *i* in year *t* scaled by the ending total assets, Change in sales growth (*GSALE*) which is measured as the difference between current sales and the prior year's sales over the prior year's sales as well as book to market ratio and Book to market ratio (*BM*) which is calculated as ending total assets divided by market Value are added respectively in order to ensure that ensure that the main results are not driven by the omission of a control variable. The results are virtually identical to those reported in Table 6.6, which indicate that our main empirical results are not affected by whether the model includes a control for cash flows or growth. In addition, as tax incentives of firms' tax sheltering activities are highly correlated with its financial performance, we employ different financial measures in the regression models, including *ROA* and Tobin's *Q* to test our hypotheses sequentially (instead of *ROE*), the results remain consistent with previous findings, albeit weaker.

and may have larger and more sophisticated tax departments (Yin & Cheng, 2004). If this is true, by taking advantage of the scale and scope of operations, larger firms tend to have greater and better opportunities to engage in tax-planning activities relative to the other firms in their industries (Phillips, 2003; Jiang, Lee & Anandarajan, 2008; Wilson, 2009, Chen, Chen, Cheng & Shevlin, 2010; Khurana & Moser, 2013). More importantly, a firm's propensity to engage in book-tax non-conforming strategies is in part determined by earning management strategies, after controlling for the measure of earning management (EM) with adjustments on operating cash flow, the effects predicted by H1, H2 and H3 remain significant. No significant relationship between LOSS, ROE and abnormal BTDs is found in this study.

Table 6.3: Estimated regression results for ownership structure and tax aggressiveness

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STA	0.325*** (2.58)					0.186 (1.08)	0.260* (1.67)				
GOV		0.215*** (2.75)						0.043 (0.44)	0.119 (1.30)		
OC			0.483*** (2.67)							0.267 (1.27)	0.133 (0.65)
INST				-0.797*** (-5.01)		-0.983*** (-4.55)		-1.469*** (-3.91)		-1.556** (-2.52)	
FUND					-1.080*** (-5.52)		-1.432*** (-5.24)		-1.421*** (-3.61)		-2.848*** (-4.40)
STA*INST						0.727 (1.09)					
STA*FUND							1.092 (1.43)				
INST*GOV								0.870** (2.16)			
FUND*GOV									0.567 (1.29)		
OC*INST										1.186 (1.29)	
OC*FUND											2.750*** (2.93)
LEV	0.750*** (5.11)	0.732*** (4.93)	0.719*** (4.90)	0.705*** (4.76)	0.740*** (4.71)	0.703*** (4.73)	0.732*** (4.69)	0.701*** (4.72)	0.736*** (4.67)	0.685*** (4.62)	0.692*** (4.36)
EM	2.081*** (5.56)	2.147*** (5.66)	2.184*** (5.78)	1.943*** (5.26)	1.940*** (5.34)	1.890*** (5.19)	1.877*** (5.33)	1.932*** (5.20)	1.922*** (5.23)	2.041*** (5.51)	2.084*** (5.70)
ROE	0.149 (0.93)	0.161 (1.04)	0.137 (0.86)	0.179 (1.15)	0.031 (0.26)	0.186 (1.17)	0.036 (0.32)	0.191 (1.22)	0.038 (0.33)	0.176 (1.11)	0.027 (0.23)

LOSS	-0.066 (-0.47)	-0.019 (-0.13)	-0.034 (-0.24)	-0.067 (-0.47)	-0.047 (-0.30)	-0.090 (-0.63)	-0.081 (-0.51)	-0.050 (-0.35)	-0.046 (-0.29)	-0.063 (-0.44)	-0.044 (-0.28)
CAPINT	0.424*** (2.73)	0.448*** (2.89)	0.405*** (2.64)	0.433*** (2.83)	0.295** (2.08)	0.447*** (2.93)	0.312** (2.21)	0.418*** (2.72)	0.292** (2.04)	0.418*** (2.76)	0.292** (2.07)
SIZE	0.181*** (3.78)	0.209*** (4.01)	0.148*** (3.03)	0.331*** (6.52)	0.338*** (6.31)	0.301*** (5.74)	0.310*** (5.78)	0.295*** (5.70)	0.292*** (5.39)	0.284*** (5.25)	0.308*** (5.41)
Constant	-2.425*** (-5.21)	-2.757*** (-5.38)	-2.175*** (-4.62)	-3.559*** (-7.16)	-3.573*** (-7.00)	-3.407*** (-6.76)	-3.473*** (-6.84)	-3.262*** (-6.43)	-3.262*** (-6.26)	-3.223*** (-6.34)	-3.331*** (-6.37)
Observations	944	903	943	924	856	924	856	899	833	924	856
R-squared	0.158	0.171	0.159	0.185	0.193	0.193	0.209	0.197	0.202	0.193	0.209

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 are as follows: $ABTD_{it}$ are abnormal BTDs derived from BTDs model in previous section, figures in $ABTD_{it}$ are all multiplied by 100 for scale effects; OC_{it} is the ownership concentration, STA_{it} is the state shareholding, $INST_{it}$ is the institutional shareholding, $FUND_{it}$ is the percentage of mutual funds shareholding; GOV_{it} is a dummy variable that is equal to 1 when the largest shareholder is government-related, and 0 otherwise; LEV_{it} is the leverage ratio; $LOSS_{it}$ 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; EM_{it} is the earning management measure which is calculated as profit before tax-operating cash flow; $SIZE_{it}$ is log of the market value of equity at the fiscal year-end t ; ROE_{it} is return on equity which is proxy for firm profitability; $CAPINT_{it}$ 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, coefficients on the year and industry dummies are not reported to conserve space.

6.5.4 Further analysis

To examine the robustness of our empirical results, we perform several sensitivity tests.

6.5.4.1 Ownership structure using beginning value (lagged value) and Difference-in-Difference approach

A caveat so far in our model is the potential endogeneity problems as limitations of hand collected sample prohibit us from using more complex dynamic models. We offer two robustness tests in Tables 6.4 and 6.5. Most prior studies use static models to test firm ownership structure and tax reporting practices (e.g. Chen *et al.* 2010; Zeng, 2010; Moore, 2012; Wu *et al.* 2012; Badertscher *et al.* 2013). One may expect their association to be lagged due to slower adjustments of tax strategies responding to ownership changes. In table 6.7, we use the lagged firm ownership variables to replace their contemporaneous terms used in Table 6.4 to rerun the regressions. Our findings are unaffected.

In table 6.5, we adopt a difference-in-difference approach by using the 2008 tax reform as a quasi-experiment to test difference in firm response to the tax reform. This method is often used to measure change induced by a particular treatment or event and the difference-in-difference estimator represent the difference between pre- and post-differences of the treatment and control groups. We follow An (2012) and define treatment firms as domestic enterprises who were subject to tax rate decrease in 2008 and control firms as foreign invested firms who were subject to tax rate increase in 2008. As 'additional notes to financial statements' were unavailable before 2006, we are unable to incorporate a longer pre-reform period. Never the less, our results reported in Table 6.5 support the findings reported earlier. We are particularly interested in the interaction of dummy variables $POSTREFORM * TREATMENT$ in model 1. The insignificant coefficient suggests that there is no difference between domestic enterprises and foreign invested enterprises response to the tax reform in terms of their tax

aggressiveness. In model 2, we further divide the domestic firms (the treatment group) into government controlled and private investor controlled firms. The coefficient on the interaction $POSTREFORM*TREATMENT*GOV_{now}$ shows the difference between government controlled domestic enterprises and private investor controlled domestic enterprises and it is significantly positive. Hence, we may conclude that the direction of tax rate changes as a result of the 2008 tax reform is not important for firm tax aggressiveness. In line with our earlier findings, what appears to be important for firm response to the tax reform is government association.

Table 6.4: Estimated regression results with lagged independent variables of interest

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
L.STA	0.343*** (2.97)					0.276* (1.78)	0.096 (0.64)				
GOV		0.215*** (2.75)						0.074 (0.72)	0.092 (0.96)		
L.OC			0.519*** (2.84)							0.328 (1.36)	0.040 (0.18)
L.INST				-0.766*** (-5.33)		-0.859*** (-4.25)		-1.155*** (-3.08)		-1.701*** (-3.25)	
L.FUND					-1.142*** (-6.43)		-1.622*** (-6.05)		-1.635*** (-3.88)		-2.999*** (-5.25)
L.STA*L.INST						0.363 (0.62)					
LSTA*L.FUND							1.551** (2.21)				
L.INST*GOV								0.567 (1.41)			
L.FUND*GOV									0.673 (1.48)		
L.OC*L.INST										1.385* (1.80)	
L.OC*L.FUND											2.834*** (3.35)
Observations	941	903	941	918	838	918	838	893	816	918	838
R-squared	0.159	0.171	0.160	0.186	0.218	0.195	0.234	0.192	0.228	0.200	0.234

The dependent variable is ABTD. Numbers in brackets are reported t-statistics based on robust standard errors. *, **, *** denote significance at 10%, 5% and 1%, respectively. Coefficients on the year, industry dummies, and the control variables are not reported to conserve space. Variable definitions follow Table 6.3

Table 6.5: Difference-in-Difference tests

Model	(1)	(2)
TR	-0.044 (-0.31)	-0.057 (-0.39)
TREATMENT	-0.144 (-0.85)	-0.144 (-0.84)
TR*TREATMENT	0.196 (1.13)	-0.091 (-0.42)
GOV*TR*TREATMENT		0.371*** (2.68)
LEV	0.849*** (4.89)	0.869*** (5.06)
EM	1.872*** (4.51)	1.885*** (4.55)
ROE	-2.284*** (-4.65)	-2.113*** (-4.41)
SIZE	0.291*** (4.96)	0.271*** (4.60)
LOSS	-0.580*** (-2.82)	-0.520** (-2.50)
Constant	-3.136*** (-5.73)	-2.980*** (-5.37)
Observations	777	745
R-squared	0.214	0.232

Note: The dependent variable is ABTD. Numbers in brackets are reported t-statistics based on robust standard errors. *, **, *** denote significance at 10%, 5% and 1%, respectively. Coefficients on the year and industry dummies are not reported to conserve space. Variable definitions follow Table 2. TREATMENT is a dummy variable which equals to 1 for domestic listed firms and 0 for foreign invested listed firms; TR is a dummy variable which equals to 1 for the period from 2008 to 2012 and 0 for the period from 2006 to 2007; GOV is a dummy variable which equals to 1 when the largest shareholder is the government or a government agency, and 0 otherwise.

6.5.4.2 Accounting for board characteristics and audit supervision

We carry out additional analyses by accounting for the internal monitoring role of the board of directors as well as auditor supervision in determining the book-tax differences. Auditors act as an important intermediary for the fair representation of financial information for users of financial statements. Audit fee is the fee disclosed in the proxy statement related to the financial statement in the fiscal year (Hanlon, Krishnan & Mills, 2012). It has been modeled as a function of audit risk, size and the complexity of the audit client (Simunic, 1980; Rainsbury, et al, 2009). The auditors would need to exert more efforts on firms with large book-tax differences if the latter is proxy for higher tax sheltering activities or greater complexity, which in turn increase the level of audit fees for these firms relative to the counterparties with smaller book-tax differences, holding all else constant (Hanlon, 2005; Donohoe & Knechel, 2009; Hanlon, Krishnan & Mills, 2012). Hanlon, Krishnan & Mills (2012) examine whether large book-tax differences are associated with higher audit fees and find a significant positive relationship between them, it is expected that audit fees to be higher in order to compensate for higher expected losses and higher audit efforts due to the risk of legal actions and/or loss of reputation (Krishnan & Visvanathan, 2008). Meanwhile, Donohoe & Knechel (2009) and McGuire, Omer & Wang (2012) find a positive relationship between the level of a firm's tax sheltering activities and audit fees. Audit standards have evolved rapidly although audit independence is quite new in China (Chen et al. 2006), the evidence from financial statements do support that the 'Big 4' international auditors are argued to provide high-quality and more independent audits than other counterparties, and high audit quality can detect and correct misconduct (e.g. Becker *et al.* 1998; Francis, 2004). Audit opinion can be viewed as a proxy for financial disclosure in constraining corporate aggressive tax activities, which examines the monitoring effect of corporate transparency of firms' financial statements in the context of corporate tax management practices, a unique setting in China where there is information asymmetry between managers and outside investors and opportunities for managers to exploit tax aggressiveness. Audit opinion and

audit fees are added in all the models as a proxy for auditor efforts and measurement of auditor risk (Wang, Wong & Xia, 2008), it focuses on how auditing as an outside government mechanism prevent corporate tax aggressiveness and the differences in effects between government-related firms and non-government-related firms. Audit opinion is a dummy variable which is equal to 1 if the audit opinion is standard unqualified and zero otherwise, and Audit fee is the natural logarithm of annual audit fee which the data were disclosed publicly (Wang, Wong & Xia, 2008). Big 4 auditors is a dummy variable which is equal to 1 if the firm is the client of Big 4 auditors and zero otherwise.

We further add the proportion of independent director on the board (INDEP), the size of board (BODSIZE), the CEO duality (DCEOD) and the total number of board meetings (BODMET) that a board of director conducted in a year, audit opinion (AUDOP), audit fees (AUDITFEE) and Big 4 auditors (BIG4) (Wang, Wong & Xia, 2008; Minnick & Noga, 2010; Lanis & Richardson, 2011). Overall, the R-square of the models and the results for the control variables closely resemble those reported in Table 6.3 and the inferences remain the same. The significantly positive relationship between tax aggressiveness and audit fees is consistent with our expectations, and it is of significance to strengthen audit supervision on tax activities in order to improve efficiency of audit supervision on tax aggressiveness. However, there is weak or insignificant relationship between audit opinion as well as Big 4 auditors and the level of tax aggressiveness, which suggest that auditors have relatively weak incentive to prevent the aggressive tax activities. In addition, there is only weak evidence of the relationships between board characteristics and tax planning; these results provide evidence that the main findings are not significantly affected by the inclusion of the variables that control for board of directors characteristics (e.g. internal monitoring).

