

# THE EFFECT OF CEO POWER ON TAX AVOIDANCE: EVIDENCE FROM TAIWAN

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## ABSTRACT

*This paper explores the relationship between CEO power and firms' tax avoidance. The study examines listed and OTC companies from Taiwan. Data from 2010 to 2016 on sampled firms were taken from the database of Taiwan Economic Journal. Research findings indicate that the higher the comprehensive power of CEOs, the more tax avoidance is mitigated in general. This finding is consistent with the stewardship theory that CEOs care about business reputation and corporate social responsibility. The paper divides CEO power into four categories. For CEOs with high structural rights, there is no taxation avoidance significance. CEOs with high ownership power exhibit taxation behavior consistent with the convergence-of-interest hypothesis. They reduce tax avoidance while seeking their own interests. Based on their professional experience, CEOs with strong expert power are vigilant about reputational risks; hence, they avoid tax avoidance and have a conservative approach to investments. CEOs with high prestige power can learn from their networks about seasoned practices in tax avoidance who are proactive in tax avoidance.*

**JEL:** K34, M12, M41

**KEYWORDS:** Tax Avoidance, CEO Power, Book-tax Differences

## INTRODUCTION

Tax levies are mandatory in nature. Taxes are a part of a firm's operating costs and engaging in tax avoidance can reduce firms' tax bearing. On one hand, tax payments do not come with a corresponding benefit; therefore, tax planning is deemed an action to enhance firm value. The firm's shareholders also hold this belief (Wilson, 2009; Graham and Tucker, 2006). Tax revenues are a mandatory fiscal measure for a government to share with its people the fruit of economic activities and pay for most public goods. Aggressive tax avoidance by corporates, usually via the postponement of payable taxes, may lead to late tax payments or fines imposed by tax authorities. In brief, tax fairness is scrutinized by stakeholders in society. Tax avoidance sits on the borderline between legitimate tax planning and illegal tax evasion, and the cutoff point is a topic of heated debate. Lietz (2013) defined the continuum of complete lawfulness at one end to obvious illegality at the other end as tax avoidance, tax aggressiveness, tax sheltering, and tax evasion in a study of taxation strategies. This provides a conceptual framework for tax planning. However, Blouin (2014) argued that this definition seems unable to provide a watershed for legal tax planning and aggressive tax avoidance. Similarly, the research here is not able to pinpoint the level of lawfulness in corporate actions to lower tax burdens by referring to the proxy variable for tax avoidance, representing a limitation of this research. While this paper uses the term "tax avoidance" to indicate corporate actions aiming to reduce taxes, it does not necessarily imply any inappropriate behavior.

Tax levies do not come with corresponding rewards, and tax policies strive for redistribution of incomes. Therefore, the design of income tax laws by the government is based on financial income for the calculation of tax payments. In other words, companies should pay their dues according to their economic profits to

contribute to the government's tax revenues. However, there is often a normative difference between financial income and taxable income given numerous restrictions, exemptions and different accounting principles meant to serve the government's fiscal policies and purposes. Therefore, companies are motivated to manage earnings and often adjust their own economic behaviors and patterns on the basis of freedom of choices in the context of private laws. They seek tax incentives, exemptions, or timing differences by arranging certain transactions, in order to minimize tax burdens. To reduce post-tax profits as much as possible, management may maximize pre-tax accounting profits on one hand and minimize taxable income on the other. The ultimate goal is to lower taxes payable, but not affect book earnings (McGill and Outslay, 2004; Mills, 1998).

Book-tax differences may be a result of differences between accounting principles and tax laws for normal transactions, or an outcome of specific transactions arranged for tax avoidance. Plesko (2002) indicated that book-tax differences among listed companies in the U.S. have been rising since the 1990s. Many companies report high profits in their financial statements, but pay little in taxes. Manzon and Plesko (2002) suggested that the greater the profitability, the higher the incentives for corporate tax avoidance, and hence, the bigger the book-tax differences. For this reason, most research papers use book-tax differences as the proxy variable for tax avoidance. However, some explain the motivations for tax avoidance from the perspectives of agency theory, which implies that tax avoidance is a means of pursuing personal gains for managers. If tax avoidance and asset embezzlement are complementary, some managers orchestrate specific transactions in the name of tax avoidance, with the true intention of asset embezzlement for personal gains at the expense of shareholders' rights (Desai, Dyck, and Zingales, 2007).

This paper seeks to capture the behavior of tax avoidance by examining book-tax differences (BTD) which represent aggressive tax avoidance by positive book-tax differences. By decomposing the total book-tax differences into permanent and temporary, this paper analyzes the construction of permanent book-tax differences. The purpose is to examine the economic effects of real transactions in the context of the restrictions on income tax incentives or the right to waive taxes according to the government's considerations for fiscal, social, and economic policies. Such restrictions and rights in tax laws and regulations cause permanent tax-book differences between accounting income and taxable income, and such differences, once in place, cannot be automatically reconciled. Examples include expenses exceeding the limit set by tax laws or tax-exempt income from securities transactions. In contrast, temporary differences are caused by revenues and expenses recognized for different years by accounting principles and tax laws. However, both accounting principles and tax laws will acknowledge revenues and expenses over time. Therefore, temporary book-tax differences are reversible. In sum, the contributing factors of permanent and temporary book-tax differences, and the resulting differences in tax burdens, are issues worthy of academic attention.

Literature on tax avoidance is associated with corporate governance factors. Remunerations, incentivized management, and ownership structure all boast a certain level of explanatory power (Shackelford and Shevlin, 2001; Hanlon and Heitzman, 2010). However, the influence of chief executive officer (CEO) power is overlooked. As the key executive, the CEO's attitude toward tax avoidance has a direct impact on the company's tax behavior. Dyreng, Hanlon, and Maydew (2010) argued that individual executives play a pivotal role in determining the level of tax avoidance by a company. This is evidenced by specific tax avoidance behavior exhibited by the company shortly after the individual executives in question take on their positions. The behavior stops after these executives have left the company. Although CEOs are often not tax experts, they establish guidelines in tax planning at the highest level of management (Huseynov and Klamm, 2012). Companies usually rely on overall objectives determined by tax or planning departments or external tax consultants for tax avoidance. However, regarding the arrangement of specific transactions or the establishment of operations in low tax-rate jurisdictions as part of the tax strategies, CEOs must be directly involved to facilitate extensive coordination across functions. At this juncture, correlation is expected between the degree of tax avoidance and the strength of CEO power.

Many studies treat tax avoidance by management as an element of agency theory. As the agent for owners, CEOs experience Type 1 agency problems due to the separation of ownership and management. The salaries and compensations of senior executives are a key mechanism to process internal agency problems with higher remuneration implying high power of agents. Past studies on the influence of CEO power on tax avoidance behavior often used CEO salaries as a measurement of CEO power (Laguir and Staglianò, 2014). However, this approach may not be sufficient to explore the nature of CEO power in depth. If CEOs become significant shareholders by holding large ownership stakes or via cross shareholdings, or ultimately have control of the companies, this becomes a Type 2 agency problem and will have a different impact on tax avoidance. In addition, CEOs' attitude toward investments, level of industry specialization, and network of contacts in the sector all affect the implementation of tax avoidance strategies. Therefore, this paper refers to the definition of CEO power by Finkelstein (1992) by dividing it into four types, i.e. structural power, ownership power, expert power, and prestige power, in the examination of whether the strength of CEO power affects corporate tax avoidance.

Theoretic backgrounds regarding CEO involvement in tax avoidance strategies, including the stewardship theory, support opposite opinions from agency theory. The stewardship theory contends that managers seek to maximize the interests of principals. Managers' interests are aligned with the organization's interests, and managers will not sacrifice the organization's interests to pursue personal gains. The stakeholder theory presents yet another argument. It holds that tax avoidance reduces the government's tax revenue and triggers adverse effects due to tax unfairness, and this hurts the company or management reputation. This paper validates the influence of CEO power on tax avoidance activities from the perspectives of agency theory, stewardship theory, and stakeholder theory. The empirical results show significant and negative correlation between CEO's comprehensive power and tax avoidance when the variables in relation to tax avoidance are controlled. This finding is consistent with the stewardship theory regarding CEOs' tax behaviors, meaning CEOs mitigate tax avoidance due to concern over reputational risks.