Table 6.6: Further analysis that control for board characteristics and audit supervision

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STA	0.323** (2.40)					0.106 (0.61)	0.267 (1.62)				
GOV		0.245*** (2.93)						0.051 (0.50)	0.173* (1.80)		
OC			0.430** (2.21)							0.006 (0.03)	-0.103 (-0.47)
INST				-0.567** *		-0.861** *		-1.360** *		-2.359** *	
FUND					-0.455* (-1.74)		-0.793** (-2.27)		-0.622 (-1.37)		-3.137** *
STA*INST						1.302* (1.75)					
STA*FUND							0.970 (1.14)				
INST*GOV								1.019** (2.24)			
FUND*GOV									0.414 (0.85)		
OC*INST										2.817** (2.53)	
OC*FUND											4.204*** (3.65)
INDEP	0.434 (0.98)	0.398 (0.94)	0.560 (1.27)	0.391 (0.88)	0.060 (0.14)	0.198 (0.45)	-0.116 (-0.27)	0.278 (0.66)	-0.010 (-0.03)	0.344 (0.77)	-0.043 (-0.10)

BODSIZE	0.039***	0.037***	0.043***	0.042***	0.030**	0.040***	0.028**	0.039***	0.028**	0.048***	0.037***
	(2.82)	(2.63)	(3.16)	(3.06)	(2.24)	(2.91)	(2.10)	(2.79)	(2.01)	(3.40)	(2.66)
BODMET	-0.008	-0.004	-0.008	-0.008	-0.003	-0.007	-0.002	-0.004	0.001	-0.008	-0.004
	(-1.44)	(-0.67)	(-1.56)	(-1.43)	(-0.59)	(-1.33)	(-0.43)	(-0.64)	(0.13)	(-1.52)	(-0.74)
DCEOD	0.202	0.182	0.220	0.183	0.097	0.148	0.074	0.144	0.062	0.196	0.104
	(1.44)	(1.26)	(1.58)	(1.29)	(0.79)	(1.03)	(0.60)	(1.00)	(0.50)	(1.39)	(0.87)
AUDITFEE	0.223***	0.236***	0.211***	0.196***	0.158***	0.187***	0.149***	0.208***	0.175***	0.183***	0.145***
	(5.23)	(5.31)	(4.85)	(4.59)	(4.02)	(4.36)	(3.79)	(4.70)	(4.31)	(4.24)	(3.69)
AUDOP	0.399*	0.249	0.404*	0.371	0.094	0.386	0.103	0.243	-0.159	0.375	0.102
	(1.65)	(1.02)	(1.66)	(1.46)	(0.32)	(1.53)	(0.35)	(0.96)	(-0.97)	(1.48)	(0.34)
BIG4	0.032	0.021	0.020	0.007	0.069	0.034	0.089	0.029	0.095	0.017	0.080
	(0.45)	(0.30)	(0.27)	(0.09)	(0.94)	(0.47)	(1.21)	(0.41)	(1.31)	(0.24)	(1.10)
Observation	774	745	773	756	698	756	698	741	684	756	698
R-squared	0.218	0.229	0.217	0.223	0.285	0.235	0.299	0.244	0.306	0.237	0.306

Note: The dependent variable is ABTD. Numbers in brackets are reported t-statistics based on robust standard errors. *, **, *** denote significance at 10%, 5% and 1%, respectively. Variable definitions are as follows: BODSIZE_{it} is total number of directors on board; INDEP_{it} is the percentage of directors who are independent; BODMET_{it} is the total number of meetings a board of directors has conducted in a year; DCEOD_{it} is CEO-chair duality which is equal to 1 if the CEO and the chairman of the board is different person and 0 otherwise. AUDOP_{it} is the audit opinion, a dummy variable which is equal to 1 if the audit opinion is standard unqualified and 0 otherwise; AUDITFEE_{it}, logarithm of audit fee is the natural logarithm of annual audit fee which the data were disclosed publicly. BIG4_{it} is the big 4 auditors, a dummy variable which is equal to 1 if the firm is the client of big 4 auditors and zero otherwise. Coefficients on the year and industry dummies and the control variables are not reported to conserve space. Other Variable definitions follow Table 6.3.

6.5.4.3 Subsample of Positive and Negative ABTDs

It is documented by Mills (1998:p350) that limited the primary analysis to firms where book income exceeds taxable income, based on the assumption that BTDs "are the most 'suspicious' when book income exceeds taxable income". In consistent with this hypothesis, Mills (1998) finds that the extent of the BTDs is not associated with the proposed audit adjustments for firms with negative BTDs in its supplemental analysis. Therefore, It is possible that there might be less likely to engage in tax sheltering activities if measure of tax aggressiveness ABTDs is negative (Blaylock, Shevlin & Wilson, 2012). We extend this analysis to examine whether it is only positive ABTDs that are associated with tax sheltering activities, and the models will be re-estimated with positive and negative ABTDs (Table 6.7). Although the number of firm-year observations is different for each model, the significant association between tax planning and ownership structure variables of interest remains for firms with positive ABTDs, but there is also a significant relationship between some variables of interest and the magnitude of negative. However, it is worth noting the small sample size would significantly limit the power of this test.

Table 6.7: Further analysis: Estimated regression results for subsamples of ABTDs

Model	Positive ABTD (1)	Negative ABTD (2)	Positive ABTD (3)	Negative ABTD (4)	Positive ABTD (5)	Negative ABTD (6)	Positive ABTD (7)	Negative ABTD (8)	Positive ABTD (9)	Negative ABTD (10)	Positive ABTD (11)	Negative ABTD (12)
STA	0.217** (2.19)	0.071 (0.43)									0.198 (1.04)	-0.219 (-0.82)
GOV			0.022 (0.32)	0.235*** (2.86)								
OC					0.305** (2.01)	0.107 (0.49)						
INST							-0.166* (-1.91)	-0.310** (-2.01)			-0.092 (-0.84)	-0.413** (-2.00)
FUND									0.118 (0.55)	-0.875*** (-3.67)		
STA*INST											-0.108 (-0.26)	0.425 (0.77)
STA*FUND												
INST*GOV												
FUND*GOV												
OC*INST												
OC*FUND												
Constant	-1.127*** (-3.35)	-0.439 (-0.60)	-1.293*** (-3.45)	-0.453 (-0.60)	-0.897** (-2.57)	-0.429 (-0.59)	-1.599*** (-4.00)	-1.108 (-1.39)	-1.348*** (-3.41)	-1.274* (-1.72)	-1.428*** (-3.40)	-1.117 (-1.35)
Observations	515	429	495	408	514	429	502	422	472	384	502	422
R-squared	0.117	0.169	0.105	0.194	0.116	0.169	0.114	0.174	0.118	0.193	0.119	0.176

Model	Positive ABTD (13)	Negative ABTD (14)	Positive ABTD (15)	Negative ABTD (16)	Positive ABTD (17)	Negative ABTD (18)	Positive ABTD (19)	Negative ABTD (20)	Positive ABTD (21)	Negative ABTD (22)
STA	0.290* (1.94)	0.025 (0.15)								
GOV			0.056 (0.44)	-0.027 (-0.17)	-0.003 (-0.03)	0.114 (1.25)				
OC							0.480** (1.99)	-0.675* (-1.79)	0.353** (2.30)	-0.156 (-0.58)
INST			-0.115 (-0.46)	-0.756** (-2.58)			-0.044 (-0.17)	-1.807*** (-3.64)		
FUND	0.247 (0.79)	-1.210*** (-3.87)			-0.049 (-0.10)	-1.055*** (-2.68)			0.347 (0.40)	-1.948*** (-3.16)
STA*INST										
STA*FUND	-0.734 (-0.82)	1.177* (1.73)								
INST*GOV			-0.077 (-0.30)	0.649** (2.02)						
FUND*GOV					0.201 (0.38)	0.378 (0.91)				
OC*INST							-0.241 (-0.67)	2.207*** (3.13)		
OC*FUND									-0.360 (-0.28)	1.715* (1.86)
Constant	-1.335*** (-3.31)	-1.419* (-1.89)	-1.593*** (-3.94)	-0.770 (-0.92)	-1.281*** (-3.17)	-0.913 (-1.21)	-1.166*** (-2.85)	-0.858 (-1.06)	-0.869** (-2.04)	-1.412* (-1.91)
Observations	472	384	493	406	463	370	502	422	472	384
R-squared	0.127	0.205	0.114	0.207	0.117	0.219	0.128	0.193	0.127	0.199

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 follow Table 6.3. Results for year dummies, industry dummies and control variables are not reported to conserve the space.

6.5.4.4 Difference between local and central government

To further examine what are the incentives that drive managers of government-related firms to pursue aggressive tax activities, we perform additional tests for the government-related subsamples by comparing the results of the central government-related firms (GOVT=1) with those of local government-related firms (GOVT=0) (Chan, Mo & Zhou, 2013) where GOVT is an indicator variable. It is argued by Chan, Mo and Zhou (2013) that tax revenues collected from some central government-related firms and all local government-related firms are shared different level of government, and local governments can only take 40 percent of the tax revenues starting from 2002 (State Council, 2001). As a result, those respective local government-related firms are provided incentives to pay less tax in order to keep more corporate resources in its firms. The regression results in Table 6.8 show that there is no significant difference in tax planning between central and local government-controlled firms, except for the variables INST and MINST which are significant only for local government-controlled firms and the variable OC is significant only for central government-controlled firms. Due to the conflicting interests of OC and INST, it is indeterminate whether those local government-related firms evade taxes more than those of central government-controlled firms and it need to be acknowledged that the small sample size in this study also limits the power of these regressions.

Table 6.8: Further analysis for government-controlled firms, to control for difference between local and central government

Model	Government-controlled firms GOV=1				Central government-controlled firms GOVT=1				Local government-controlled firms GOVT=0			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
STA	0.125 (0.88)				0.316 (1.48)				0.005 (0.03)			
OC		0.607*** (2.82)				1.313*** (3.55)				-0.213 (-0.75)		
INST			-0.638*** (-3.66)				-0.304 (-1.26)				-0.524** (-2.00)	
FUND				-0.928*** (-4.10)				-0.454 (-1.39)				-0.905** (-2.48)
LEV	0.681*** (4.37)	0.642*** (4.10)	0.661*** (4.31)	0.716*** (4.46)	0.577** (2.13)	0.491* (1.83)	0.599** (2.19)	0.797*** (2.75)	0.395** (2.24)	0.413** (2.31)	0.364** (2.08)	0.422** (2.28)
EM	1.957*** (4.69)	2.102*** (5.01)	1.848*** (4.47)	1.767*** (4.45)	2.116*** (2.73)	2.012*** (2.75)	1.976** (2.52)	1.430** (2.00)	2.321*** (5.03)	2.239*** (4.59)	2.189*** (4.92)	2.163*** (4.53)
ROE	0.207 (1.31)	0.197 (1.22)	0.231 (1.44)	0.084 (1.05)	0.236 (1.43)	0.214 (1.21)	0.248 (1.51)	0.101* (1.71)	-2.095*** (-4.25)	-2.107*** (-4.27)	-1.889*** (-3.83)	-1.648* (-1.92)
LOSS	0.049 (0.32)	0.067 (0.44)	0.026 (0.17)	0.052 (0.31)	-0.148 (-0.64)	-0.144 (-0.64)	-0.129 (-0.55)	-0.079 (-0.27)	-0.252 (-1.05)	-0.261 (-1.10)	-0.259 (-1.11)	-0.198 (-0.71)
CAPINT	0.332** (1.97)	0.324* (1.95)	0.324* (1.92)	0.166 (1.08)	0.620* (1.93)	0.343 (1.08)	0.491 (1.51)	0.162 (0.53)	-0.331 (-1.63)	-0.355* (-1.68)	-0.270 (-1.27)	-0.182 (-0.78)
SIZE	0.273*** (5.15)	0.198*** (3.45)	0.345*** (6.69)	0.349*** (6.51)	0.331*** (4.29)	0.206*** (2.70)	0.374*** (5.25)	0.335*** (5.18)	0.340*** (4.35)	0.389*** (3.85)	0.386*** (4.90)	0.413*** (4.36)
Constant	-3.172*** (-6.24)	-2.650*** (-4.96)	-3.660*** (-7.33)	-3.649*** (-7.19)	-3.713*** (-4.70)	-2.960*** (-3.95)	-4.003*** (-5.31)	-3.637*** (-5.25)	-3.183*** (-4.21)	-3.560*** (-3.87)	-3.542*** (-4.65)	-3.838*** (-4.27)

Observations	766	765	763	714	361	360	359	331	405	405	404	383
R-squared	0.165	0.177	0.182	0.181	0.231	0.272	0.228	0.182	0.245	0.246	0.256	0.242
Year dummies	Controlled											
Ind dummies	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. Asterisks *,**,*** denote two-tailed statistical significance at 10%, 5% and 1%, respectively. GOV_{it} is a dummy variable that is equal to 1 when the largest shareholder is government-related and 0 otherwise. GOVT_{it} is a dummy variable that is equal to 1 for the central government-related firms and 0 for local government-related firms. Variable definitions follow Table 6.3. Results for year dummies, industry dummies and control variables are not reported to conserve the space.

6.5.4.5 Other measure of tax avoidance

We test whether our results are robust to other measure of tax aggressiveness, following the study of Chen *et al.*(2010), we compute GAAP effective tax rate, cash effective tax rate and income-effect book-tax difference. The GAAP ETR is dividing total income tax expense by the pre-tax income while the cash effective rate is calculated as the cash tax payment divided by pre-tax income. The higher value for these two measures indicates a lower level of tax aggressiveness. Income-effect BTD is calculated as difference between pre-tax income and current tax expenses from consolidated firms which grossed up by the current applicable tax rate. Results in Table 6.9 show that our conclusions in terms of the association between tax planning and ownership structure variables continue to hold for these three alternative measures of tax avoidance, albeit the results appear to be statistically insignificant, which further indicate our measure of tax aggressiveness is better to capture the effects of earning management and tax planning.

Table 6.9: Robustness tests: estimated regression results for other measure of tax avoidance

Panel A: Income-effect book-tax differences

Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
VARIABLES	BTD	BTD	BTD	BTD	BTD	BTD	BTD	BTD	BTD	BTD	BTD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STA	0.528 (1.23)					-0.131 (-0.11)	0.146 (0.26)				
GOV		-0.588 (-1.57)						-1.635* (-1.85)	-0.114 (-0.38)		
OC			0.038 (0.06)							-1.138 (-1.09)	-0.293 (-0.36)
INST				-0.375 (-0.94)		0.243 (0.38)		-1.604 (-1.03)		-0.136 (-0.09)	
FUND					2.754*** (4.55)		3.385*** (3.47)		1.809 (1.39)		4.931** (2.16)
STA*INST						-0.403 (-0.19)					
STA*FUND							-5.261** (-2.20)				
INST*GOV								2.452 (1.59)			
FUND*GOV									0.356 (0.25)		
OC*INST										0.737 (0.38)	
OC*FUND											-4.686 (-1.39)
Observations	1,030	986	1,029	1,009	934	1,009	934	982	910	1,009	934
R-squared	0.463	0.463	0.422	0.466	0.445	0.475	0.460	0.478	0.451	0.476	0.458
Year dummies	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Ind dummies	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled

Panel B: GAAP ETR

Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Variables	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR	GAAPETR
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
STA	-0.006 (-0.50)						-0.016 (-0.55)	-0.014 (-0.71)			
GOV		-0.016 (-1.45)							-0.006 (-0.30)	-0.021 (-1.26)	
OC			-0.001 (-0.02)								0.067* (1.66)
INST				-0.007 (-0.46)			-0.015 (-0.67)		0.000 (0.01)		0.063 (1.14)
FUND					0.060*** (2.68)			0.027 (0.90)		0.037 (0.72)	-0.067 (-0.86)
STA*INST						0.051 (0.88)					
STA*FUND							0.121 (1.60)				
INST*GOV								-0.019 (-0.49)			
FUND*GOV									0.023 (0.40)		
OC*INST										-0.105 (-1.45)	
OC*FUND											0.194* (1.69)
Observations	947	908	947	928	869	928	869	905	848	928	869
R-squared	0.148	0.158	0.051	0.159	0.166	0.159	0.168	0.159	0.162	0.161	0.168
Year dummies	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Ind dummies	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled

Panel C: Cash ETR

Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012
Method	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Variables	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR	CASHETR
	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
STA	0.011 (0.51)					0.042 (0.93)	0.004 (0.15)				
GOV		-0.012 (-0.72)						0.012 (0.39)	-0.028 (-1.10)		
OC			0.030 (0.86)							0.075 (1.18)	0.004 (0.09)
INST				-0.024 (-1.02)		-0.005 (-0.15)		0.011 (0.19)		0.022 (0.25)	
FUND					0.010 (0.27)		-0.022 (-0.48)		-0.062 (-0.81)		-0.121 (-1.10)
STA*INST						-0.093 (-1.10)					
STA*FUND							0.116 (1.04)				
INST*GOV								-0.050 (-0.87)			
FUND*GOV									0.083 (1.05)		
OC*INST										-0.077 (-0.65)	
OC*FUND											0.202 (1.29)
Observations	764	738	763	752	705	752	705	734	687	752	705
R-squared	0.181	0.179	0.183	0.183	0.200	0.185	0.202	0.184	0.201	0.186	0.202

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. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5% and 1%, respectively. Year and industry dummy variables are also included in models, coefficients on the year and industry dummies are not reported to conserve space. Variable definitions follow Table 6.3

6.5.4.6 Test for model misspecification

We estimate abnormal ABTDs based on a cross-sectional model with attempts to remove mechanical differences driven by differences in financial reporting and income tax law, leaving the components driven by the opportunistic differences in earning management and tax planning. Another major concern is that whether our model successfully separates mechanical differences from opportunistic differences. To examine the concern, we regress the fitted value NBTDs (instead of ABTDs) as the dependent variables into regressions in studying relationship between the ownership structure and tax aggressiveness (Table 6.10), our results indicate that few of the independent variables that are of our interests is significant from zero, and the explanatory power is mainly arise from the firm-specific characteristics that are included to control for fundamental financial and economic determinants of firms' level of tax aggressiveness. The results suggests that only opportunistic differences (ABTDs) that capture the corporate governance characteristics and that our BTDs model disentangles NBTDs and ABTDs.

Table 6.10: Robustness tests: test for model misspecification for chapter 5: NBTD fitted value from OLS model

Year	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012	2006-2012
Method	OLS										
Variabes	NBTD										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STA	0.057 (0.49)					0.276 (0.98)	-0.008 (-0.11)				
GOV		-0.198** (-2.38)						-0.311 (-1.47)	-0.021 (-0.39)		
OC			0.056 (0.55)							0.108 (0.80)	-0.167** (-1.97)
INST				0.078 (0.90)		0.196* (1.83)		-0.174 (-0.49)		0.228 (0.79)	0.166*** (2.80)
FUND					0.475*** (4.84)		0.622*** (4.78)		0.771*** (3.76)		
STA*INST						-0.444 (-0.92)					
STA*FUND							-0.519 (-1.47)				
INST*GOV								0.280 (0.79)			
FUND*GOV									-0.398* (-1.82)		
OC*INST										-0.222 (-0.68)	
OC*FUND											0.550*** (3.99)
LEV	-0.685*** (-7.00)	-0.693*** (-7.27)	-0.694*** (-6.74)	-0.704*** (-7.10)	-0.635*** (-8.10)	-0.702*** (-7.19)	-0.630*** (-8.04)	-0.713*** (-7.08)	-0.637*** (-8.37)	-0.701*** (-6.84)	-0.658*** (-8.36)
EM	0.727	0.790	0.747	0.757	0.107	0.772	0.127	0.785	0.186	0.754	0.117

	(1.02)	(1.06)	(1.02)	(1.05)	(0.49)	(1.06)	(0.58)	(1.11)	(0.83)	(1.02)	(0.53)
ROE	0.390*	0.369*	0.387*	0.381*	0.272*	0.383*	0.270*	0.364*	0.267*	0.381*	0.271*
	(1.82)	(1.81)	(1.82)	(1.81)	(1.92)	(1.79)	(1.93)	(1.80)	(1.91)	(1.81)	(1.94)
LOSS	-0.648***	-0.652***	-0.643***	-0.636***	-0.648***	-0.636***	-0.643***	-0.645***	-0.644***	-0.636***	-0.644***
	(-6.79)	(-6.87)	(-6.56)	(-6.74)	(-8.04)	(-6.64)	(-7.98)	(-6.94)	(-7.91)	(-6.72)	(-8.13)
CAPINT	-0.127	-0.132	-0.131	-0.124	-0.326***	-0.109	-0.328***	-0.146	-0.337***	-0.125	-0.316***
	(-0.65)	(-0.71)	(-0.69)	(-0.67)	(-4.90)	(-0.56)	(-4.92)	(-0.89)	(-5.02)	(-0.68)	(-4.69)
SIZE	0.250***	0.297***	0.247***	0.246***	0.229***	0.232***	0.234***	0.289***	0.256***	0.242***	0.234***
	(6.78)	(9.54)	(6.74)	(7.98)	(7.44)	(6.14)	(7.57)	(10.09)	(8.39)	(6.95)	(7.75)
Constant	-1.833***	-2.075***	-1.803***	-1.779***	-1.680***	-1.724***	-1.701***	-1.897***	-1.908***	-1.804***	-1.648***
	(-5.76)	(-6.45)	(-5.50)	(-5.97)	(-5.78)	(-5.31)	(-5.87)	(-5.61)	(-6.75)	(-5.25)	(-5.70)
Observations	944	903	943	924	856	924	856	899	833	924	856
R-squared	0.393	0.420	0.393	0.394	0.479	0.396	0.482	0.422	0.504	0.394	0.481
Year dummies	Controlled										
Industry dummies	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. NBTDit are normal BTDs derived from BTDs model in Chapter 5, figures in NBTDit are all multiplied by 100 for scale effects. Variable definitions follow table 6.3.

6.6 Conclusion

Prior studies have shown that substantial benefits are associated with tax sheltering activities e.g. Graham & Tucker, 2006), which lead to the variation in firms' ability to minimize income taxes (Dyreng *et al.* 2008). However, it is argued by Hanlon and Heitzman (2010) that the determinants of firm's tax sheltering activities remain unclear. This study contributes to the stream of existing research that examines the variation in firms' tax sheltering activities.

This study seeks to understand the fundamental firm characteristics that influence corporate tax practices based on the agency theory and institutional theory to build a framework for how specific feature of organizational structure, namely political vs. market forces impacts corporate tax practices. This chapter marks one step forward to a better understanding of the effects of ownership structure on firms' tax sheltering activities in the Chinese institutional environment, this is of interest due to a hybrid corporate governance and ownership structure with historically a high level of state ownership as well as ownership concentration, and then reduce significantly associated with split-share structure reform that was effective in 2005 in Chinese listed firms. This study takes advantage of the recent split-share structure reform in China with its aim at making its stock market more vibrant and attractive to investors as well as its tax policy changes that was effective in 2008. Even after change in tax policy, income tax revenue remains one of major sources of central and local government revenue.

Based on a hand collected sample of 229 publicly listed Chinese firms over the 2006 to 2012 period, we find that institutional ownership which are proxy variable for market forces are negatively associated with the level of tax aggressiveness equating to more effective monitoring of management and institutional investors are more concerned with tax reporting. However, ownership concentration and the state ownership which are proxy for political connections are positively associated with the level of tax aggressiveness. Large shareholders in China can have control power in a firm's tax-saving

activities for their self-serving behaviors through their concentrated ownership; as a result, they are more concerned with tax-saving strategies to benefit their shareholders. We also find a positive relationship between government-related ownership and the level of tax sheltering when examining the strength of political connections vs. market forces. Our empirical result is in support of the political connections explanations in a relationship-based economy rather than a 'market-based' economy, specifically, the evidence suggest that political connections through controlling shareholder and state ownership are a significant determinant of the relationship between tax aggressiveness and government involvement and their effects should be accounted for.

This study contributes to existing literature that explore the relationship between tax and corporate governance characteristics in both developed and emerging markets, meanwhile, the empirical evidences provide a better understanding of the issues concerning listed firms in China during its transition from a centrally planned to a market economy in terms of separation of control and tax aggressiveness and have important theoretical as well as policy implications. Transitional economies are often characterized by weak legal environment and poor corporate governance system, the evidence suggest that political connections are a significant determinant of corporate tax practices in Chinese listed firms when compared to the impact of market forces, the functions of market forces in Chinese listed firms is limited by political connections. The finding should serve as a caution to regulators and policymakers and alter them to the critical role played by political connection, and should pay more attention to the role of market forces under the intervention of non-market forces, in terms of government policy changes in order for the success of China's economic reform. It is insufficient to only introduce market forces by way of market reforms, for example, purely split share structure reform is far from enough. Further studies should also be conducted to explore the relationship between tax policy changes and tax-related activities of Chinese listed firms, given the dramatic changes in tax policy in China over the years.

In terms of the results, it is again worth noting that the measure of tax sheltering uses only publicly available financial information that may lead to misstatement. It is difficult to measure the level of tax aggressiveness, like those applied in prior literature, there are strengths and weakness associated and none is superior or inferior to the other. Despite the fact that numerous firm characteristics are controlled for the variation in tax planning across firms in regression models, the results should be interpreted with caution in the event that any variable that is correlated with ownership structure has inadequately controlled (Badertscher *et al*, 2013).The result of any tax management study depends to a certain extent on the reliability of the book-tax difference model as a proxy for tax planning; there is no best model in the extant accounting and corporate governance literature. It is argued by Wahab & Holland (2012) that financial reporting and tax regulatory departments should take account of the increased tax-related disclosure by listed firms in order for the shareholders to be effective monitors and controllers in firms' tax-related decisions. In determining the extent and forms of additional disclosures depends on the tradeoff between legitimate and illegitimate tax sheltering activities, this is due to the fact that, shareholders and tax authorities would benefit as illegitimate tax sheltering activities would be reduced to the degree of increased tax-related disclosures; one the other hand, managers might be discouraged from pursuing legitimate activities along with disclosures.

7.0 Executive and board managerial cash compensation and tax aggressiveness

7.1 Introduction

This chapter examines the association between executive and firm leadership compensation and tax aggressiveness. Consistent with prior research, it is assumed that executive and board ownership as well as appropriate compensation schemes serve to maximize firm value and mitigate agency conflicts, where the optimal compensation contracts minimize agency costs by aligning incentives of managers with those of shareholders.

Since Jensen & Meckling's (1976) pioneering study, a large strand of research focuses on corporate governance mechanisms that can be alternatively employed by firms to mitigate agency related problems. The internal governance mechanisms including firms' ownership structure, board and executive compensation structure, which have been suggested as the primary mechanisms that can help align the interests of managers with those of shareholders which result in increased shareholder value (e.g. Shleifer & Vishny, 1997; Gillan, 2006). A complementary body of research highlights the impact of external governance mechanisms on firm value including market for corporate control, legal framework and protection against takeovers (Gompers *et al.* 2003; Bebchuk & Cohen, 2005).

From the perspective of institutional theory, the political influences and social norms need to be incorporated for the development of a strong corporate governance system (Lin, Hutchison & Percy, 2009). China, with its transition economy, has focused on the rationalization of the ownership structure and the development of a practical corporate governance system which is suitable for its institutional setting. The political and economic systems are important in China and play an important governance role both directly and indirectly through their interaction with internal corporate governance mechanisms (e.g. Cheng *et al.* 2008). As a result, this study will consider the role of internal control governance mechanisms, especially executive as well as firm

leadership compensation and various characteristics of the board of directors in constraining tax aggressiveness in China.

Prior research are mostly based on the U.S. context which examine the characteristics of the executives, board of directors, and ownership structure influence on tax strategies (e.g. Phillips, 2003; Desai & Dharmapala, 2006; Dyreng *et al.* 2009; Wilson, 2009; Chen *et al.* 2010; Minnick & Nogo, 2010; Armstrong *et al.* 2012;Khurana & Moser, 2013). The existing research examine the relationship between practices of corporate governance system and tax/earning management in China includes the role of board (Firth, Fund & Rui, 2006; Liu & Lu, 2007; Erle, 2008; Lin, Hutchison & Percy, 2009; Lanis & Richardson, 2011) and ownership concentration (Ding *et al.* 2007; Firth, Fund & Rui, 2007). The existing literature suggest that there is an association between corporate governance mechanisms and tax sheltering activities, however, the empirical results are somewhat mixed and inconsistent and dependent upon the specific institutional setting and governance structure being studied.

Studies that employ the relationship between managerial power and the level of tax aggressiveness in the context of emerging countries such as China are scant. Managers in firms play an important role in the selection of a tax reporting strategy, as they are responsible for firm performance, resource allocation, as well as maximization of shareholder wealth. In this study, we examine the effects of firm executive and overall leadership compensation and shareholding on the level of tax aggressiveness using sample of firms between 2006 and 2012. We define executive, directors and supervisors as firm leadership. Specifically, we also include specific board characteristics which are indicative of internal corporate governance mechanisms as firms with different corporate governance structure may be more likely to pursue different types of tax strategies. Prior studies provide inconclusive and mixed results on the effect of board characteristics on firm performance and tax aggressiveness (Chen *et al.*2006; Liu & Lu, 2007; Lo *et al.* 2010; Minnick & Noga, 2010). Minnick & Noga (2010) find little evidence on the association

between board characteristics and a firm's tax management in the United States, therefore the effects of corporate governance on tax aggressiveness in China is yet to be explored.

Our study makes several contributions to the existing literature. Firstly, our study extends several streams of research that investigate whether the use of executive/leadership compensation practices align incentives of managers in firms with those of shareholders. Our results have implications for compensation committees in Chinese listed firms that design the structure of executive and leadership compensation contracts, for firm stakeholders and regulators that monitor tax reporting practices in firms as well as academic researchers interested in understanding the determinants of corporate tax aggressiveness. Secondly, the study provides a better insight into the effect of governance mechanisms on tax aggressiveness upon the Chinese institutional setting by looking at the tax management. Thirdly, this study extends other recent studies on tax aggressiveness carried out in the U.S context (Desai & Dharmapala, 2006; Dyreng *et al.* 2010; Armstrong *et al.* 2012; Rego & Wilson, 2012) by studying the tax-motivated activities of publicly listed Chinese firms where there is little evidence in the literature.

The remainder of this chapter is organized as follows. Section 7.2 presents the literature review as well as hypotheses of the study, in section 7.3 presents the data availability and descriptive statistics. Section 7.4 presents research methodology and regression models. Following that is the findings of the study as well as a series of robustness tests in section 7.5. The last section 7.6 provides a summary of the conclusion of the study.

7.2 Literature review and hypothesis development

7.2.1 Compensation practices and tax aggressiveness

Compensation disclosure in China is different from U.S, and the CSRC regulates the disclosure on executive compensation information. Historically,

Chinese listed firms were not required to disclose complete information on executive compensation in their financial statements and some firms did on a voluntary basis (Conyon & He, 2011), since 2001 to 2005, firms are required to disclose the sum of total compensation for the three highest-paid management and the three highest-paid members of the board including executive board members (CSRC, 2002b). Only since the year 2006, listed firms were required to disclose total compensation of each individual board members and top management as the sum of salary, bonus, stipends and other benefits (CSRC, 2005a, 2007), firms were also required by CSRC rules to disclose information on stock option if the Chinese listed firms that have successfully completed structural reforms to offer stock options or restricted stocks to their top management and the members of board and supervisory board excluding independent directors (CSRC, 2005b). Further administrative measures in terms of equity incentives of listed firms were governed by CSCR (2005b) and Guidelines on equity incentives for state controlled listed firms were update by SASAC in 2006 and 2010. However, the stock option or stock grants are rarely in Chinese listed firms' annual reports, and in China, managers' compensation does not depend directly on stock performance, as equity compensation of Chinese executive is only evident in Hong Kong (Gao & Kling, 2012).