This paper also explores the influence of CEO's structural power, ownership power, expert power, and prestige power. There is positive and significant correlation between CEO structural power and permanent book-tax differences, which suggests that CEOs with high structural power tend toward creating permanent book-tax differences for tax avoidance. However, the correlation between structural power and total book-tax differences are not statistically significant. This is possibly because CEOs tasked with corporate oversight are concerned with negative signals associated with high book-tax differences. Thus, they are less aggressive in tax avoidance. There is significant and inverse correlation between CEO ownership power and tax avoidance, which illustrates how tax risks and considerations affect corporate reputations in the context of stewardship theory. In this scenario, book-tax differences are reduced to mitigate tax avoidance.

There is also exists significant and inverse correlation between CEO expert power and tax avoidance. This suggests that possession of professional knowledge, higher status in the firm, and rich work experience gives CEOs the capability to discern and assess reputational risks resulting from tax avoidance. Given their conservative strategy in investment, they reduce tax avoidance. However, the correlation between CEO prestige power and tax avoidance is significant and positive, which suggests that the strengthening of the CEO's social networks benefits tax avoidance activities. Measured by permanent and temporary book-tax differences, total book-tax differences are significantly correlated with ownership power, expert power, prestige power, and comprehensive power.

Correlations with permanent book-tax differences are also significant and in the same direction, which means that CEOs with high ownership power and expert power control tax avoidance by lowering permanent book-tax differences. However, CEOs with high prestige power tend to engage in aggressive tax avoidance by stepping up permanent book-tax differences. Correlations with temporary book-tax differences are insignificant with structural power, expert power, and prestige power (and comprehensive CEO power). This is possibly because tax benefits, as created by temporary book-tax differences, are only

temporary, and thus, undermine the effects on reputation. It also implies that temporary book-tax differences are not the tax avoidance strategy adopted by CEOs. However, there is significant and positive correlation between CEO ownership power and temporary book-tax differences, which runs contrary to the message conveyed by the total book-tax differences, and is possibly due to earnings management by CEOs with high ownership power.

In sum, this paper aims to enrich the extant research on tax avoidance by filling this gap. First, this study examined the relationship between CEO power and tax avoidance. Prior studies only examined the relationship between CEO power (measured by CEO remunerations) and tax avoidance (Desai and Dharmapala, 2006). This paper extends these works and delves into the dimensionality of CEO power to explore its relations with tax avoidance. This has not previously been studied. Meanwhile, with the strengthening of tax authority and legal enforcement, as well as the emphasis on corporate social responsibility, tax avoidance has inherent reputational risks. This paper finds that higher CEO power, results in more protection of firm reputation, which is consistent with the stewardship theory. The research findings show that CEOs with high power in Taiwan strive for sustainability of companies and honor their social responsibilities via corporate governance. The rest of the paper proceeds as follows. In the next section we review related literature and develop our hypothesis. Section 3 describes our sample and research design. Section 4 presents our main results and corroborating evidence, and Section 5 reports additional analyses. Lastly, we discuss conclusions and caveats.

## LITERATURE REVIEW AND RESEARCH HYPOTHESES

### Tax Avoidance, Tax Risk, and Book-Tax Difference

Although tax avoidance creates tax benefits and boosts company profits, taxation costs remain a valid concern. Tax avoidance is only possible when there is taxable net benefit for the firm and its shareholders (Rego and Wilson, 2012). Tax avoidance requires opportunity costs, transaction costs, implicit taxes, and uncertainty costs. Frequently seen transaction costs include the costs of hiring tax consultants or establishing a dedicated team. Implicit costs are additional tax collections and fines imposed by tax authorities. Uncertainty costs are headline risks frequently accompanied by exposed tax avoidance. Hence, reputation is a key element that influences tax avoidance strategies. Jacob, Rohlfing-Bastianb, and Sandner (2014) suggested that tax avoidance strategy is a function of moral risks, tax planning costs, and increased profits. If the potential for profit gains is low, tax avoidance strategy will be determined by moral risk issues. In contrast, if the potential for tax benefits is high, the tax avoidance strategy will be driven by tax planning costs, such as reputational and political costs.

Taxations are based on private law behavior, and taxable incomes are recorded according to accounting principles. However, firms enjoy discretion over the constructs of transactions in the context of private laws and the selection of accounting methods. This allows them to engineer book-tax differences to enhance financial income without a matching increase in taxable income. Therefore, the literature relates book-tax differences with tax avoidance behavior (Mills, 1998; Desai 2003; Plesko, 2004; McGill and Outslay, 2004). Book-tax differences can be divided into permanent and temporary. Management has discretion over the valuation of assets, provision for liabilities, and the selection of accounting methods. These discretionary accruals lead to temporary book-tax differences because the timing of revenue and expense recognition is different between financial accounting regulations and tax codes. Some studies posit that temporary book-tax differences are reflective of earnings management (Phillips, Pincus, and Rego, 2003; Hanlon and Shevlin, 2005; Frank, Lynch and Rego, 2009).

Most literature on earnings management refers to discretionary accruals as a proxy variable. However, tax codes typically impose the timing of recognition in relation to discretionary accruals manipulated with the selection of accounting methods and estimates. In other words, discretionary accruals are the main

contributor of temporary book-tax differences. Tax laws usually restrict the timing of recognition for discretionary items in accounting as tax avoidance. If companies resort to temporary book-tax differences for tax avoidance, discretionary accruals will be the outcome of tax avoidance. Therefore, it is difficult to differentiate whether the existence of temporary book-tax differences is resultant from earnings management or tax avoidance. That said, if a company inflates earnings for earnings management, it will avoid the impact of increased tax expenses on cash flows. Preference is given to the accounting principles, estimates, or discretions that do not enhance the tax burden or reduce expenses without tax benefits (e.g. smaller unrealized losses). This would be killing two birds with one stone. At this juncture, book-tax differences will increase, thus, this paper infers that the increase of temporary book-tax differences serves the dual purposes of earnings management and tax avoidance. However, as temporary book-tax differences are reconciled over time, its effectiveness in tax avoidance may be limited.

Past studies referred to permanent book-tax differences to capture tax planning by companies, where the ideal tax strategy is to manufacture permanent book-tax differences. Empirical evidence suggests that companies with aggressive transactions for tax avoidance report higher permanent differences (Wilson, 2009; Frank et al., 2009; Comrix, Graham, and Moore, 2011; Weisbach, 2002). Some suggest that the greater the book-tax differences, the more likely the tax authorities will suspect tax avoidance. Therefore, inspections are more frequent on companies reporting significant book-tax differences, in order to identify understated taxable amounts (Badertscher, Phillips, Pincus and Rego, 2009; Huang, 2010). Meanwhile, there is positive correlation between book-tax differences and higher taxable income detected by tax authorities. Thus, book-tax differences can serve as a proxy variable for taxation risks (Lennox, Lisowsky, and Pittman, 2013).

#### CEO Power and Tax Avoidance

Given the separation of ownership and management, a CEO serves as the agent and runs operations at the company level, meaning they are highly influential in a tax avoidance strategy (Dyreg et al., 2010). Chen and Chu (2005) analyzed tax avoidance based on the shareholders–managers model. Their results indicated that tax planning strategies are planned by principals, while agents are forced to cooperate because they are paid by the principals. The literature typically refers to CEO remunerations as a measurement of CEO power in the examination of relationships between CEO power and tax avoidance (Laguir and Stagliano, 2014). While CEO salary can indicate the level of CEO power, this paper argues that it cannot fully reflect how CEOs behave in terms of tax avoidance. This is because CEO remunerations are also subject to the influence of the economic dependence theory. Therefore, this paper refers to Finkelstein (1992), and divides CEO power into four types, i.e. structural power, ownership power, prestige power, and expert power.