According to Grabke-Rundell & Gomez-Mejia (2002), agency theory also implicitly assume that the presence of power exists in the relationship between executives and shareholders due to the ability of executive to pursue self-interest for high compensation. Board composition appears to have a moderating role in the agency relationship (Bebchuk, Fried & Walker, 2002). The main contribution of our study is to empirically document executive as well as firm leadership compensation to proxy for managerial power and connections within a firm that affect the tax reporting practices of Chinese listed firms. Tax also plays a role in the design of compensation plans, including the choice between cash and equity compensation and between different forms of equity incentives (Hanlon & Heitzman, 2010); the incentive compensation is constructed to tie shareholder incentives to managerial

incentives. As managers are responsible for undertaking tax minimization strategies, recent studies have paid attention to investigate the effect of managerial incentives and characteristics on the level of firms' tax sheltering activities. It can be expected that managers are compensated for some level of tax aggressiveness but would not be compensated for tax aggressiveness that cause firms to incur additional costs that reduces shareholder wealth as well as that costs outweigh the benefits (Rego & Wilson, 2012).

On one hand, managers with higher incentive compensation help align their incentives with those of shareholders and induce managers to invest more resources in tax planning and to be more aggressive about maximizing firm value through tax sheltering activities. Phillips (2003) examine whether the compensation based on after-tax performance measures results in lower effective tax rates, which the latter is used as the proxy for tax planning effectiveness. Erickson *et al.* (2006) find a positive relationship between equity-based compensation and non-tax compliance. Armstrong *et al.* (2012) and Rego & Wilson (2012) provide evidences on the relationship between executive compensation and tax aggressiveness in the short-run, they find executives are rewarded for being tax aggressive, and further suggest that this link reflects efficient contracting rather than rent extraction. Robinson *et al.* (2010) report that firms with tax departments identified as profit centers (versus cost centers) have lower effective tax rates. The empirical literature above taken together suggests that incentive compensation induces tax planning activities.

On the other hand, Desai & Dharmapala (2006) study how equity-based compensation incentives affect decision of tax sheltering, Following the work of Desai & Dharmapala (2006) and Rego & Wilson (2012), on the one hand, if a significant negative relationship between executive compensation and tax aggressiveness are found in firms with weaker corporate governance structure and do not operate with optimal corporate governance mechanisms in place, then managers are more able to increase their personal wealth rather than shareholder wealth through aggressive tax planning. On the other hand, if a

significant negative relationship between executive compensation and tax aggressiveness are found in firms with stronger corporate governance structure, then managers are compensated for efficient tax planning decisions. As a result, it can be expected the relationship to be strongest with weak corporate governance. However, Seidman & Stomberg (2011) directly challenge the assumptions underlie the Desai & Dharmapala (2006) model, for example, the implicit assumption that equity-based compensation does not create tax shields and a negative relationship between option compensation and tax planning is driven by rent diversion and tax sheltering being complementary activities; and report that firms with higher level of equity compensation are less likely to require or benefit from additional tax shields from tax planning activities.

Mangers' remuneration mainly consists of six elements, including base salary, bonus, stock options, restricted share plans (stock grants), pension and other benefits (e.g. car, health care) (Mallin, 2007). Managers are in a position to provide more resources toward tax management and are more likely to be a driver of a firm's long-term performance. Ryan & Wiggins (2001, 2004) provide evidence that similar to the executives, board with more outside independent directors provide themselves with larger stock and option grants that are more closely aligned to performance of stock price. Linn and Park (2005) provide evidence that director compensation is tied to investment opportunities, directors with higher levels of compensation is necessary for firms with high costs of monitoring, especially using equity compensation to mitigate agency costs; viewing tax planning as an investment choice, directors earn more than others in firms where they manage taxes more actively. However, In China, the information about the stock option grants or stock grants is rarely in financial statements and we will focus cash compensation in our study.

Taken together, it is reasonable to expect that firms will invest a certain amount of resources into tax planning. However, the tax strategies that firm choose is likely to be driven by corporate governance and compensation practices in place. Moreover, Core et al (1999) argue that corporate

governance structure in practice should convince managers to select the level of tax aggressiveness that could result in firm value maximization. In this study, we examine cash compensation by top executives as well as firm leadership that include all executives, board of directors and supervisors. The use of cash compensation of overall firm leadership is appropriate in Chinese context due to their coordinated roles to help build consensus around firm strategies. Such features of firm leadership in China may empower executives and member of board to pursue self-interests which are provided incentives to reduce firm value maximization. To formally test the association between corporate compensation practices and the level of tax aggressiveness, the following hypothesis is proposed

H1: Executive and firm leadership compensation is negatively associated with corporate tax aggressiveness.

7.2.2 Board characteristics and tax aggressiveness

Our second hypothesis studies internal governance mechanisms. Some recent studies provide evidence that board characteristics affect a firm's tax strategies (e.g. Minnick & Noga, 2010; Lanis & Richardson, 2011). Board of directors characteristics are considered by a related strand of the existing literature as important determinants of corporate governance structure including: board independence (Hermalin & Weisbach, 1991,2003), stock shareholding of board members (Bhagat, Carey & Elson, 1999) and whether CEO duality (Brickley, Coles & Jarrell, 1997).

Board of directors is one decision system that separate management and control in order to mitigate any residual loss to shareholders from tax aggressiveness arising from agency problems (Fama & Jensen, 1983; Lanis & Richardson, 2011). The board of directors is held ultimately responsible for the firms' strategic decision making for all other stakeholders and to the society as a whole (Rose, 2007). The strategic influences by controlling

shareholders through directors on board complicate the evaluation of board effectiveness, given the higher level of ownership concentration in China. Little research are studied in terms of how board of directors is directly involved in corporate tax planning (Erle, 2008), Relating the literature to research question at hand, based on the foregoing discussion in section 3, small board may be more functional and may provide better oversight for financial reporting (Xie *et al.* 2003; Minnick & Noga, 2010), therefore may find it easier to assure management to allocate resources towards tax management. It is reasonable to expect that the existence of a higher proportion of independent directors on the board of directors are in a better position to divert resource to tax management, especially when board independence provide a broader perspective of the firm and its overall performance (Minnick & Noga, 2010), which as a result significantly reduce the possibility of tax aggressiveness. CEO duality undermines the firm's governance standards, which leads to managers to be less motivated to pursue performance growth, as well as less resources and efforts allocated to reduce tax.

In this study, we specifically examine the impact of board size, number of board meetings conducted in a year, percentage of independent directors on the board and duality in the CEO/chairman position on the tax aggressiveness. Hence, we formulate our hypothesis as follows:

H2: Board effectiveness is related to the level of tax aggressiveness.

7.2.2.1 Board independence

The standard view is that board independence is a necessary condition for effective corporate governance. It is suggested by Fama (1980) and Fama & Jensen (1983) that the effectiveness of board in monitoring managerial discretionary is a function of insider management coupled with outside members who serve on the board (Fama, 1980; Fama & Jensen, 1983; Lanis &

Richardson, 2011), outsider directors who are independent of management influence protect shareholder interests against managerial opportunism which as a result help enhance shareholder value (see Klein, 2002; Hermalin & Weisbach, 2003 for a review).

There are two reasons for boards with a higher percentage of outside independent directors are deemed to be more effective. Firstly, outsider independent directors are provided with incentives to signal their managerial competence to other potential employers (Fama & Jensen, 1983). Secondly, the outside independent directors have the incentive to monitor management as they want to develop their reputations as experts in control of decision and this will enhance their chances of securing other directorships (Fama, 1980; Fama & Jensen, 1983).

The effect of board independence on the internal monitoring mechanisms of firms has been extensively studied in the literature on corporate governance (e.g. Fama, 1980; Fama & Jensen, 1983; Beasley, 1996; Dechow *et al.* 1996; Klein, 2002; Park & Shin, 2004; Peasnell *et al.*, 2005). For example, Both Beasley (1996) and Dechow *et al.* (1996) find the negative relationship between the proportion of independent directors on the board and the likelihood of financial statement fraud, which provide evidence on the ability of larger proportion of outside independent directors to properly exercise its monitoring function to prevent financial statement fraud; Klein (2002) and Peasnell *et al.* (2005) find that a measure of board independence is negatively related to the earning management activities. However, Park & Shin (2004) fail to provide empirical supports on the relationship between board independence and earning management in Canada with highly concentrated ownership and control by large block-holders on the listed firms.

7.2.2.2 Board size

Board size is also likely to be related to board performance and the effectiveness of a board to exercise its monitoring responsibility (Jensen,

1993). However, there is still no any consensus on the optimal size of board structure. On the one hand, some researchers propose that a large size of the board strengthens management of information, which means diversity of opinions and therefore a better control (Kouki *et al.* 2011). Evans (2004) finds a significant and positive association between board size and quality of financial communication.

However, on the other hand, prior studies show that larger boards are viewed as less flexible and more inefficient, and are detrimental to the effectiveness of the board of directors, due to the difficulty in achieving a consensus among board members to oppose against the CEOs and the decline in work productivity with a larger board (Beasley, 1996; Yermack, 1996; Eisenberg *et al.* 1998; Vafeas, 1999; Cahan *et al.* 2005). These studies suggest that a positive relationship between the board size of a firm and earning management activities, and if small boards are claimed to be more effective monitoring in a firm, then they should be associated with less tax aggressive activities. These results confirm for the role of board in mitigating conflicts between managers and shareholders by providing control on behaviors of managers *vis-a-vis* financial statements, which in turn tends to reduce managers' opportunities behaviors (Kouki *et al.* 2011).

7.2.2.3 CEO duality

The board plays a significant role in the process of hiring, firing, evaluating and compensating the CEOs and the chairman of the board is responsible for the evaluation and monitoring of the performance of the executive directors including the CEOs, but in many cases, the CEO also serves as chair of the board. Traditionally, in U.S firms, the same person occupies the CEO position and chairman of the board of directors while in most European and Canadian firms, separation is required to ensure the better governance (Lin & Liu, 2009). Two theoretical arguments drawn from agency theory and stewardship theory provide contrast conclusions with each other. It is argued by Peng et al (2007:

p205) that "not only are these two competing theoretical perspectives, but previous research examining the performance implications of CEO duality has also been described as 'largely inconclusive'".

On the one hand, Jensen & Meckling (1976) and Fama & Jensen (1983) posit that CEO/Chairmen separation is of importance for the effective monitoring function of the board due to the significant control that chairmen of board can exercise over the board through his or her power to set the agenda of board, and the CEOs duality over the board can be viewed as a source of excessive power. In U.S. context, Yermack (1996) shows that firms with separate CEOs and chairmen of board outperformed firms with CEO duality; it is likely for the CEO duality to exercise control over managerial performance and the process of financial reporting and does not necessarily decrease performance. Some studies provide evidence that firms with weak governance or aggressive earning management are associated with a higher possibility of CEO duality (Dechow *et al.* 1996; Hudaib & Cooke, 2005). Empirical studies supports the view that CEO duality is more likely to lead to more managerial opportunism arise from the ineffective board monitoring over managers, while separating CEO position from board chairmen appear to be positively related to the information content of accounting earnings (Dechow *et al.* 1996; Anderson *et al.* 2003) and high voluntary corporate disclosure for Hong Kong firms (Gul & Leung, 2004).

On the other hand, it is argued by stewardship theory that leadership of CEO duality plays a necessary and important role at the top of the organization, and helps to avoid confusion among employees, managers and other stakeholders as well as facilitate more effective and more timely decision-making, thus encouraging a CEO to better serve the firm and its shareholders (e.g. Finkelsten & D'Aveni, 1994; Davis *et al.* 1997).

Under the institutional setting in China, the duality role of CEO and chairman is not prohibited (Chan *et al.* 2013), corporate governance is still weak and in its infancy, many firms suffer from inside control, CEO duality increases the

possibility of weak supervision, power concentration, and insider control, which in turn gives CEOs more negotiation or bargaining power (Chen & Al-Najjar, 2012).

7.2.2.4 Frequency of board meetings

The frequency of board meetings indicates the significance of the board in firm's decision-making, and more meetings may indicate a strong position of the board in a firm (Gao & Kling, 2008).

Vafeas (1999) applies the frequency of board meetings as the proxy for the time efforts that directors have to monitor management and provide evidence that increase in performance with more frequency of board meeting; a board with frequent meetings should be able to devote more resources to issues such as tax strategies and is less likely to skip over management plans without questioning the motives behind them (Xie *et al.* 2003). Beasley *et al.* (2000) find fraud firms are associated with fewer audit committee meetings when examine the relationship between the likelihood of financial statement fraud and frequency of audit committee meetings. Carcello *et al* (2002) find that board activity complements auditor oversight as the firm pay higher audit fees when meeting of boards is more frequently. Ebrahim (2007) finds that in more active boards as proxied by the frequency of annual board meetings, a significant relationship exists between board independence and earning management.

7.2.3 Audit quality

The auditor type and auditor opinion are of significance to auditor quality of a firm. The evidence from financial statements do supports that Big 4 auditors are of higher quality on average than other smaller accounting firms (Francis, 2004), due to the fact that Big 4 auditors are more concerned with litigation

costs and risk than non-Big 4 auditors as they have more incentive to protect the brand name reputations and capitals. The Chinese Big 4 auditors have even an incentive to maintain their international reputation in terms of underdeveloped legal environment and the potential litigation costs in Chinese context. In examining the audit reporting of Big 4 auditors versus local auditors in Chinese market in terms of the implementation of China's 2006 Bankruptcy Law, Mo et al (2015) provide evidence that those Chinese affiliates of Big 4 auditors are more likely to issue going concern modified reports than local Chinese auditors not only in the post China's 2006 Bankruptcy law, but also in the pre-law period; the results suggest that Big 4 auditors are more concerned with increased litigation costs and regulation risk associated with enact of Bankruptcy Law. In China, most listed firms are audited by Chinese local auditors, and only about 6.5 percent of them were audited by Big 4 audits during 2001 to 2010 (Mo, *et al.* 2015), but the number of the latter are increasing recently. Therefore the Chinese auditing market provide an excellent institutional setting to examine the issue. Prior studies that sought to link audit quality to earning management (e.g. Becker *et al.* 1998; Francis *et al.* 1999) and suggest that large audit firms are more effective in constraining managerial opportunistic behaviors in terms of accruals-based earning management and in restraining the ability of their client firms to manipulate earnings, therefore, are able to give greater credibility to the reported earnings of their client firms. In essence, prior literature suggests that large auditors provide higher quality of audits relative to other counterparties.