CEOs resort to managerial control for tax avoidance. Thus, the analysis of control benefits should explore whether the CEO is focused on collective interest or self-interest as a result of such control. Agency theory presumes that management does not assume the ultimate operational risks due to the separation of ownership and management, and thus, decision making and risk taking. Therefore, management may not prioritize the maximization of shareholders' profits. Rather, they may seek to maximize personal gains, sometimes at the expense of shareholders' or other stakeholders' interests. Desai and Dharmapala (2006) indicated that tax avoidance is about rent extraction by managers who seek to benefit from control, particularly in poorly managed companies. CEOs use complex transactions or structures to camouflage their intentions from the principals. Under these circumstances, book-tax differences can detect adverse and abnormal profits. When tax transfers and tax avoidance are complementary, shareholders will not benefit from tax avoidance. However, some studies argue that if other shareholders perceive tax aggressive behavior as a way to mask rent extraction, a price discount will be imposed on the firm's shares (Chen, Chen, Cheng, and Shevlin, 2010). In brief, the exposure of tax avoidance is a warning signal to managers who care about reputation and performances.

In contrast with the check-and-balance mechanism, as described by the agency theory, the stewardship theory no longer assumes managers are individualist, opportunistic, or selfish agents. Given the diversity and conflicting objectives of shareholders, the behavior of stewards is deemed to be organization-oriented, and in pursuit of the best interest for the group (Davis, 1997). According to the stewardship theory, the assessment of net tax benefits should be whether the CEO considers tax avoidance at all. While tax avoidance reduces tax expenses and benefits all investors, the associated non-tax costs are critical. The rapid development of corporate social responsibility over recent years dictates that public scrutiny alone can alter the cost and benefit profile of tax avoidance. It bumps up the non-tax costs due to tarnished reputations as caused by the punitive measures imposed on companies (Dyreg, Hoopes, and Wilde, 2016). Society turns against the companies that do not pay their share of taxes, and the reputational damage in extreme cases may terminate the businesses (Lanis and Richardson, 2011).

According to Gallemore, Maydew, and Thornock (2014), almost no evidence suggests tax avoidance comes with reputational costs at the company level. However, Slemrod (2004) posited that share prices drop when tax avoidance behavior is disclosed. Graham, Hanlon, Shevlin, and Shroff (2014) interviewed corporate executives and found that more than 69% of them consider potential risks to firm reputation a key determinant of whether tax strategies should be implemented. In fact, this is rated as the second most important factor. Austin and Wilson (2017) contended that companies with valuable brands will mitigate tax avoidance behavior. Their research suggested an inverse correlation between firm reputation and tax avoidance. The more control CEOs have, the more leeway they have with policymaking. Agency theory holds that CEOs orchestrate aggressive tax avoidance to entrench their power and pursue control and personal gain, to cover up their rent extractions, or to create financial performances, and hence, high returns. In the framework of collective shared interests of control, the stewardship theory argues that tax avoidance risks may jeopardize firm reputation and the image of corporate social responsibility, thus, CEOs may consider cutting back on tax avoidance. This paper expects that, the greater the CEO power, the stronger their influence on tax avoidance. However, no presumptions on direction are assumed. The hypothesis is, as follows:

*H1: The level of CEO power is relevant to tax avoidance (as measured by book-tax differences).*

Structural power, ownership power, expert power, and prestige power are four powers formed by the specific experiences and current statuses of CEOs. This paper expects that these powers have different influence on attitude towards tax avoidance. This paper refers to Grabke-Rundell and Gomez-Mejia (2002) by delving into the economic behaviors and interactions between companies and CEOs from the perspectives of agency theory and resources-based theory. The purpose is to explore the effects on tax avoidance behaviors. Structural power and ownership power indicate CEOs' ability to effectively handle environmental uncertainties inside companies. The influence of other shareholders or board members on tax avoidance strategies is a case in point. Expert power and prestige power underpin the CEOs' capability to effectively cope with environmental uncertainties outside the companies. These uncertainties include the influence of customers, suppliers, competitors, and governments on tax avoidance strategies.

### Implications of Power in the Context of the Agency Theory

Structural power is the authority to formulate operational rules and procedural regulations for an organization through its hierarchy by giving legitimate rights to holders of different positions. Finkelstein (1992) suggested that structural powers owned by CEOs consist of various elements, such as the hierarchical positions implied by titles, number of titles, and current remunerations. The higher up in the hierarchy, the greater the number of job roles, and the bigger the power endowed. High salaries also speak of CEOs' management power.

The corporate governance framework defines the hierarchy based on ownership and management rights. Ownership right holders select directors and chairpersons for operational decision-making and oversight. Boards are the mechanism for monitoring managers. Chairpersons lead the boards and CEOs lead the management teams. CEO duality refers CEOs acting as board chairpersons. While, in theory, this can effectively resolve internal uncertainties, CEOs also acting as board chairpersons or directors compromise the oversight functions served by the boards. Under such circumstances, boards are likely to lose objectivity and monitoring capabilities.

Minnick and Noga (2010) argued that boards should be responsible for the allocation of company resources, supervision of firm performances, and creation of shareholders' wealth. Boards play an essential role in the selection of taxation management and strategies. Landolf (2006) indicated that the effective functioning of boards imposes appropriate oversight over tax planning by companies. In terms of how CEO duality affects tax avoidance, Steijver, and Niskanen (2011) posited that the avoidance of CEO duality is not effective in the mitigation of CEOs' tax aggression. Some studies argue for a complementary relation between fraud and tax avoidance (Desai and Dharmapala, 2006; Frank et al, 2009; Lanis and Richardson, 2012). Farber (2005) found a significantly higher percentage of fraudulent companies have CEOs also serving as chairpersons. According to Core, Holthausen, and Larcker (1999), CEO duality and high stakes held by managers lead to a strong desire by management to hold on to their wealth, power, and status, which naturally results in self-interest behavior and power entrenchment (Jensen and Ruback, 1983). Hence, it can be inferred that CEO duality triggers tax avoidance behavior.

Traditionally, managerial power steps up along the corporate ladder. The greater the managerial power, the higher the remuneration. Therefore, it can be expected that there is positive correlation between CEO power and remuneration levels. According to the empirical research by Liu and Lin (2000), there is significant and positive correlation between the four types of CEO power and CEO remunerations. Agency theory holds that owners provide contracted remunerations to CEO for risk compensations and performance rewards. Hence, remunerations offer both insurance effects and incentive effects. Graham, et al.(2014) interviewed senior managers and listed companies and indicated that incentive measures in accounting encourage tax avoidance. An increase in earnings per share is a key performance metric, and thus, motivation for tax avoidance strategies. However, Desai and Dharmapala (2006) argued otherwise, suggesting a complementary relationship between rent transfers and tax avoidance in poorly managed companies. Owners enhance their incentives and remunerations to managers to mitigate tax avoidance behavior. In the case of CEO duality (or concurrently a board director) and high remunerations, managers have a strong desire to hold on to existing power and status. This can lead to self-interest behavior such as power entrenchment and incentive remunerations. When this is combined with undermining of the board's supervisory functions, it will adversely affect risk control over tax matters. In these circumstances, CEOs are prone to avoid taxes via book-tax differences. Therefore, this paper develops the following hypothesis regarding the influence of CEOs' structural power on tax avoidance:

*H2a: There is a positive correlation between CEOs' structural power and firms' tax avoidance.*

Given the separation of ownership and management, CEOs as the agent have managerial power, which is subject to the control and influence of principals. However, CEOs may also be the owners, and this will boost their status in the principal-agent relationship. In some cases, CEOs are the ultimate owners and controllers. Zald (1969) argued the most important source of managerial power is ownership. High ownership stakes held by management will enhance the influence on key decisions via voting rights.