Audit independence is essential for the audit effect and audit quality, standard audit opinion is regarded as the proxy for auditor independence (Krishnan, 2005). In China, there are two categories of audit opinion (Chen *et al.* 2013) which are very similar to those required in the International Standards on Auditing. The first category is the standard unqualified opinions which are issued when a financial statement is judged to be true and free from material misstatements and the second category is the non-standard opinion also is known as modified audit opinions, which are issued when some problems are identified by audit firms, while the latter category also includes four subtypes

such as an unqualified opinion with explanatory notes, a qualified opinion, a disclaimer of an opinion and an adverse opinion. Number prior studies have studies the role of audit opinion in Chinese context (e.g. Chan, Lin & Mo, 2006; Chen, Sun & Wu, 2010; Chan & Wu, 2011; Wang, Wong & Xia, 2008; Gul, Wu & Yang, 2013). Audit opinion can be viewed as a proxy for financial disclosure in constraining corporate aggressive tax activities, which examines the monitoring effect of corporate transparency of firms' financial statements in the context of corporate tax management practices, a unique setting in China where there is information asymmetry between managers and outside investors and opportunities for managers to exploit tax aggressiveness.

In this study, we specifically examine the impact of auditor type and audit opinion on the tax aggressiveness. We use a dummy variable (BIG4) to measure auditor type, and it takes a value of one if the firm is a Big 4 accounting firm client and zero otherwise and use audit opinion (AUDOP) as a dummy variable which take a value of one if it is standard un-qualified opinion and zero otherwise. To formally test the association between audit quality and the level of tax aggressiveness, the following hypothesis is proposed:

H3: Audit quality is related to the level of tax aggressiveness.

7.3 Data Collection and Descriptive statistics

Financial data and data on corporate governance variables are collected from China Stock Market and Accounting Research (CSMAR) database and WIND. Table 7.1 provides the descriptive statistics of all major variables. Augmented Dickey-Fuller and Phillips-Perron tests indicate that all variables are stationary. The variance inflation factors ¹⁶(VIFs) are calculated when estimating the regression model to test for the issue of multi-collinearity between the

¹⁶The results for unit root tests and VIFs are not reported to conserve space.

independent variables. The results shows that VIFs are relatively low and none of the VIFs exceed 10 for any of our independent variables, therefore, the serious multi-collinearity problem is unlikely to be present for our study (Gujarati, 2009).

Table 7.2 shows that approximately 75% and 40% of the firm-year observations have zero executive shareholding and zero overall firm leadership shareholding respectively. The table also indicates that for the observations with positive shareholdings, executive management shareholding (EXSH), on average is approximately 0.25 percent while the overall firm leadership shareholding (MANSH) on average is approximately 0.97 percent. The mean of total cash compensation for the top 3 executives and the total cash compensation for the overall firm leadership are 2.18 million and 6.49 million Chinese Yuan respectively. The average size of leadership team is 22. On average, median board size (BODSIZE) is 11 members, where 37 percent are independent (INDEP) on the board for the sample, and there are 10 board meetings (BODMET) conducted by board of directors over a year. DCEOD indicates that the CEO is also the chair of the board of directors is only 10 percent of our sample observations. BIG4 indicates that there is 58 percent of firms that is audited by the Big 4 accounting firms in the sample. AUDOP indicates that over 90 percent of listed firms receive standard unqualified opinions from auditors in the sample. Table 7.3 shows the Pearson correlation coefficients for the independent variables. The concern of the potential for harmful collinearity among any of the independent variables does not appear to be an issue in our study.

Table 7.1: Variables descriptive statistics

Variables	Obs	Mean	Std. Dev	Min	Max
ABTD	958	0.0000015	0.008	-0.055	-0.029
LOGMANPAY	1037	5.31	0.342	4.088	6.645
LOGEXEPAY	1046	6.207	0.333	5.045	7.486
MANSH	1038	0.0003	0.002	0.000	0.028
EXSH	1048	0.0006	0.014	0.000	0.436
DCEOD	1039	0.925	0.262	0.000	1.000
INDEP	1044	0.369	0.065	0.091	0.8
BODSIZE	1044	9.989	2.313	4	18
BODMET	1053	10.013	5.122	2	57
LEV	1054	0.519	0.2	0.014	1.376
LOSS	1073	0.073	0.259	0	1
SIZE	1040	10.026	0.061	8.486	12.7
ROE	1044	0.078	0.334	-8.889	0.662
EM	1054	-0.063	0.099	-0.453	0.905
BM	1046	0.793	0.291	0.174	2.515
BIG4	1073	0.581	0.493	0	1
AUDOP	1054	0.971	0.169	0	1

Table 7.2: Executive and leadership shareholding and cash compensations
Panel A: The percentage of shareholdings

	Executive		Total Leadership	
	Shareholding=0	Shareholding>0	Shareholding=0	Shareholding>0
Obs	809	239	419	629
Mean	0	0.254	0	0.971
Std. Dev.	0	2.833	0	6.111
Min	0	0	0	0
Max	0	43.653	0	57.222

Panel B: Total cash compensation in Chinese Yuan in Thousands

Executives		Leadership		Executives		Leadership	
Percentiles	Smallest	Percentiles	Smallest	Obs	1046	1047	
1%	238	111	463	245	Mean	2181	6496
5%	412	153	955	294	Std. Dev.	2164	8077
10%	632	161	1373	326	Skewness	4.672	6.315
25%	980	190	2440	332	Kurtosis	41.954	69.107
50%	1628		4387				
		Largest		Largest			
75%	2586	15900	7954	53000			
90%	4175	16900	12700	64900			
95%	5544	17700	17800	106000			
99%	11200	30700	38500	120000			

Panel C: Size of Leadership

Percentiles	Smallest	Obs	1054
1%	12	0	Mean
5%	15	0	Std. Dev.
10%	16	0	Skewness
25%	18	0	Kurtosis
50%	21		7.355
		Largest	
75%	25	41	
90%	29	41	
95%	32	56	
99%	37	61	

Table 7.3: Pearson Correlation Matrix

	ABTD	INDEP	BODSIZE	BODMET	DCEOD	BIG4	AUDOP	LOGMANPAY	LOGEXEPAY	MANSH	EXSH	LEV	EM	ROE	LOSS	SIZE
INDEP	0.077*															
BODSIZE	0.099*	-0.343*														
BODMET	0.022	-0.018	-0.007													
DCEOD	0.062	-0.031	0.025	0.057												
BIG4	0.135*	0.173*	0.132*	0.091*	0.032											
AUDOP	0.075*	0.027	-0.0008	-0.050	-0.006	0.066*										
LOGMANPAY	0.069*	0.065*	0.258*	0.234*	-0.073*	0.372*	0.099*									
LOGEXEPAY	0.081*	0.055	0.178*	0.255*	-0.064*	0.359*	0.111*	0.932*								
MANSH	0.007	-0.023	-0.038	0.045	-0.013	-0.111*	0.021	0.068	0.039							
EXSH	0.02	-0.009	0.065*	0.035	-0.111*	0.029	0.007	0.031	0.033	0.156*						
LEV	0.132*	0.162*	-0.0005	0.243*	0.068*	0.136*	-0.163*	0.117*	0.077*	0.044	0.051					
EM	0.194*	0.107*	-0.111*	0.162*	0.073*	-0.078*	-0.004	0.051	0.038	0.057*	0.02	0.097*				
ROE	0.082*	-0.057	0.033	0.012	-0.036	0.036	0.023	0.168*	0.187*	0.014	0.000	-0.134*	0.109*			
LOSS	-0.087*	0.034	-0.031	-0.002	-0.004	-0.031	-0.122*	-0.192*	-0.203*	-0.033	-0.01	0.167*	-0.192*	-0.367*		
SIZE	0.172*	0.163*	0.221*	0.071*	-0.014	0.484*	0.155*	0.398*	0.405*	-0.063*	0.014	0.036	-0.113*	0.126*	-0.147*	
BM	0.273*	0.133*	0.077*	0.139*	0.092*	0.320*	0.105*	0.204*	0.185*	-0.048	0.027	0.232*	0.070*	-0.027	0.029	0.119*

(Note: Asterisks * significant at 0.05 level)

7.4 Modeling the impact of executive/leadership compensation and board characteristics on tax avoidance activity

We estimate the regression in two different ways. Firstly, we estimate the regression with only information on executive/leadership compensation at one time. Secondly, we estimate the regression by including board of directors attributes. Three models are estimated. Equation 1 and 2 restrict the set of explanatory variables to firms' executive as well as firm leadership compensation and their relative ownership structure. Secondly, Equation 3 jointly considers the firm's board composition as well as compensation and ownership structure. All models include industry dummies and year dummies to control for industry and year effects. The specifications are as follows.

$$ABTD_{it} = \alpha_{it} + \text{executive compensation} + \text{executive shareholding} + \text{Control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} \text{ (equation 1)}$$
$$ABTD_{it} = \alpha_{it} + \text{leadership compensation} + \text{leadership shareholding} + \text{Control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} \text{ (equation 2)}$$
$$ABTD_{it} = \alpha_{it} + \text{executive/leadership compensation} + \text{shareholding} + \text{Governance characteristics} + \text{Control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it} \text{ (equation 3)}$$

Where:

$ABTD_{it}$ is the residual BTDS derived from BTDS fixed-effect model of tax sheltering activities in chapter five, which have been scaled by total assets. YEAR and IND are year and industry dummy variables. (Note: the detailed variables are defined in the variable definition in Appendix II)

We collect the cash compensation for executives (LOGEXEPAY) for the top 3 officers' total amount, and the average cash compensation for leadership per person (LOGMANPAY) (including all directors, supervisors and executives as proxy for firm leadership) is then calculated. Both executive shareholding (EXSH) and average leadership shareholding (MANSH) are also included, due to the fact the shares allocation to management is based on hierarchical

positions in Chinese firm leadership, executives with significant structural control and power can influence other employees' actions and remuneration (Li *et al.* 2007) and are provided with incentives for higher compensations and self-interests (Grabke-Rundell & Gomez-Mejia, 2002). EXSH refers to the percentage of executives while MANSH is average leadership shareholding percentage per person by firm leadership¹⁷, including shareholding of board and supervisors and executives, no repeated calculations. In consistent with most existing literature on executive compensation, we would take the natural log of compensation for top 3 officers and total compensation in consideration of right skewed distribution of executive and leadership pay (Rego & Wilson, 2012).

In model 3, six variables are included to further control for board characteristics and audit quality. board independence (INDEP) is measured as the proportion of independent director to the total number of director on the board; board size (BODSIZE) is measured as total number of board of directors on the board; board meetings (BODMET) is measured as the total number of board meetings conducted in a year; CEO duality (DCEOD) is measured as a dummy variable and is equal to 1 if the CEOs (or managing directors) additionally occupy the position of the chairman of the board, or zero if otherwise. Auditor type (BIG4) is measured as a dummy variable that is equal to 1 if the firm is a Big 4 accounting firm client and zero otherwise. Audit opinion (AUDOP) is measured as a dummy variable that is equal to 1 if the audit opinion is standard unqualified and zero otherwise.

Following prior literature, in all the three equations, we control for several firm-specific features that capture observable tax related proxies of tax sheltering activities including $LOSS_{it}$, LEV_{it} , ROE_{it} , $SIZE_{it}$, EM_{it} and BM_{it} which are proved to be associated with tax aggressiveness that is under the control of managers and boards (Manzon & Plesko, 2002; Dyreng *et al.* 2008;

¹⁷Alternatively, I test models using the total leadership shareholding and cash compensations, and our findings are consistent with the results reported.

Wilson, 2009; Frank, Lynch & Rego, 2009; Minnick & Noga, 2010). The inclusion of these control variables have been discussed in chapter 6. Variables in each of the models are deflated to control for any scale effects (Akbar & Stark, 2003). The reported results are based on OLS model estimation with presence of dummy variables. Meanwhile, we use robust standard errors by clustering on each firm to control for heteroscedasticity and autocorrelation (Petersen, 2009; Chen & Al-Najjar, 2012).

7.5 Regression results

7.5.1 Executive and board managerial cash compensation and tax aggressiveness

Table 7.4 provides the regression results for panel OLS models, coefficients on year and industry dummy variables are not reported. The R-square for each of models suggest that the independent variables are able to provide statistically significant information about level of tax aggressiveness captured in the models selected. Regarding the relationship between the effects of cash compensation on the level of tax aggressiveness in H1, our results in model 1 and 2 of Table 7.4 document significant and negative coefficients indicating that cash incentive compensation has a negative effect on tax sheltering activities, in consistent with the findings of Desai & Dharmapala (2006), Seidman & Stomberg (2011) and Armstrong *et al.* (2012). The findings show support for agency theory that increase in alignment of shareholders and manager interests through executive/leadership incentive compensation mitigate agency conflicts, which in turn induces managers to shelter less income and results in decreased tax planning, and firms with high levels of incentive compensation are less likely to require or benefit from additional tax shields from tax planning activities (Seidman & Stomberg, 2011). Alternative explanation for the causal interpretation of our findings would be the role of managerial control in setting compensation. In consistent with the emphasis on the agency problem between managers and shareholders, managers have less control and influence over their cash compensation from the view of optimal

contracting approach (Jensen & Murphy, 1990; Bebchuk & Fried, 2003), as a result, managers that are provided adequate incentive compensation packages lead to a decrease in tax planning activities. We carry out additional test on the subsample of firm leadership by the top 3 directors, model 5 and 6 show that the coefficient is still negative and highly significant which is in consistent with the agency theory explanations. Taken together, the results provide an understanding to the role of incentive compensation plays in motivating managers' efforts, which should aid in further research in examination of effective tax planning strategies. The estimate of potential explicit tax benefits associated with compensating executives as well as directors and supervisors should be useful to decision-makers in their design of incentive compensation plans (Phillips, 2003).

H2 test the influence of board composition and audit quality, specifically board size, board independence, board meeting, duality of CEO, Big 4 auditors and audit opinion on ABTDs. Model 3 and 4 of Table 7.4 show little support for H2. Only BODSIZE is significantly associated with ABTDs ($p < 0.1$), which is in consistent with findings of Beasley (1996), Evans (2004) and Moore (2012). The regression results document that the coefficient of independent directors (INDEP) is positive but not significant related to ABTDs. Since it is not clear whether independent directors increase or decrease level of tax aggressiveness of firms, we use an independent director dummy that takes the value of one if the proportion of independent directors is more than 50 percent of the board, and zero if otherwise, and we find qualitatively the similar results. In consistent with Caramanis and Lennox (2008) and Tsipouridou and Spathis (2014), we find weak or insignificant association between the audit quality and the level of tax aggressiveness, this suggest that auditors have relatively weak incentives to prevent the aggressive tax activities. As reported in the correlation table, the significant correlations between control variables LEV, EM, ROE, SIZE, LOSS and BM could also lead to higher standard errors and lower t-statistics associated with coefficient estimates of main explanatory variables of interest, making them insignificant (Phillips, 2003). Taken together, the lack of significance on the

board structure variables is consistent with Minnick & Noga (2010) and Wintoki *et al.* (2012), which suggest that board structure does not appear to be significantly associated with tax activities and show no evidence that the strength of corporate governance mechanisms moderate these relationship between incentive compensation and tax planning. In terms of the control variables, tax planning is shown to be significantly associated with LEV, EM, SIZE and BM in several of our regression model specifications ($p < 0.10$ or better).

Table7.4: Estimated regression results for cash compensations and tax aggressiveness

Model	(1)	(2)	(3)	(4)	(5)	(6)
LOGEXEPAY	-0.165*		-0.213**			
	(-1.74)		(-2.08)			
EXSH	1.240		-2.082			
	(0.24)		(-0.34)			
LOGMANPAY		-0.226**		-0.248**		
		(-2.41)		(-2.46)		
MASH		6.172		7.136		
		(0.97)		(1.06)		
TOP3DIRECTOR					-0.000***	-0.000***
					(-2.69)	(-2.77)
BODSHARE					0.245	0.228
					(0.70)	(0.63)
INDEP			0.062	0.118		0.047
			(0.14)	(0.27)		(0.11)
BODSIZE			0.023*	0.021*		0.024**
			(1.89)	(1.76)		(1.97)
BODMET			-0.002	-0.003		-0.004
			(-0.50)	(-0.56)		(-0.87)
DCEOD			0.156	0.149		0.153
			(1.22)	(1.15)		(1.18)
BIG4			0.084	0.090		0.070
			(1.29)	(1.39)		(1.12)
AUDOP			0.227	0.226		0.213
			(1.00)	(1.00)		(0.95)
LEV	0.540***	0.555***	0.551***	0.566***	0.551***	0.572***
	(3.62)	(3.71)	(3.46)	(3.55)	(3.70)	(3.59)
EM	1.785***	1.770***	1.838***	1.833***	1.781***	1.842***
	(5.06)	(5.03)	(5.17)	(5.19)	(5.06)	(5.21)
ROE	0.173	0.184	0.187	0.189	0.164	0.174
	(1.11)	(1.19)	(1.20)	(1.21)	(1.06)	(1.12)
SIZE	0.209***	0.216***	0.155***	0.166***	0.207***	0.154***
	(4.20)	(4.30)	(3.05)	(3.24)	(4.48)	(3.10)
BM	0.746***	0.756***	0.683***	0.688***	0.739***	0.682***
	(6.11)	(6.19)	(5.35)	(5.42)	(6.03)	(5.34)
LOSS	-0.023	-0.008	0.003	0.000	-0.010	0.022
	(-0.16)	(-0.06)	(0.02)	(0.00)	(-0.07)	(0.15)
Constant	-1.924***	-1.867***	-1.780***	-1.925***	-2.882***	-3.000***
	(-3.48)	(-3.79)	(-2.67)	(-3.22)	(-6.22)	(-5.48)
Observations	937	930	914	915	937	914
R-squared	0.196	0.199	0.208	0.209	0.198	0.209
Year dummies	controlled	controlled	controlled	controlled	controlled	controlled
IND dummies	controlled	controlled	controlled	controlled	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. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5% and 1%, respectively. Variable definitions are as follows: $ABTD_{it}$

are derived from BTDS model in previous section, figures in $ABTD_{it}$ are all multiplied by 100 for scale effects; $BODSIZE_{it}$ is total number of directors on board; $INDEP_{it}$ is the percentage of directors who are independent; $BODMET_{it}$ is the total number of meetings a board of directors has conducted in a year; $DCEOD_{it}$ is CEO-chair duality which is equal to 1 if the CEO and the chairman of the board is different person and 0 otherwise; $BIG4$ is the big 4 auditors which is equal to 1 if the firm is the client of big 4 auditors and zero otherwise; $AUDOP$ is audit opinion which is equal to 1 if it is standard unqualified opinion and zero otherwise; $LOGEXEPAY_{it}$ is log of the top three executives' compensation as the proxy for managerial compensation; $LOGMANPAY_{it}$ is log of average of management pay per person, including compensation of board of directors, supervisors, and executives; $MANSH_{it}$ is the average shareholding of directors, supervisors and executives; $EXSH_{it}$ is the total shareholding of executives; LEV_{it} is the leverage ratio; $LOSS_{it}$ 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; EM_{it} is the earning management measure which is calculated as profit before tax-operating cash flow; $SIZE_{it}$ is log of the market value of equity at the fiscal year-end t ; ROE_{it} is return on equity which is proxy for firm profitability; BM_{it} is the book to market ratio, which is calculated as ending total assets /market value as the proxy for the growing rate of a firm ; Year and industry dummies are also included in the model, coefficients on the year and industry dummies are not reported to conserve space.

7.5.2 Board effectiveness, cash compensation, and tax aggressiveness

The choice of a tax strategy may be affected by both the strategy costs and firms' governance structure. In this section, we study how governance structure interacts with executive compensation that jointly affects tax strategies. Prior literature such as Core *et al.* (1999) and Armstrong *et al.* (2012) has shown that various governance mechanisms are associated with compensation practices of firms. Ownership concentration and state ownership affect the level of executive compensation in China (Firth *et al.* 2006; Kate & Long, 2006a,b; Gu *et al.* 2010; Wang & Xiao, 2011). We repeat the analyses by including more governance variables: GOV is a dummy variable that equals to 1 if the Chinese listed firm is ultimately controlled by the government and 0 otherwise; OC is ownership percentage of controlling shareholders as the proportion of shares owned by the largest 10 shareholders, a higher level of OC implies a stronger influence of controlling shareholders on Chinese listed firms; while SHATTEND is the attending rate of shareholding meetings in a year which is proxy for shareholder activism. We include their interactions between these variables and executive as well firm leadership cash compensation in Model 1 and 2 and results are reported in Table 7.5.

In Table 7.5, all the three interaction variables between the cash compensation and three governance variables appear insignificant, and the total cash compensation for executive and firm leaders is consistently negative in determining the level of tax aggressiveness. It is possible that none of significant coefficients on our corporate governance interaction terms due to that cash compensation contracts can act as substitutes for other governance mechanisms in order to align incentives of managers with those of shareholders (Rego & Wilson, 2012). To explore this possibility, we decomposed total cash compensation into normal components of cash compensation and excessive or abnormal components of cash compensation. The normal cash compensation is based on firm-level characteristics, which is a product of managerial equity shareholding, board independence, Tobin's Q, return on equity as well as firm size (See Table 7.6). The excessive cash

compensation for executives and firm leader are calculated as the difference between their actual pay and the normal pay from the model predictions, which reflect managerial control and influence over their incentive compensations and capture the portion that is not associated with normal characteristics of the contracting environment (Armstrong *et al.* 2012). Then these two components are regressed against with proxy of tax planning activities respectively. The results show that the excessive components of cash compensation are still negatively related to our measure of tax aggressiveness, it can be interpreted that managers are motivated to engage in less-aggressive tax planning, and the incentive alignment may act as a substitute for other governance mechanisms.

Table 7.5: Interaction term of governance structure and cash compensation and tax aggressiveness

Model	(1)	(2)	(3)	(4)	(5)	(6)
LOGEXEPAY	-0.343*	-0.172*	-0.175*			
	(-1.76)	(-1.80)	(-1.82)			
EXSH	-24.236*	3.335	2.515			
	(-1.78)	(0.66)	(0.49)			
LOGMANPAY				-0.215**	-0.236**	-0.233**
				(-2.21)	(-2.51)	(-2.48)
MANSH				20.258*	6.07	6.12
				(2.45)	(0.93)	(0.95)
LOGEXEPAY*GOV	0.311					
	(1.42)					
LOGEXEPAY*OC		0.026				
		(0.94)				
LOGEXEPAY*SHATTEND			0.018			
			(0.62)			
LOGMANPAY*GOV				0.039**		
				(2.69)		
LOGMANPAY*OC					0.029	
					(0.91)	
LOGMANPAY*SHATTEND						0.016
						(0.47)
LEV	0.554***	0.545***	0.558***	0.553***	0.561***	0.575***
	(3.71)	(3.64)	(3.77)	(3.65)	(3.73)	(3.86)

EM	1.741*** (4.82)	1.805*** (5.11)	1.796*** (5.07)	1.764*** (4.91)	1.791*** (5.07)	1.782*** (5.03)
ROE	0.175 (1.11)	0.171 (1.09)	0.171 (1.10)	0.191 (1.22)	0.182 (1.16)	0.182 (1.17)
SIZE	0.169*** (2.83)	0.188*** (3.66)	0.203*** (3.86)	0.194*** (3.29)	0.196*** (3.74)	0.213*** (3.96)
BM	0.709*** (5.58)	0.720*** (5.91)	0.721*** (5.84)	0.717*** (5.69)	0.731*** (6.00)	0.733*** (5.93)
LOSS	0.0003 (0.00)	-0.017 (-0.12)	-0.019 (-0.14)	-0.005 (-0.04)	-0.004 (-0.03)	-0.005 (-0.04)
Intercept	-0.589 (-0.45)	-1.737*** (-2.95)	-1.863*** (-3.20)	-1.886*** (-3.53)	-1.679*** (-3.21)	-1.852*** (-3.56)
Observations	897	936	929	891	929	923
R-square	0.211	0.196	0.198	0.211	0.198	0.201
Year dummies	controlled	controlled	controlled	controlled	controlled	controlled
Industry dummies	controlled	controlled	controlled	controlled	controlled	controlled

Note: 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 are as follows: GOV_{it} is a dummy variable that equals to 1 if the Chinese listed firm is ultimately controlled by the government and 0 otherwise; OC_{it} is ownership percentage of controlling shareholders as the proportion of shares owned by the largest 10 shareholders; SHATTEND_{it} is the attending rate of shareholding meetings in a year. Year and industry dummies are also included in the model, coefficients on the year and industry dummies are not reported to conserve space.

Table 7.6: Predicted and excessive cash compensation and the level of tax aggressiveness
Panel A: Cash compensation models

Year	2006-2012	2006-2012
Method	OLS	OLS
Dependent variables	ABTD	ABTD
Predictedlogexe	2.18** (2.05)	
Predictedloglp		1.968** (2.21)
LEV	0.328** (2.12)	0.316** (2.04)
EM	2.05*** (5.04)	2.02*** (4.99)
SIZE	-0.47 (-1.50)	-0.398 (-1.52)
BM	0.606*** (4.49)	0.568*** (4.07)
LOSS	-0.135 (-0.87)	-0.142 (-0.92)
Intercept	-9.02*** (-2.77)	-6.54*** (-3.46)
Observations	944	944
R-square	0.20	0.20
Year dummies	controlled	controlled
Industry dummies	controlled	controlled

Note: we use OLS model to estimate the expected/normal cash compensation based on determinants including managerial equity shareholding $Shareholding_{it}$ and board independence $B.IND_{it}$ as measures of managerial power in determining their compensations, Tobin's Q ratio as a proxy for firm growth opportunities, return on equity ROE_{it} as firm profitability and firm size measured as natural logarithm of market capitalization $LOG(MC)_{it}$. The model is as follows:

$$Pay_{it} = \alpha_{it} + \beta_1 Shareholding_{it} + \beta_2 LOG(Tobin's\ Q)_{it} + \beta_3 ROE_{it} + \beta_4 LOG(MC)_{it} + \beta_5 B.IND_{it} + YEAR + IND + \epsilon_{it}$$

When decomposing the realized cash compensations into their expected normal component and excessive component, then these excessive components are regressed against with our proxy of tax planning activities for further analysis, the model is as follows:

$$ABTD_{it} = \alpha_{it} + \text{Excessive cash component} + \text{Control variables} + \text{YEAR} + \text{IND} + \varepsilon_{it}$$

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. Coefficients on the year and industry dummies are not reported to conserve space. Panel A reports the estimated models for the expected cash compensation for top executives, top directors and average cash compensation per person for firm leadership, with the sample of total number of firms involved in the previous sample selection over 2006 to 2012. In Panel B, the excessive/abnormal cash compensation values are calculated as the difference between the actual compensations minus the expected compensation values predicted by panel A regression models. The dependent variable in Panels B is the abnormal BTDS, proxy for the level of tax aggressiveness; $ABTD_{it}$ are all multiplied by 100 for scale effects. LSH_{it} refers to the average shareholding percentage per person by firm leadership groups, including directors, supervisors, and executives; $EXSH_{it}$ refers to the total of the top 3 executives' shareholding; $BODSH_{it}$ refers to the total of the board of directors' shareholding. $LOGLP_{it}$ is the log of average leadership cash compensation per person in thousands of Chinese Yuan; $LOGEXE_{it}$ is the log of the total for the top 3 executives' cash compensation in thousands of Chinese Yuan. ROE_{it} is the return on equity using earnings before extraordinary items; $LOGTOBINQ_{it}$ is calculated as the total market value of the equity and debt divided by the book value of assets excluding intangible assets, calculated using values at the year's end; $BIND_{it}$ is the number of independent directors to total number of directors ratio; $LOG(MC)_{it}$, the log of total market capitalization of both tradable and restricted A and B shares in Chinese Yuan.

Panel B: Excessive cash compensation and the level of tax aggressiveness

Year	2006-2012	2006-2012
Method	OLS	OLS
Dependent variable	ABTD	ABTD
Excessivelogexp	-0.168* (-1.78)	
Excessiveloplp		-0.215** (-2.30)
Observations	942	943
R-square	0.187	0.189
Control Variables	Yes	Yes
Year dummies	controlled	controlled
Industry dummies	controlled	controlled

7.6 Further analysis

7.6.1 Impact of ownership on the relationship between executive compensation and tax aggressiveness

In order to determine the impact of ownership on the association between executive compensation and the level of tax aggressiveness, alternative specification of the models are tested and reported in Table 7.7. We split the sample into two subgroups based on the median of state ownership (20 percent). The variables of interests, executive and firm leadership cash compensation is negatively and significantly associated with the level of tax aggressiveness for firms with a lower level of state ownership. The results suggest that the effectiveness of incentive compensation in constraining tax planning activities when the state ownership is at lower levels.

7.6.2 Inclusion of supervisory board in China

Due to a two-tier board structure of Chinese listed firms, based on China's company law, the supervisory board has the responsibility to monitor the financial statements and accounting system of the firm (Dahya *et al.* 2003). Their impact on the level of tax aggressiveness and accounting informativeness has been seldom examined given the few countries have the supervisory boards. In our study, we add two variables SUPSIZE (size of supervisory board) and SUPMTG (supervisory board meetings) to proxy for the strength of supervisory board. As seen from Table 7.8., the regression results remain consistent with previous findings, but the coefficients on these two variables related to supervisory board are statistically insignificant, no monitoring effect of supervisory board size and meeting is found, which indicate the inactive and ineffective monitoring role of supervisory board in constraining the tax planning activities of Chinese listed firms (Firth, Fung & Rui, 2007a.b; Ding, Wu, Li & Jia, 2010; Wang, 2007); it is often undermined by its composition (Wang, 2007). As a result, it can be argued that there is still a strong need to improve the effectiveness of the supervisory board and strength the monitoring function of the supervisory board.