The effects of CEO's ownership on corporate governance can be explored in the context of the agency theory. There are two hypotheses regarding high stakes owned by managers that will result in two corporate governance effects, the entrenchment theory and convergence-of-interest hypothesis (Jensen and Ruback, 1983; Jensen and Meckling, 1976). For shareholders, these hypotheses explain two effects. According to

the entrenchment theory, high ownership alleviates management from being monitored by the board. This high ownership allows for sufficient voting rights to maximize their own wealth by making investment decisions favorable to their own interests (Grabke-Rundell and Gomez-Mejia, 2002). In contrast, the convergence-of-interest hypothesis considers the alignment of management's interests and shareholders' interests. If management has higher stakes in the company management will have to assume a higher percentage of company losses. In these circumstances, CEOs are more likely to maximize firm values and protect shareholders' interests, thereby mitigating the agency problems due to the separation of ownership and management (Jensen and Meckling, 1976; Teshima and Shuto, 2008).

Shen and Cannella (2002) argued for a positive correlation between CEO ownership and CEO loyalty. The greater the CEO ownership, the more likely he/she will be to prioritize the interests of the company. Therefore, the higher the CEO ownership, the better the CEO credibility. Meanwhile, significant external shareholders play an important role in corporate activities, as they provide good oversight (McConnell and Servaes, 1995), and serve as a check-and-balance for the pursuit of personal goals by controlling shareholders. Supervision over management is essentially a public good (Shleifer and Vishny, 1986). While the board monitors management on the behalf of shareholders, significant external shareholders also serve the same function. Therefore, management often calls for support from external shareholders to shake off controlling shareholders. Among the sampled companies in this paper, 62% are family-owned businesses in Taiwan. External major shareholders ensure good corporate governance because their interests are at stake.

Tax avoidance is only undertaken when there are net taxable profits (Rego and Wilson, 2012). Among all tax avoidance costs, reputation loss as a cost of uncertainty, usually cannot be quantified, and is a judgement call by those in charge. Badertscher, Katz, and Rego (2013) argued that firms with greater concentrations of ownership and control, and thus more risk averse managers, avoid less income tax than firms with less concentrated ownership and control. Steijver and Niskanen (2011) indicated that family businesses where CEOs have high ownership are less willing to pursue tax avoidance. CEOs with low or no ownership will be tax aggressive. The presence of external directors on the board can lessen this direct influence. In line with the convergence-of-interest hypothesis, this paper expects that, in the presence of significant shareholders, CEOs with high stakes or with ultimate control will not engage in rent transfers via tax avoidance to protect the interests of all shareholders. As CEOs with high stakes care about their own reputation and the company reputation, they are risk averse in terms of tax risk management and less likely to be involved in tax avoidance. In sum, this paper develops the following hypothesis regarding the influence of CEOs' ownership power on tax avoidance:

*H2b: There is a negative correlation between CEOs' ownership power and firms' tax avoidance.*

### Power Implications in the Context of the Resources-Based Theory

Seasoned CEOs have the resources and capabilities to respond to unforeseen situations in a timely manner and avoid the possibility of crises. According to resources-based theory, companies tend to rely on the judgement and decisions of CEOs with greater expert power and prestige power (Granovetter, 1985). Managers equipped with professional knowledge may exert significant influence on specific decisions and strategic options (Yetton and Bottger, 1982). Effective tax strategies require consideration of economic environments and operational strategies of different business units. From the perspective of the function of CEO's expert power, specialization of CEOs is enhanced due to their understanding of industry and their orchestration of private-law arrangements as tax strategies. This effect creates tax exemptions and deferrals without putting any business units at a strategic disadvantage. However, some studies argue otherwise. Aliani (2014) examined U.S. companies from 1996-2009 to explore whether CEO characteristics affect tax planning. The results did not suggest significant correlations between tax planning and experience, seniority, or age. However, educational levels and professional backgrounds exhibit significant influence on corporate tax strategies. Dyreng et al. (2010) indicated that CEOs with more experience or financial



expertise due to education do not promote aggressive tax strategies, as they are not tax managers or experts. Tax avoidance should be one of the strategies and investment plans run by CEOs.

While CEOs have work experience and professional knowledge to enable tax avoidance, these may not be the key factors to implement tax avoidance. Rather, expert power helps CEOs understand the risks of tax avoidance. CEOs are faced with risks and moral issues regarding the adoption of aggressive tax strategies. Studies have indicated that CEOs' decision-making ability increases with their tenure (Bebchuk and Fried, 2003). However, their investment strategies become increasingly conservative over time (Musteen, Barker, and Baeten, 2006). Tax revenues provide government funding for public goods, and paying taxes is a corporate social responsibility. Research indicates that companies can improve stakeholder relations by boosting the business reputation with social activities. These activities help the firm gain trust from investors, enhance the efficiency of resources utilization, and improve innovation capabilities, thereby boosting firm value (Porter and van der Linde, 1995). Compliance with tax codes is one of the conservative investment strategies of CEOs. According to the stewardship theory, CEOs with strong expert power are capable of discerning reputational risks associated with the uncertainty of tax avoidance strategies. When this is combined with conservative investment strategies, CEOs will steer away from tax avoidance. In sum, this paper develops the following hypothesis regarding the influence of CEOs' expert power on tax avoidance:

*H2c: There is a negative correlation between CEOs' expert power and firms' tax avoidance.*

Prestige power refers to the personal reputation of a CEO in the stakeholder system, such as serving on other company boards and non-profit organizations. It is hardly surprising that CEOs reputation affects how the stakeholders and others in the system view the companies. In the context of the centrality of external networks, a prestigious CEO may bring more connections to an organization and its stakeholders. Thus, the organization will have better political and commercial connections due to the CEO's reputation. In terms of imitation effects, CEOs sitting on other company boards or association committees establish a close-knit network in the corporate world. This network builds non-official channels for the delivery of private information and encourages similar behaviors from other companies. Empirical evidence indicates that social networks improve the acquisition of external information and knowledge (Maurer and Ebers, 2006), as well as the integration and interpretation of knowledge (McDonald and Westphal, 2003). The argument of tax avoidance strategies can be extended from the perspective of external networks. CEOs' prestige power will make it easier to explore tax strategies by consulting external organizations in the industry's network.

Furthermore, the arrangement of transactions for tax avoidance will be much easier if prestigious CEOs can attract external organizations to collaborate, as based on the centrality of external networks derived from prestige power. Hence, this paper expects positive correlation between prestige power and tax avoidance. According to Tian, Li, Si, and Zhang (2017), sophisticated experience in tax avoidance circulated among directors in a corporate network can reduce the tax avoidance costs of target companies and ease the concern of managers regarding adverse outcomes. Thus, tax avoidance becomes popular within corporate networks. However, Brown (2011) found that firms that share a common board member are more likely to adopt similar tax strategies. This loss of uniqueness may make it impossible to expose the significance of shared tax avoidance behavior. CEOs with strong prestige power can leverage the support of external networks for the transaction arrangements of tax avoidance. CEOs who consider the implications of tax avoidance on reputation, and common tax strategies in the corporate network may be able to reduce the adverse effects or potential allegations. Meanwhile, shared tax avoidance strategies are a better approach to test the attitude of tax authorities. Therefore, we argue that usability of tax avoidance strategies circulated in the external network and the mitigation of effects on reputation are sufficient to prompt CEOs with prestige power to pursue tax avoidance. In sum, this paper develops the following hypothesis regarding the influence of CEOs' prestige power on tax avoidance:

H2d: There is a positive correlation between CEOs' prestige power and firms' tax avoidance.