Table 7.7: Further analysis: Split into subsamples on the median of state ownership

Model	High state ownership (1)	Low state ownership (2)	High state ownership (3)	Low state ownership (4)	High state ownership (5)	Low state ownership (6)	High state ownership (7)	Low state ownership (8)
LOGEXEPAY	-0.013 (-0.07)	-0.229** (-2.17)	-0.147 (-0.75)	-0.237** (-1.97)				
EXSH	-0.968 (-0.04)	4.900 (1.00)	-9.469 (-0.35)	4.104 (0.76)				
LOGMANPAY					-0.090 (-0.51)	-0.292*** (-2.66)	-0.163 (-0.95)	-0.291** (-2.33)
MANSH					1,429.491*** (3.01)	8.761 (1.33)	1,792.039** (2.29)	8.905 (1.15)
INDEP			-0.502 (-0.80)	0.351 (0.57)			-0.548 (-0.90)	0.428 (0.70)
BOSIZE			0.031* (1.72)	0.015 (0.89)			0.026 (1.44)	0.014 (0.86)
BODMET			0.006 (0.45)	-0.003 (-0.68)			0.007 (0.53)	-0.004 (-0.75)
DCEOD			-0.181 (-0.77)	0.305** (2.06)			-0.203 (-0.87)	0.296** (1.98)
BIG4			0.153 (1.41)	0.049 (0.56)			0.124 (1.15)	0.064 (0.71)
AUDOP			-0.228 (-1.11)	0.402 (1.38)			-0.233 (-1.15)	0.401 (1.38)
LEV	0.454** (1.97)	0.527*** (2.64)	0.403 (1.65)	0.608*** (2.82)	0.465** (2.00)	0.554*** (2.75)	0.441* (1.79)	0.625*** (2.89)
EM	1.557*** (2.61)	1.776*** (3.97)	1.647*** (2.74)	1.755*** (3.95)	1.527** (2.58)	1.769*** (3.98)	1.615*** (2.70)	1.754*** (3.99)
ROW	0.582 (1.31)	0.048 (0.72)	0.564 (1.25)	0.079 (1.28)	0.573 (1.26)	0.061 (0.99)	0.560 (1.23)	0.084 (1.39)

SIZE	0.230** (2.54)	0.166*** (2.69)	0.187* (1.90)	0.104* (1.69)	0.249*** (2.79)	0.177*** (2.80)	0.222** (2.23)	0.122** (1.97)
BM	0.713*** (2.89)	0.749*** (5.01)	0.677** (2.56)	0.674*** (4.32)	0.735*** (3.00)	0.765*** (5.11)	0.710*** (2.69)	0.680*** (4.37)
LOSS	0.455** (2.02)	-0.401* (-1.84)	0.436* (1.91)	-0.342 (-1.56)	0.463** (2.01)	-0.367* (-1.66)	0.445* (1.95)	-0.342 (-1.56)
Constant	-3.268*** (-3.11)	-0.895 (-1.41)	-1.992* (-1.74)	-1.233 (-1.51)	-3.117*** (-3.53)	-0.930 (-1.59)	-2.354** (-2.40)	-1.385* (-1.84)
Observations	358	579	352	562	356	574	352	563
R-squared	0.226	0.227	0.239	0.248	0.235	0.229	0.247	0.251
Year dummies	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled
IND dummies	controlled	controlled	controlled	controlled	controlled	controlled	controlled	controlled

Note: High state ownership is defined as being a fraction exceeds the median value of state ownership and low state ownership is defined as being a fraction exceeds the median value of state ownership. 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. Asterisks *, **, *** denote two-tailed statistical significance at 10%, 5% and 1%, respectively. Variable definitions follows table 7.4.

Table 7.8: Further analysis: Control for supervisory board

Model	(1)	(2)	(3)	(4)
LOGEXEPAY	-0.186*		-0.210*	
	(-1.83)		(-1.89)	
EXSH	1.582		-1.973	
	(0.29)		(-0.32)	
LOGMANPAY		-0.230**		-0.235**
		(-2.26)		(-2.15)
MANSH		6.441		6.081
		(1.02)		(0.89)
INDEP			0.064	0.112
			(0.13)	(0.23)
BODSIZE			0.020	0.018
			(1.47)	(1.35)
BODMET			-0.004	-0.004
			(-0.60)	(-0.68)
DCEOD			0.171	0.165
			(1.29)	(1.24)
BIG4			0.047	0.052
			(0.68)	(0.75)
AUDOP			0.236	0.232
			(0.99)	(0.97)
SUPSIZE	0.009	0.007	0.004	0.003
	(0.49)	(0.37)	(0.19)	(0.15)
SUPMET	0.008	0.008	0.011	0.012
	(0.42)	(0.46)	(0.56)	(0.60)
LEV	0.529***	0.548***	0.554***	0.571***
	(3.32)	(3.42)	(3.23)	(3.34)
EM	1.786***	1.781***	1.836***	1.832***
	(4.75)	(4.75)	(4.87)	(4.88)
ROE	0.172	0.173	0.179	0.179
	(1.12)	(1.13)	(1.15)	(1.15)
SIZE	0.187***	0.203***	0.155***	0.164***
	(3.54)	(3.78)	(2.86)	(3.00)
BM	0.846***	0.852***	0.794***	0.797***
	(6.59)	(6.61)	(5.87)	(5.89)
LOSS	-0.077	-0.084	-0.056	-0.061
	(-0.46)	(-0.51)	(-0.34)	(-0.37)
Constant	-1.738***	-1.862***	-1.914***	-2.078***
	(-2.95)	(-3.52)	(-2.63)	(-3.19)
Observations	837	838	823	824
R-squared	0.208	0.210	0.219	0.220

Year dummies	controlled	controlled	controlled	controlled
IND dummies	controlled	controlled	controlled	controlled

Note: 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 are as follows: SUPSIZE_{it} is the size of supervisory board and SUPMTG_{it} is the supervisory board meetings to proxy for the strength of supervisory board. Other variable definitions follow Table 7.4.

7.7 Conclusion

Tax sheltering activities can increase net assets, after-tax cash flows and firm performance of a firm. In this study, we examine the relationship between firms' executive/leadership incentives as well as board characteristics and their level of tax aggressiveness upon Chinese institutional environment, which provide new insights on how these variables affect tax planning activities separately and together. In adhere with agency theory; it is argued that mechanisms of corporate governance can play a vital role in affecting and promoting corporate tax aggressiveness (Minnick & Noga, 2011). To our knowledge, this is the one of few papers to directly study link between the executive incentives and measure of their firm's tax planning in China. Collectively, this study extends the existing literature on the subject of certain corporate governance and tax aggressiveness and contributes to the emerging paradigm that linking the main factors of corporate governance to that tax sheltering activities. Moreover, this study provide evidences that are consistent with the existing research of tax planning and can assist further studies in the examination of effective tax planning strategies. The findings should be of interest to tax policymakers who seek to identify the conditions that give rise to an increasing level of corporate tax sheltering activities.

Applying data for both A-share and B-share non-financial firms listed in Shanghai and Shenzhen Stock Exchanges between 2006 and 2012, we find that, on average, firms with higher-powered cash compensation is associated with lower levels of tax aggressiveness, in a manner that is consistent with optimal contracting approach, which supports the significance of incentive compensation to be another determinant of tax aggressive activities. We also find some evidence that stronger monitoring by the board (i.e. a smaller board) is associated with lower permanent ABTDs. However, the board characteristics do not appear to have a significant consistent effect on constraining tax aggressiveness. However, the strength of these empirical results may be improved by increase in the sample size.

The subject of corporate governance and tax is still in its initial stage and requires more reflection. This study was conducted within a limited sample of 1080 Chinese listed firms which restricts the generalizability of results. However, the preliminary results can provide an area for further research. Better results can be extracted with a larger sample. In addition, non-availability of data on executive stock option and equity-based compensation restrict the scope of this study. Furthermore, this study focuses on only few different variables of corporate governance mechanisms, introducing variables related to managers' entrenchment could provide a more insight into firms' tax aggressiveness behaviors (Kouki, *et al*, 2011).

It is worth noting that one caveat is that our empirical results cannot be interpreted as demonstration of a causal link between board composition and incentive compensations and tax aggressiveness due to the issue of endogeneity problem that have effects on board literature (Hermalin & Weisbach, 2003; Xie, Davidson & Dadalt, 2003). An active board with its financial orientation may impact the level of tax aggressiveness but the level of aggressiveness may in turn affect the subsequence selection of board members. Nevertheless, our results do suggest that an associative link between the board characteristics as well incentive compensations and the level of aggressiveness.

8.0 Conclusion and future research

The previous chapters extend the research on corporate governance practices of transitional economies by presenting an empirical analysis of the impact that the internal corporate governance mechanisms of Chinese listed firms have on the level of tax aggressiveness. We place corporate tax strategies within the Chinese institutional framework and consider them as institutional arrangements generating transactions costs within the agency structure of firm. The tax sheltering, earning manipulations as well as accounting scandals have drawn attentions from researchers, regulators and investors. After audit fees, tax-related service are one of the largest source of fee income for Chinese accounting firms. The concerns raised by the regulation and other stakeholders regarding the growing differences between financial accounting income and taxable income and its potential association with the increased tax planning activities by firms have led the governments to implement a series of reforms to prevent such behaviors. It is generally recognized that the book income and taxable income are calculated using rules and laws that differ in the respective primary objectives of financial reporting and income tax expense reporting: the former is concerned with providing information useful for investors to assess firm value and decisions while the latter is more concerned with raising fund for increasing government revenue and provide incentive to achieve certain economic and social activities. Therefore, a gap between these two measures of income may merely capture differences in firms' book and taxable income and irrespective of earning management and tax management strategies that managers of a firm may employ. However, Prior research from U.S. context examine the extent to which tax disclosure contain information about earning information and suggest that book-tax income differences (BTDs) are related to firm's tax management, earning management activities and operating performance in some settings (e.g. Phillips *et al.* 2003, 2004; Lev and Nissim, 2004; Hanlon, 2005; Blaylock *et al.* 2012). It is further argued by some studies that the growing BTDs may arise as a result of the increased tax aggressiveness behaviors (e.g. Desai, 2003; Frank *et al.* 2009; Wilson, 2009; Lisowsky, 2010). Therefore, Book-tax differences can arise

from the result of mechanical difference between accounting rules and tax laws; they can also be due to a firm's tradeoff between the financial reporting incentive to increase book income and the tax incentive to lower taxable income.

Making use of China's unique institutional characteristics and data advantages in the notes to tax reconciliation, we examine the relationships between Chinese BTDs with various corporate governance mechanisms. We investigate how unique features of Chinese corporate governance, tax policies, accounting standards, government-related ownership as well as incentive compensation influence managerial opportunistic decisions in a leading emerging market. We follow the study of Tang & Firth (2011) by using a different method to measure book-tax differences (i.e. tax-effect BTDs) and separating BTDs into mechanical differences and opportunistic differences which help isolate managers' manipulations. We identify and hypothesize drivers of the total book-tax differences and conduct a regression model to explain them. The fitted values from the regression are the normal BTDs and the residual is the abnormal BTDs. The abnormal BTDs are of interest to proxy for tax aggressiveness and to examine the relationship between internal governance mechanisms and tax aggressiveness in main analyses.

Even after change in tax policy, income tax revenue remains one of major sources of central and local government revenue. While the traditional view of corporate tax avoidance as value enhancing, our overall conclusion is that investors may not always value tax planning which is consistent with an emerging stream of literature (e.g. Wahab & Holland, 2012) due to the potential agency costs as well as other non-tax costs associated with tax planning activities.

Meanwhile, using a sample of 1080 listed firms over the 2006 -2012 time period, the results show a positive and significant association between the abnormal book-tax differences and the proxies for political connections as well as the interaction terms between political connections and market forces,

after controlling for confounding factors. State ownership as well as ownership concentration represents a strong form of political connections and a more direct tie with Chinese government while institutional ownership represents the form of market forces, our evidence suggest that political connections are a significant determinant of the abnormal book-tax differences and their impacts should be accounted for. Incentive compensation appears to be another significant determinant of tax aggressive activities. In particular, our results provide evidence that higher-powered cash compensation is associated with lower levels of tax aggressiveness, in a manner that is consistent with optimal contracting approach, which contribute to our overall understanding of the role of incentive compensation that plays in motivating managers' efforts. The results however, do not indicate the influence of board characteristics and audit quality on tax aggressiveness, which provide implications to regulators to strength the monitoring effectiveness of the board of directors and auditors.

Our study should be of interest to tax regulators that are concerned with the tax reporting practices of Chinese listed firms and to researchers that are interested in the effect of different corporate governance mechanisms on tax sheltering activities. This study makes several important contributions to the literature. Firstly, this study contribute to the existing literature that links firms' corporate governance with those of tax aggressiveness by conducting a comprehensive analysis of the impact of the interaction between firms' strength of corporate governance and tax planning activities. The extant literature into corporate tax aggressiveness and corporate governance is mostly U.S.-based and does not necessarily translate into Chinese setting due to the differences approach to compliance and enforcement and diverse tax laws and approaches to compliance and enforcement. We extend the applicability of tax theory and agency theory using a setting in a transition economy by taking advantage of China's unique institutional features and data availability. Secondly, by using the recently available tax reconciliation data from notes on financial statements required under *ASBE 18* income taxes (ASBE, 2006), this study separates measure of tax-related data (normal and abnormal BTDs) to

examine the different effect of varying level of tax aggressiveness, previous works have generally relied on a lower level of separation of BTDs, such as Mills & Newberry, 2001; Desai & Dharmapala, 2009; Frank, Lynch & Rego, 2009; Tang & Firth, 2011). Thirdly, The sample size is limited due to data availability problem in annual reports disclosure of Chinese listed firms, which limits the applicability of research results to represent the whole Chinese stock market. However, it does add to U.S. based BTDs research by providing international evidence of implications for the mechanical and opportunistic BTDs in interpreting the corporate governance factors that affect tax aggressiveness, in an emerging economy. To my best knowledge, this is the first of few studies that investigates the role and usefulness of BTDs in Chinese stock markets. Our finding suggest that while some research results in the U.S. based studies can be generalized to China, empirical evidences from Chinese setting supplement the current BTDs literature. Fourthly, the regression analysis is conducted over a seven year period; therefore help recognize the components of tax aggressive activities and the attitudes of corporate governance structure to tax aggressiveness may vary over time. Finally, the empirical evidences on tax and corporate governance mechanisms provide policymakers in terms of tax and financial reporting areas with a better understanding of potential effects of changes in tax law on Chinese listed firms' tax sheltering activities.

Despite its novel contributions, our study is subject to several limitations. Firstly, the sample is limited to Chinese public listed firms as we were only able to collect data in term of tax aggressiveness that is disclosed in its published financial reports. Information about tax aggressiveness among private firms is not made publicly available due to confidentiality concerns. Secondly, the sample size is not large due to the data availability problem in annual reports disclosure of Chinese listed firms. However, it appears to be satisfactory given the sampling time period of seven years; our study does not consider the industry and regional preferential tax incentives due to the limited data sample, tax incentives are an important factor that affect listed firms' tax

policies, which can be studied for further research independently (e.g. Wu, Wang, Gills & Luo, 2012)

Thirdly, the use of book-tax differences as a measure of a firm's aggressive tax planning is also subject to limitations. Book-tax differences are estimated from publicly available financial statements, while this calculation has measurement error inherent, but it is suitable in our setting as it is the measure that available to the public. Capturing both a firm's book income and its taxable income would be allowed for better control of scaling issues between the book and taxable income as well as the elimination of ambiguity on the sign of the book-tax difference ratio, especially when the book-tax differences are negative (Smith, 2000). However, Book-tax differences are not only the function of tax avoidance, but also the function of earning quality, and by definition book-tax differences can only capture non-conforming tax avoidance (Hanlon & Hertzman, 2010). Meanwhile, book-tax differences can arise as a result of managerial opportunistic behaviors in the process of financial reporting that are irrelevant to tax sheltering activities (Frank, Lynch & Rego, 2009). No measure can be perfect, in order to prove that the resulting residual is a good proxy for the firm's tax planning activity, a validation check can be taken use the sample of firms that are involved in litigation in terms of aggressive tax sheltering activities (Desai & Dharmapala, 2009). The demonstration would be that the resulting proxy for tax sheltering activities should take on large values for a given firm in those years that are accused of aggressive tax planning activities than in other years. However, as it is difficult to obtain the data for firm involved in tax sheltering litigation in Chinese context and further study can also work on it.