## DATA AND METHODOLOGY

### Data Sourcing and Sample Selection

Companies listed on the Taiwan Stock Exchange and the Taipei Exchange from 2010 to 2016 were taken as the main research objects. Cross-section data and multiple regression were used as the research method, and annual and industrial effects were controlled. As securities brokerages, financial institutions, insurance companies, and investment firms are of different nature, they were excluded from the sample. This paper refers to book-tax differences (BTD) as the dependent variable. The initial number of data entries was 11,435. After the deletion of 2,463 entries with incomplete variable data and 1,979 entries with pre-tax losses, because it has no tax avoidance implications (Landry, Deslandes, and Fortin, 2013; Lin, 2017), the effective size of the sample is 6,993 observations. The empirical data is sourced from the basic database, corporate governance database, and financial database run by Taiwan Economic Journal.

Table 1: Sample Selection Process

Sampled observations of companies listed on the Taiwan Stock Exchange and the Taipei Exchange, excluding the firms in financial, insurance, and securities industries from 2010 to 2016	11,435
Less: Observations with incomplete data	(2,463)
Observations with pre-tax financial income is negative	(1,979)
Number of valid observations	6,993

*This table describes the sample selection process.*

### Regression Model and Variable Definition

This paper aims to explore the correlation between CEO power and firms' tax avoidance by using total book-tax differences (ABTD) as the dependent variable to measure the degree of firms' tax avoidance. In addition, total book-tax differences (ABTD) are divided into permanent book-tax differences (PBSD) and temporary book-tax differences (TBTD) as two variables. The independent variable is CEO's comprehensive power (POWER), which is comprised of structural power, ownership power, expert power, and prestige power. There are 12 variables in total. Principal component analysis was applied to derive a composite indicator of CEO power, to examine its influence on tax avoidance. Model (1) is constructed to validate H1:

$$\begin{aligned}
 BTD_{it} = & \beta_0 + \beta_1 POWER_{it} + \beta_2 INDB_{it} + \beta_3 COMM_{it} + \beta_4 ROA_{it} + \beta_5 GRA_{it} + \beta_6 SIZE_{it} + \\
 & \beta_7 DEBT_{it} + \beta_8 PPE_{it} + \beta_9 RD_{it} + \beta_{10} UNCON_{it} + \beta_{11} BIG4_{it} + \beta_{12} TENURE_{it} + \\
 & \text{Year Dummies} + \text{Industry Dummies} + \varepsilon_{it}
 \end{aligned} \tag{1}$$

CEO power is categorized into structural power (STRP), ownership power (OWNP), expert power (EXPP), and prestige power (RPEP). Three variables are then combined with these four powers via principal component analysis, in order to construct Model(2) to validate H2a~H2d:

$$\begin{aligned}
 BTD_{it} = & \beta_0 + \beta_1 STRP_{it} + \beta_2 OWNP_{it} + \beta_3 EXPP_{it} + \beta_4 RPEP_{it} + \beta_5 INDB_{it} + \beta_6 COMM_{it} + \\
 & \beta_7 ROA_{it} + \beta_8 GRA_{it} + \beta_9 SIZE_{it} + \beta_{10} DEBT_{it} + \beta_{11} PPE_{it} + \beta_{12} RD_{it} + \beta_{13} UNCON_{it} + \\
 & \beta_{14} BIG4_{it} + \beta_{15} TENURE_{it} + \text{Year Dummies} + \text{Industry Dummies} + \varepsilon_{it}
 \end{aligned} \tag{2}$$

Where: BTD includes ABTD, PBTD and TBTD

### Measurement of Dependent Variables

Firm tax avoidance, which is the dependent variable in the empirical tests of this paper, is measured by book-tax differences (BTD). Book-tax differences are caused by differences between financial accounting and tax law. Book-tax differences are estimated by deducting pre-tax financial income from taxable income. Given the same pre-tax earnings, the greater the book-tax differences (BTD), the lower the tax burden, implying more aggressive tax avoidance. Below we discuss each measure in turn. For ease of reading we present detailed definitions of these variables in Table 2. As previously indicated, book-tax differences and tax avoidance are positively correlated. Mills (1998) noted that companies with higher book-tax differences are more likely to be audited by tax authorities and experience greater audit adjustments, which suggests that book-tax differences are related to tax avoidance. Wilson (2009) examined paired samples and indicated that companies accused of tax avoidance report higher book-tax differences than those who are not.

Total book-tax differences (ABTD) are defined as (pre-tax financial income less taxable income) divided by total assets at the beginning of the period. As it was not possible to obtain the actual tax data, this paper refers to Hanlon and Shevlin (2002), Manzon and Plesko (2002), Frank et al. (2009), Comprix et al. (2011), and Mills (1998) for the estimates of taxable income by dividing tax expenses during the period with the highest statutory rate of corporate income taxes. Total book-tax differences are divided into permanent and temporary. Temporary book-tax differences are calculated with deferred tax expenses divided by business income tax rates. Permanent book-tax differences are the total book-tax differences less temporary book-tax differences.

### Measurement of Independent Variables

The independent variables include CEO structural power (STRP), CEO ownership power (OWNP), CEO expert power (EXPP), and CEO prestige power (RPEP). Three CEO characteristics for each power are respectively established as variables and are integrated into single indicators for each power by principal components analysis. The twelve variables are also integrated into a single indicator for CEO's comprehensive power by principal components analysis. Structural power is a formal position in an organization and its hierarchy. This paper refers to Finkelstein (1992) and Wu, Quan and Xu (2011) regarding whether CEO duality, remunerations, and CEOs serving as internal directors can be used to measure CEO structural power. Finkelstein (1992) posited that structural power is relevant to the allocation of internal positions. The higher the structural power held by management, the less reliant they are on other senior executives. Therefore, this paper tallies the number of titles as chairpersons and internal directors served by CEOs. Although not a precise meter for their status in the organizations, the level of CEO remuneration is an indicator of the importance and structural power of CEOs.

The definition of ownership power (OWNP), as based on Finkelstein (1992), Krista and Maureen (2012), measures the CEO shareholding, whether CEOs are the members of ultimate controllers, and the shareholding of the largest external shareholders. The level of CEO power is an equation of the relation between agents and principals. An increase in stakes owned by CEOs undermines the influence of the boards and the uncertainties associated with overly strong boards. In brief, ownership structures affect management power (Finkelstein 1992; Van Essen, Otten, and Carberry, 2015). Moreover, stewardship theory contends that significant external shareholders support good corporate governance and backup CEO power. This paper presumes that the strength of CEO power is an equation of CEO ownership, CEO as the ultimate controllers and stakes held by the largest external shareholders.

Table 2: Variable Measurement

<b>Dependent Variable: Measures of Tax Avoidance (BTD)</b>	
ABTD	= Total book-tax differences Pre-tax financial income less taxable income, deflated with total assets at the beginning of the period; taxable income estimated with tax expenses during the current period divided by the highest rate of corporate business tax
TBTD	= Temporary book-tax differences Deferred tax expenses divided by the highest rate of business income taxes, then deflated with total assets at the beginning of the period
PBTD	= Permanent book-tax differences ABTD less TBTD
<b>Key Explanatory Variables</b>	
POWER	= Comprehensive index for CEO power Derived with principal component analysis on a total of 12 variables by using the four types of CEO power
STRP	= Structural power, derived with principal component analysis by referring to the following three variables: (1) CEO duality: a dummy variable, with 1 indicating CEO also serving as the board chairperson and 0 if not (2) CEO remunerations: average remunerations paid to General Manager and Vice Presidents (3) Internal board director: a dummy variable, with 1 indicating CEO also serving as a board director and 0 if no
OWNP	= Ownership power, derived with principal component analysis by referring to the following three variables: (1) Holdings: percentage of shares held by CEO (2) CEO Internalization: a dummy variable, with 1 indicating ultimate controller as the CEO and 0 if not (3) Holdings by the largest external shareholder: a dummy variable, with 1 the holdings by the largest shareholder higher than the industry median, and 0 if not
EXPP	= Expert power, derived with principal component analysis by referring to the following three variables: (1) CEO tenure: the length of time served by CEO (2) Number of administrative posts: the number of positions ever held by CEO (3) Functional backgrounds: the number of functions ever served by CEO in different fields
RPEP	= Prestige power, derived with principal component analysis by referring to the following three variables: (1) Education: a dummy variable, with 1 indicating CEO having a master's degree or above, and 0 if not (2) Number of posts in other organizations served by CEO: Number of company directors CEO is sitting on number of CEOs serving as directors of other companies (3) Non-profit organizations: Number of non-profit organization directors CEO is sitting on
<b>Control Variables</b>	
COMM	The setting the audit committee; indicator variable equal to 1 if the audit committee is established; 0 otherwise.
INDB	Ratio of independent director; the seats of independent directors divided by seats of all the directors.
SIZE	Company size; natural logarithm of book value of the total assets at the beginning of period.
DEBT	Debt ratio; total liabilities at the end of period scaled by total assets at the end of period.
PPE	Capital asset concentration; property, plant and equipment at the end of period scaled by total assets at the beginning of period.
ROA	Return on assets; measured as the ratio of income before interest expense to the average of total assets for the year.
GRA	Growth of asset; total assets at the end of period less total assets at the beginning of period divided by total assets at the beginning of period.
R&D	Research and development expenditure; research and development expenses scaled by total assets at the beginning of period.
EQINC	Income related to the equity method; investments income and loss recognized under equity method scaled by total assets at the beginning of period.
BIG4	Audit firms size; indicator variable equal to 1 if audited by a Big 4 firm; 0 otherwise. The big 4 means Deloitte & Touche, Ernst & Young, KPMG, and Price Waterhouse Coopers.
TENURE	Auditor tenure; years of firms audited by audit firms (calculated from 1983).

*This table shows variable definitions. The subscripts  $i$  and  $t$  denote firms and year respectively.*

Expert power (EXPP) is defined on the basis of Finkelstein (1992) and measured by three elements, i.e. the breadth of CEO's professional knowledge in different functions, the number of positions held in the company, and the number of different functions ever served by the CEO. Tushman and Romanelli (1983) argued that CEOs with strong expertise are more capable of coping with challenges due to changes in the operating environment. The functional experiences accumulated on the job allow CEOs to become experts in specific domains. The more fields and sectors CEOs are exposed to, and the more positions they have held, the greater their connections in association with corporate missions and business environments. The broader the backgrounds and perspectives, the more capable the CEOs are to handle multiple stakeholders in the environment in relation to corporate mission.

The definition of prestige power is also in reference to Finkelstein (1992), and measured with the number of board directors and association chairperson positions served by the CEO, the total number of nonprofit boards CEOs sit on, and their educational backgrounds. The boards of non-profit organizations are usually a forum of influential characters in promotion of information sharing and capable of building reputations among stakeholders. D'Aveni (1990) suggested that prestige power may come from educational backgrounds. The prestige power commanded by CEOs affect the abundance of internal resources, as well as the recognition and support of external organizations.

### Control Variable

In addition to our main variable of interest, we control for other factors that prior research suggests are associated with tax avoidance. The model first controls for the firm's corporate governance (INDB, COMM). Prior research suggests that outside directors are significantly negatively correlated to firms' tax avoidance. The more independent directors are the better the corporate governance will be, which can restrict management's tax avoidance (Lanis and Richardson, 2011; Lin, 2017). Moreover, Richardson, Taylor, and Lanis (2013) pointed out that when the audit committee has higher independence, firms will be less likely to conduct tax avoidance. The second model controls for firm performance (ROA), because highly profitable firms will pay relatively higher income tax. To reduce taxes, they have increasing incentive to engage in tax avoidance (Chen et al., 2010; Frank et al., 2009). Manzon and Plesko (2002) found that companies with better profitability are more likely to engage in tax avoidance. The model also controls for the firm's growth opportunities (GRA) and firm size (SIZE), Phillips et al. (2003) thought that growing enterprises may have more opportunities for tax avoidance, thus we include GRA. In terms of the relationship between company size and tax avoidance, there are different inferences under different hypotheses.

Because they may also affect tax avoidance, firms' capital structure or leverage (DEBT) and asset mix (PPE, R&D and EQINC) are incorporated. In modern capital structure theory, when liabilities are used to replace stocks, the associated interest expense can produce a tax shield effect. Therefore, firms having more borrowing will have more interest expenses and will have no need to actively engage in other types of tax avoidance (Chen et al., 2010). But some literature expresses different opinions (Gupta and Newberry, 1997). According to the empirical analysis of Mills (1998), capital asset concentration is significantly positively correlated to tax avoidance. Taiwan's tax incentive measures (Act for Upgrading Industries) stipulates that equipment investment can result in a tax deduction, thus we include PPE. In terms of expenditure (profit and loss factor), research and development expenses often result in tax reduction to reduce the effective tax rate (Dyreg, Hanlon, and Maydew, 2008). The income and loss on investments recognized according to the equity method is usually deemed as the unrealized gains and losses in tax laws. As such, it is a major factor in book-tax difference. In the research of Chen et al. (2010), Frank et al. (2009), Huang (2010), R&D and EQINC are included as control variables. The characteristics of the audit firm are also considered. We control for whether the external auditor is a Big 4 audit firm (BIG4) and years of firms audited by audit firms (TENURE). Auditor's tenure is used as the control variable to consider the economic

dependence and closeness of relationship between auditors and audit clients. Moreover, auditors having the longer tenure may acquiesce in audit clients' expectation.

## RESULTS AND DISCUSSION

### Descriptive Statistics and Correlation Coefficient Analysis

Table 3 presents the descriptive statistics of individual variables. To minimize the influence of outliers, all the continuous variables are adjusted with the winsorized method for values of 0.2% and 99.8%. Table 3 shows the mean value of the total book-tax differences (ABTD) at 0.0018 for the sampled companies in 2010-2016, and suggests tax avoidance given financial income higher than taxable income. However, the median value of -0.0020 indicates that less than half of the observations report financial income higher than taxable income. The mean value of permanent book-tax differences (PBDT) at approximately -0.0025 implies that they are formed as a result of restrictions on expenses imposed by tax codes. The mean and median values of temporary book-tax differences (TBTD) were 0.0045 and 0.0005, respectively, and provide evidence of the tendency of tax avoidance given the extent of financial income being higher than taxable income. The mean and median values of comprehensive CEO power (POWER) were 0.0325 and -0.0118, respectively, and the maximum and minimum values were 2.4079 and -2.4112, respectively. This paints an even picture of power distribution. The symbol COMM denotes a dummy variable at the mean value of 0.1576. As the setup of an audit committee is not yet mandatory in Taiwan, the percentage of listed companies with audit committees is not high. The symbol BIG4 also denotes a dummy variable, and its mean value of 0.8703 indicates most of the companies listed on the Taiwan Stock Exchange and Taipei Exchange are audited by the Big Four.