Fourthly, we applied the data collected from the tax reconciliation to test for the different type of tax aggressiveness, however, there is no regulation on the tax reconciliation, and different listed have their own ideas on the tax reconciliation in their tax notes without further explanation which might cause ambiguity when in the stage of data collection and data analysis. In addition, as we can see that the firm-year observations from notes on tax reconciliation

in the annual reports decrease from the recent years, especially from the year 2012, which should raise the attention from related tax administration and regulation that, increasing their monitoring on listed firms' compliance with the new accounting standards (ASBE, 2006). Meanwhile, we suggest more disclosure in annual financial reports for academic study; financial accounting disclosures have not yet reached the level of detail found in financial reports of companies reporting under IASB standards in mature western economies. For example, the annual reports of Chinese listed firms do not have much disclosure as that of IAS rules, such as foreign income or segmental reporting on foreign operation or subsidiaries, which limit the applicability in the empirical studies. With the advent of mandatory disclosure on tax-related notes in annual reports, future studies will be able to draw on a larger number of firm-year observations, which would be certainly allow more reliable inferences.

Finally, another limitation of this study is the lack of previous works on this topic upon the Chinese institutional setting, which result in regression models that obviously do not have strong capacity to support and explain the results. The results of our study are context-specific and should be viewed cautiously when generalized to other contexts. Although we have been very tentative regarding the generalizability of this study to other settings, there are theoretical reasons to believe that firms in other emerging economies may experience similar dynamics. This speculation needs to be validated by future research efforts undertaking in other emerging environments.

This study opens avenues for further study in the area of corporate governance structure and the level of tax aggressiveness. Further research into the interaction of tax aggressiveness and corporate governance could examine several important issues, Firstly, as indicated by Lanis & Richardson (2011) that, we have considered some internal corporate governance mechanisms that could affect tax aggressiveness, further analysis of other director characteristics such as practices that outsider directors exert over board, management style, difference in personal traits of directors, executive

characteristics and other behavioral features may be worthwhile. Meanwhile, as we solely concentrate on internal corporate governance mechanisms in the current studies, the inclusion of both internal and external governance attributes in the construction of governance indices can be considered as a topic for future research. Secondly, future studies can be conducted for firms in financial and insurance industries, where the legal and regulatory bodies play a vital role in monitoring managers' activities. Thirdly, a comparative study with a mature western economy such as the UK or US would allow additional understanding of the differential factors at play. Finally, another dimension that might be study change in tax aggression over time, that is, how do changes in institutional arrangements and tax rates/preferences over time influence the degree of tax aggression?

Appendix I: Variable Definition

	Variable Definition	Variable Dataset
<i>Tax aggressiveness variables</i>		
BTD_{it}	Reported tax-effect total permanent BTDS in year t, scaled by total assets, and pre-2008 BTDS are adjusted for the change in tax rate after 2008	Notes on financial reports
<i>Institutional variables that are unrelated to tax planning</i>		
$TURNOVER_{it}$	Total turnover for firm i in year t, scaled by total assets	CSMAR-P/L account
OPE_{it}	Operating expenses for firm i in year t, scaled by total assets	CSMAR-P/L account
$OPEPROFIT_{it}$	Operating profit before interests and taxes for firm i in year t, scaled by total assets	CSMAR-P/L account
$TOTALPROFIT_{it}$	Pre-tax profit for firm i in year t, scaled by total assets	CSMAR-P/L account
$LAG1PROFIT_{it}$	Prior one year lagged pre-tax profit for firm i in year t, scaled by total assets	CSMAR-P/L account
$LAG2PROFIT_{it}$	Prior two year lagged pre-tax profit for firm i in year t, scaled by total assets	CSMAR-P/L account
$ASSETS_{it}$	Log of (total assets divided by average total assets across the whole sample)	CSMAR-B/S account
INV_{it}	Investment income for firm i in year t, scaled by total assets	CSMAR-P/L account
$INTEREST_{it}$	The finance interest income for firm i in year t	CSMAR-P/L account and WIND database
<i>Year</i>	Year dummies	N/A
<i>IND</i>	Industry Dummies	CSMAR
<i>Empirical chapter on ownershipstructure and tax aggressiveness</i>		
OC_{it} :	Ownership concentration, it is calculated as the percentage of shares held by the largest ten shareholders over the total outstanding shares	WIND

OF_{it}	The ownership shares fraction	
OF_STA_{it}	State shares fraction, it is the percentage number of state shares as well as legal person shares over total outstanding shares.	CSMAR-CCGR
OF_INST_{it}	Institutional share fraction, it is the level of institutional shareholding over total outstanding shares	WIND
GOV_{it}	An indicator variable equal to one when the largest shareholder is government-related, and zero otherwise, for firm i in year t ;	CSMAR-CCCR
<i>Empirical chapter on executive and board managerial compensation and tax aggressiveness</i>		
$EXSH_{it}$	Executive share fraction, it is the percentage number of shares held by top 3 executives over total outstanding shares	CSMAR
$MANSH_{it}$	Management shareholding percentage, including board and supervisors and executives holdings, no repeated calculations	CSMAR
$LOGEXE_{it}$	Log of the top three executives' compensation as the proxy for managerial compensation. Executive compensation is the aggregated pay of the top three officers, defined as the sum of basic salary and bonus excluding allowance	CSMAR-CCGR database
$LOGMANPAY_{it}$	log of management pay, including compensation of board of directors, supervisors, and executives	CSMAR-CCGR database
$BODSIZE_{it}$	Proxy for board size, log of the total number of directors on board or the total number of directors on board	CSMAR-China listed firms' Corporate governance research (CCGR) database
$INDEP_{it}$	The percentage of directors who are independent $Indep_{it} = \frac{\text{Number of independent directors}}{\text{Number of total directors}}$	CSMAR-CCGR database
$DCEOD_{it}$	CEO-chair duality, equal to one if the CEO and Chairman is different person and zero otherwise	CSMAR-CCGR database
$BODMET_{it}$	Board meetings, the total number of meetings a board of directors has conducted in a year	CSMAR-CCGR database
$AUDOP_{it}$	A dummy variable that takes one if the audit opinion is standard unqualified and zero otherwise.	CSMAR
$BIG4_{it}$	A dummy variable that takes one if a firm is a big 4 accounting firm client and zero otherwise	CSMAR

<i>Firm-specific characteristics as control variables</i>		
LEV_{it}	the total long-term debt divided by total assets to control non-financial costs	CSMAR
$LOSS_{it}$	Loss dummy variable, which is equal to one if firm i reports a loss, where loss is net income before extraordinary items and zero otherwise	CSMAR
$SIZE_{it}$	It can be defined as the log of the market value of equity at the fiscal year-end t, or the log of the book value of total assets or total annual sales, depending on the run of the model.	CSMAR
$LNTA_{it}$	the logarithm of total assets, a measure of firm size	CSMAR
ROE_{it}	ROE=return on equity, Proxy for firm profitability	CSMAR
$TOBINQ1_{it}$	Tobin's Q, Proxy for firm value, 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	CSMAR
$TOBINQ2_{it}$	Tobin's Q, measured 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	CSMAR
$TOBINQ3_{it}$	Industry-median adjusted Tobin's Q	CSMAR
VOL_{it}	Volatility of monthly return for firm i in the year t	WIND
BM_{it}	Book-to-market ratio, which is calculated as Ending Total assets /Market Value as the proxy for the growing rate of a firm	CSMAR
CFO_{it}	Cash flow capacity, which is calculated as cash flow from operating activities divide by ending total assets, as the proxy for the focus of investor and analyst scrutiny	CSMAR
ATR_{it}	applicable tax rate, which is the applicable tax rate that are disclosed in note on tax reconciliation	Annual reports-Notes to financial statements
$CAPINT_{it}$	Capital intensity, which is calculated as fixed assets divided by total assets, in order to control for the opportunities related to investments in fixed assets	CSMAR
EM_{it}	Earning management measure, which is applied	CSMAR

	to control for the effect of earning measure, which is calculated as profit before tax-operating cash flow (CFOs); however, in order to ensure that tax is excluded from CFOs. CFOs is adjusted by (CFO-tax refund+ various tax paid)	
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**Appendix II: The major differences between corporate income
tax laws and Chinese GAAP**

The major differences between corporate income tax laws and Chinese GAAP				
Type of BTDs	Items	Type of items	Chinese income tax law	Chinese GAAP
Permanent	Sponsor costs	Non-operating expenses	Non-deductible	Directly recognized as profit & loss in the year they occur, add to 'non-operating expenses' account
Permanent	Public donation costs	Non-operating expenses	Deductible is limited to the 12% of annual accounting profit	Directly recognized as profit & loss in the year they occur, add to 'non-operating expenses' account
Permanent	Non-public donation	Non-operating expenses	Non-deductible	Expensed
Permanent	Penalties and fines	Non-operating expenses	Non-deductible	Directly recognized as profit & loss in the year they occur, add to 'non-operating expenses' account
Permanent	Expenditure without authorized invoice	Non-operating expenses	Non-deductible	Directly recognized as profit & loss in the year they occur, add to 'non-operating expenses' account
Permanent	Account receivables cannot be paid	Account receivables	Taxable income	No limits, Add to 'capital surplus' account
Permanent	Debt restructuring income	Account receivables	Taxable income	Add to 'capital surplus' account
Permanent	Entertainment fees	Management expenses	Entertainment fees range is 0.3% to 0.5%, it should be 0.5% for the net sales below RMB	No limits, Add to 'management expense' account

			15 million and 0.3% for the net sales above RMB 15 million	
Permanent	Research and development costs	Management expenses	Non-deductible for the amount allocated by the State Finance and higher authorities, additional 50% of R&D can be deducted from taxable income,	Expensed all R&D (except that patent registration and legal costs are capitalized)
Permanent	Union fees for domestic enterprises	Management expenses	Provision of 2% of the total salaries is deductible, the excess part cannot be deducted	Expensed when incurred
Permanent	Welfare fees for domestic enterprises	Management expenses	The employee welfare expenses incurred by an enterprise are deductible to the extent that it does not exceed 14% of the total amount of salaries and wages	Expensed when incurred
Permanent	Borrowing costs	Financial costs	Interest rate is limited to the existing commercial rate, the excess cannot be deducted	Limited to the capitalized assets or borrowing ranges
Permanent	Use self-built products for construction, investment, sponsorship, donation or welfare purposes	Equivalent sales	Taxable income if products used for items that are non-deductible, including VAT, sales tax, consumption tax	No income recognized
Permanent	Tax loss and tax loss utilized	Loss remedy	Tax losses incurred previously can be carried forward for a following period of up to 5 years, thereby reducing later taxable income	Recognized as profit & loss in the year they occur
Permanent	Consolidation	Combination of enterprise	Income tax is calculated based on independent legal entity,	Consolidation is required
Permanent	Government subsidies	Non-operating income	Non-taxable	Non-operating income
Permanent	Donation received	Other income	Donation received	Add to 'capital

			in cash and non-cash assets must be recorded as taxable income	surplus' account (not the accounting income) and increase shareholders' equity
Permanent	Interest on national bond	Other income	Tax-exempt income, and is excluded from taxable income	Revenue recognized as investment income
Permanent	Dividend from foreign invested enterprises	other income	Tax-exempt income, dividend received by foreign invested enterprises are non-taxable	Non-operating income, Revenue recognized as investment income
Temporary	Provision for impairment of fixed and intangible assets, short-term and long-term investment	Assets	Non-deductible	Expensed when made
Temporary	Depreciation-fixed assets	Assets	Using straight-line methods and the residual value not less than 5% of original value. Other methods can be adopted only if approved by State Administration of Taxation. Useful life for building, machinery equipment and haulage plant is 20,10,5 years respectively	The depreciation method, minimum useful life and scrap value can be determined by management
Temporary	Depreciation-intangible assets	Assets	No less than 10 years	No less than 10 years
Temporary	Held-for-trading financial assets	Assets	Tax base is determined by historical value	Fair value accounting
Temporary	Available-for-sale financial assets	Assets	Tax base is determined by historical value	Fair value accounting
Temporary	Organization costs	Management expense	The expenses of an enterprise are classified into revenue-related expenses and capital-related expenses. Revenue-related expenses shall be deducted in the current accounts,	Expensed when incurred

			while capital-related expenses shall be deducted by instalments or included in the relevant capital costs and may not be directly deducted in the current accounts.	
Temporary	Fixture and fitting fare	Long-term deferred expenses	Amortize over no less than 5 years, that is , the deduction is allowable up to 20% for the first year	Expensed when incurred
Temporary	Improvement expenditure of fixed assets	Long-term deferred expenses	Amortize over no less than 5 years, that is , the deduction is allowable up to 20% for the first year	Expensed when incurred
Temporary	Advertisement fees and propagandist costs	Selling expenses	No more than 15% of the sales revenue of the current year unless it is otherwise differently provided for by the competent department of treasury or taxation of the State Council. The excess may be carried forward to future years for deduction	Expensed to current period
Temporary	Employees' salaries for domestic enterprises	Employee compensation payable	The standard for salaries payment deductions is stipulated based on different areas and industries. The excess payment cannot be deducted	Expensed when incurred
Temporary	Education fees for domestic enterprises	Management expense	They are deductible to the extent that they do not exceed 2.5% of the total amount of salaries and wages unless it is otherwise	Expensed when incurred

			different provided for by the State Council. The excess may be carried forward to future years for deduction.	
Temporary	Bad debt expense	Account receivables	Actual amounts incurred are deducted	Balance sheet liability method for the provision or releasing provision of bad debt
Temporary	Expense recognition such as prepaid rental	Expense	Deductible only when incurred	Accrual basis
Temporary	Revenue recognition	Revenue	Recognized when cash received or proof of charging received	Recognized when all the conditions are satisfied for a legal sale

(Source: ASBE 2006; New EIT law, 2008; Tang & Firth, 2011)

Permanent differences:

Upward tax adjustments:

Losses caused by penalties, fines and property confiscation

Fines for delaying tax payment

Overrun donation for public welfare

Overrun business entertainment expenses

Advertisement expenses and propagandist costs

Expenses that cannot be deducted before tax

Overrun salaries and wages

Overrun employees' welfare fees

Overrun union fees

Overrun employees' education fees

Sub-total

Downward tax adjustments:

Tax exempt investment income

Research and development costs

150% weighted deduction for research and development costs

Sub-total

Timing differences:

Upward tax adjustments:

Accrued salaries and wages

Internal unrealized profits

Provision for bad debts

Plan for the inventory revaluation reserve this year

Plan for the impairment of fixed assets this year

Subtotal

Downward tax adjustments:

Return to the bad loans

Recognized as deferred income of the government subsidies

Approved bad debts loss last year

Turn the year of the loss of asset impairment

Prepaid expenses

Approved other asset impairment last year

Subtotal

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