Table 3: Descriptive Statistics of Individual Variables

Variables	Minimum	Median	Maximum	Mean	Standard Deviation
ABTD	-0.2617	-0.0020	0.6060	0.0018	0.0649
PBDT	-0.2730	-0.0054	0.8567	-0.0025	0.0627
TBTD	-0.2866	0.0005	0.4385	0.0045	0.0432
POWER	-2.4112	-0.0118	2.4079	0.0325	0.9891
STRP	-1.8588	-0.1625	1.1452	0.0183	0.9832
OWNP	-1.0224	-0.3616	3.5272	0.0165	0.9679
EXPP	-1.7358	-0.0641	3.2452	-0.0254	0.9422
PREP	-0.6482	-0.1272	5.4925	-0.0154	0.8354
INDB	0.0000	0.2857	0.6000	0.2336	0.1709
COMM	0.0000	0.0000	1.0000	0.1576	0.3644
ROA	-0.0106	0.0580	0.3877	0.0713	0.0563
GRA	-0.4457	0.0529	2.6788	0.1012	0.2483
SIZE	5.2655	6.5628	8.8889	6.6600	0.6166
DEBT	0.0372	0.3921	0.9364	0.3951	0.1670
PPE	0.0001	0.2504	1.1507	0.2756	0.1913
RD	0.0000	0.0089	0.1758	0.0148	0.0191
UNCON	-0.0257	0.0000	0.1566	0.0015	0.0100
BIG4	0.0000	1.0000	1.0000	0.8703	0.3360
TENURE	1.0000	13.0000	34.0000	13.6555	7.5344

*This table shows the descriptive statistics, including minimum, median, maximum, mean, and standard deviation. Variables are defined in Table 2. All continuous variables are winsorized (reset) at the 0.2st and 99.8th percentiles.*

Correlation Coefficient Test Analysis

Table 4 summarizes the correlation coefficients between variables. The triangle in the upper right corner indicates the Pearson correlations, while the triangle sign in the lower left corner shows the Spearman's correlations. According to the Pearson correlation coefficients, POWER is significantly and negatively correlated with ABTD and PBTD, and this is in line with the expectation of this paper and supportive of H1.

Regarding the four types of CEO power, none of the correlations between structural power (STRP) and the three book-tax differences are significant. Thus, univariate test results cannot support H2a for now. Ownership power (OWNP) and expert power (EXPP) are significantly and negatively correlated with ABTD and PBTD. These results suggest that the stronger the ownership power and expert power, the smaller the book-tax differences and the weaker the tax avoidance. This supports H2b and H2c. None of the correlations between prestige power (PREP) and the three book-tax differences are significant, thus, univariate test results cannot support H2d, which is possibly due to a lack of control over other relevant variables. As shown with the Spearman coefficients, STRP is significantly and negatively correlated with ABTD and PBTD, which is in contrary to the expected direction, thus, H2a is not supported. EXPP is significantly and negative correlated with ABTD and TBTD. This supports H2c. PREP is significantly and positively correlated with ABTD, thus, H2d is supported. In the part of the Spearman correlation coefficient tests, in addition to the above-mentioned description, the correlation direction of independent variables with dependent variable is similar to that of Pearson correlation coefficient. The Pearson and Spearman correlation coefficient is merely the univariate analysis, so this research controlled for other correlated variables to conduct the multiple regression analysis below.

Table 4: Correlation Analysis

Variables	ABTD	PBTD	TBTD	POWER	STRP	OWNP	EXPP	PREP	IND	COMM
ABTD	1.000	0.738***	0.432***	-0.032***	-0.010	-0.065***	-0.026**	0.006	-0.087***	-0.063***
PBTD	0.716***	1.000	-0.262***	-0.040***	-0.012	-0.076***	-0.019*	0.003	-0.094***	-0.073***
TBTD	0.398***	-0.209***	1.000	0.013	0.008	0.015*	-0.014	0.005	-0.002	0.008
POWER	-0.040***	-0.053***	0.008	1.000	0.735***	0.768***	-0.673***	0.210***	-0.085***	-0.118***
STRP	-0.023**	-0.040***	0.002	0.710***	1.000	0.488***	-0.223***	0.175***	0.009	-0.045***
OWNP	-0.075***	-0.087***	0.001	0.768***	0.527***	1.000	-0.256***	0.094***	0.040***	-0.099***
EXPP	-0.026**	-0.013	-0.016*	-0.659***	-0.214***	-0.274***	1.000	-0.036***	0.199***	0.117***
PREP	0.018*	0.014	-0.007	0.109***	0.112***	0.066***	0.018*	1.000	0.026**	0.055***
IND	-0.102***	-0.099***	-0.020**	-0.057***	0.037***	0.070***	0.178***	0.071***	1.000	0.375***
COMM	-0.069***	-0.068***	-0.006	-0.121***	-0.054***	-0.118***	0.108***	0.062***	0.404***	1.000
ROA	0.212***	0.165***	0.073***	-0.007	-0.097***	0.034***	0.044***	0.008	0.154***	0.075***
GRA	0.106***	0.036***	0.084***	-0.016*	-0.002	0.008	0.049***	0.031***	0.081***	0.009
SIZE	-0.062***	-0.054***	-0.011	-0.039***	-0.224***	-0.208***	-0.139***	0.044***	-0.205***	0.110***
DEBT	-0.100***	-0.108***	-0.013	-0.022*	-0.036***	-0.071***	-0.038***	-0.024**	-0.076***	-0.016*
PPE	-0.034***	-0.040***	0.032***	-0.019*	-0.068***	0.018**	-0.013	-0.071***	-0.012	0.009
RD	0.062***	0.054***	0.011	0.039***	0.224***	0.208***	0.139***	-0.044***	0.205***	-0.110***
UNCON	0.083***	0.067***	0.053***	0.001	-0.069***	-0.059***	-0.068***	0.010	-0.103***	0.007
BIG4	-0.064***	-0.051***	-0.010	-0.107***	-0.074***	-0.062***	0.124***	0.048***	0.148***	0.103***
TENURE	0.012	0.021**	0.008	0.083***	-0.076***	-0.036***	-0.169***	-0.007	-0.289***	-0.111***

Table 4: Correlation Analysis (continued)

Variables	ROA	GRA	SIZE	DEBT	PPE	RD	UNCON	BIG4	TENURE
ABTD	0.317***	0.254***	-0.063***	-0.080***	-0.012	0.189***	0.139***	-0.049***	-0.009
PBTD	0.310***	0.256***	-0.068***	-0.074***	-0.018*	0.211***	0.105***	-0.053***	-0.008
TBTD	0.054***	0.039***	-0.008	-0.017	0.013	0.005	0.069***	-0.003	-0.003
POWER	-0.002	-0.031***	-0.050***	-0.012	-0.039***	-0.011	-0.004	-0.105***	0.081***
STRP	0.002	0.008	-0.083***	-0.023*	-0.083***	0.058***	-0.024**	-0.029***	-0.002
OWNP	0.045***	-0.003	-0.192***	-0.058***	0.016*	0.102***	-0.062***	-0.067***	-0.040***
EXPP	0.033***	0.051***	-0.117***	-0.048***	0.013	0.135***	-0.053***	0.127***	-0.175***
PREP	-0.011	0.011	0.081***	0.009	-0.074***	-0.046***	0.096***	-0.006	0.026**
IND	0.135***	0.070***	-0.151***	-0.063***	0.003	0.139***	-0.073***	0.159***	-0.288***
COMM	0.063***	0.015*	0.144***	-0.013	0.020*	-0.059***	-0.024**	0.103***	-0.098***
ROA	1.000	0.279***	-0.128***	-0.259***	-0.002	0.118***	0.093***	0.061***	-0.134***
GRA	0.335***	1.000	-0.158***	0.119***	0.147***	0.306***	0.018*	-0.007	-0.154***
SIZE	-0.112***	-0.092***	1.000	0.357***	0.036**	-0.711***	0.124***	0.077***	0.382***
DEBT	-0.242***	0.181***	0.358***	1.000	0.015	-0.243***	-0.028***	-0.011	0.097***
PPE	-0.001	0.101***	0.042***	-0.001	1.000	-0.051***	-0.052***	0.034***	0.002
RD	0.112***	0.092***	-1.000***	-0.358***	-0.042***	1.000	-0.074***	-0.078***	-0.313***
UNCON	0.033***	-0.010	0.160***	0.036***	0.016*	-0.160***	1.000	0.029***	0.092***
BIG4	0.068***	0.015	0.059***	-0.008	0.032***	-0.059***	-0.015	1.000	-0.048***
TENURE	-0.135***	-0.144***	0.366***	0.094***	0.009	-0.366***	0.130***	-0.034***	1.000

This table shows Pearson and Spearman correlation analyses. Various variables are defined in Table 2. Pearson correlation coefficients are in the upper right, Spearman correlation coefficients are in the left bottom, and the numbers are regression coefficients. \*\*\*, \*\* and \* Indicate statistical significant at the 1%, 5% and 10%, respectively.

## REGRESSION ANALYSIS RESULT

### Correlation Between CEO's Comprehensive Power and Firms' Tax Avoidance

This paper explores the correlation between CEO's comprehensive power and corporate tax avoidance. As no direction was expected, two-tail tests were conducted, and Table 5 shows the regression results concerning H1. According to the empirical results, POWER is negatively correlated to ABTD and PBTD. The stronger the CEO's comprehensive power, the lower the total book-tax differences (ABTD) and permanent book-tax differences (PBTD), and the weaker the tax avoidance. This is in agreement with the stewardship theory, meaning that powerful CEOs mitigate tax avoidance mainly by cutting down permanent book-tax differences after considering the benefits of tax avoiding activities, as well as the risks to firm and personal reputations. Meanwhile, there is positive but insignificant correlation between POWER and TBTD, which is probably because temporary book-tax differences only bring deferral effects, and not absolute tax exemptions or reductions. However, these differences may be reversed by tax authorities over the contentious issues, thus, they are not adopted as a tax avoidance strategy due to lower risks and corresponding benefits.



### Correlation Between CEO's Four Power and Firms' Tax Avoidance

H2 examines the relationship between tax avoidance and the four types of CEO power, structural power, ownership power, expert power, and prestige power. Table 5 shows the results. This paper expected that the four types of CEO powers are either positively or negative correlated with tax avoidance so single-tail tests were performed. The regression results suggest that CEO structural power is positively correlated with ABTD and PBTB, but negatively correlated with TBTD. However, only the correlation with PBTB is statistically significant. Based on the finding that ABTD is not significant, the empirical results only support hypothesis H2a on PBTB. However, CEOs with high structural power are engaged in tax avoidance with permanent book-tax differences. This follows the previous finding that a large book-tax difference leads to lower quality of earnings in financial statements, the large book-tax difference is indeed a bad signal to investors, and this is also reflected in the valuations (Hanlon 2005; Blaylock, Shevlin, Wilson, 2012). High structural power is an outcome of CEO duality and exercising oversight, and is at the expense of the check-and-balance functions served by the boards. CEOs may be concerned with overly large book-tax differences resulting from tax avoidance of a negative signal, and hence, will avoid significant total book-tax differences.

The tests of ownership power (OWNP) suggest a significant and negative correlation with ABTD and PBTB, which is in line with expectations. However, it is significantly and positively correlated with TBTD, which is contrary to expectations. That said, the results still support H2b. As described by stewardship theory (and convergence-of-interest hypothesis), CEOs with high ownership power are still risk-averse managers given their concern over the damage to their own interests as a result of tax avoidance and tarnished corporate reputation. Therefore, they discourage tax avoidance behavior by reducing permanent book-tax differences. On the other hand, OWNP is significantly and positively correlated with TBTD, which is probably because temporary book-tax differences are also used to explain earnings management. According to Morck, Shleifer, and Vishny (1988), when management holds sufficient stakes for effective control, they have incentive for direct wealth effects and will maximize non-firm value by exhausting the resources of the principals to pursue personal gains.

Non-value maximization may include earnings management. Fan and Wong (2002) believed that an increase in the ownership of controlling shareholders will lead to control over management policies, including earnings reporting and financial disclosure. Enhanced control due to higher stakes may result in earnings manipulations for personal gains. Therefore, CEOs with strong ownership power and control benefits are motivated for earnings management and might attempt to reduce the recognition of unrealized losses or step up incomes without tax burdens, thereby enlarging book-tax differences. As the previous paragraph on CEO's comprehensive power (POWER) suggests, temporary book-tax differences are reversed over time and CEOs are less concerned about the associated taxation costs. By simultaneously considering earnings management and tax avoidance strategies, CEOs with high ownership cannot be interpreted simply with the convergence-of-interest hypothesis or the entrenchment hypothesis. In general, ownership power is significantly and inversely correlated with total book-tax differences, which suggests an undermined level of tax avoidance. CEOs' ownership power has negative correlation with the total book-tax difference, indicating diminishing tax avoidance.

The tests on expert power (EXPP) show that EXPP is significantly and negatively correlated with ABTD and PBTB, but positively, albeit insignificantly, correlated with TBTD. The results still support H2c, meaning that CEOs with strong expert power are better equipped to discriminate tax avoidance risks based on professional knowledge and work experience. They are more aware of the reputational risks and uncertainties resulted from tax avoidance. When this is combined with the conservative investment strategy during long CEO tenures, it further strengthens CEOs' expert rights and cuts back on tax avoidance by significantly narrowing the permanent book-tax differences. In contrast, temporary book-tax differences have weak influence on reputations, and hence, report no changes. The tests on prestige power (PREP)

show that PREP is positive correlated with ABTD, PBTD, and TBTD. The correlations with ABTD and PBTD are statistically significant, but not with TBTD. The empirical evidence supports H2d, meaning that CEOs with high prestige power can reduce the non-tax costs of the target companies by referring to the sophisticated experience of tax avoidance, as circulated among directors of the network of companies. This enhances the diversity of tax strategies and attracts external organizations to collaborate with transactions for tax purposes. Concern over reputations are mitigated by using common tax avoidance strategies or detecting the attitude of tax authorities from the information shared in the network, which is conducted via permanent book-tax differences. In contrast, the impact of temporary book-tax differences on net tax benefits is not high, and hence, is not changed.

### Control Variables

Corporate governance variables INDB and COMM are both significantly and negatively correlated with ABTD and PBTD. In other words, a high percentage of independent directors and the presence of audit committees lead to better corporate governance and less likely tax avoidance. In addition, the IND and TBTD correlations are negative, while COMM and TBTD are positive, but all are insignificant. This implies the influence of corporate governance on temporary book-tax differences is relatively weak. In terms of company characteristics, firm size (SIZE) is significantly and positively correlated with ABTD and PBTD, while correlation with TBTD is negative, but insignificant. Put differently, the larger the firm size, the more likely tax avoidance strategies are implemented, and permanent book-tax differences are formed. There is no correlation with temporary book-tax differences. The findings regarding total book-tax differences suggest aggressive tax avoidance. While DEBT is positively correlated with ABTD and PBTD, and inversely correlated with TBTD, all are insignificant, indicating a low correlation between debt ratios and corporate tax avoidance. PPE is significantly and positively correlated with PBTD, as expected. However, the negative correlation with TBTD is not significant, which is possibly because of the tax incentives enjoyed by companies with high capex investments. Such companies, however, do not seem to use techniques that affect temporary book-tax differences. In general, the correlation between PPE and ABTD is insignificant. Both ROA and GRA are significantly and positively correlated with ABTD, PBTD and TBTD, which is in line with the expectations.

The research findings on ROA suggest that, the better the profitability, the more likely we are to observe aggressive tax avoidance and lower tax expenses, which is consistent with Mills, Newberry, and Trautman (2002), Frank et al. (2009), and Chen et al. (2010). The results of GRA show that growth companies have more tax avoidance opportunities and motivations. RD is significantly and positively correlated with both ABTD and PBTD, as expected, which indicates that tax incentives for R&D expenses reduce tax burdens. The negative correlation between R&D and TBTD is not significant, which is mainly due to the limited effects on temporary book-tax differences. UNCON is significantly and positively correlated with all three types of book-tax differences, as expected. This implies the greater the investment profits and losses under the equity method, the bigger the book-tax differences and the higher the level of tax avoidance. Regarding the auditors' characteristics as a control variable, BIG4 is significantly and inversely correlated with both ABTD and PBTD, which is in line with expectations, and means the companies audited by the Big Four report a lower degree of tax avoidance, which is consistent with the reputation hypothesis. TENURE is significantly and positively correlated with ABTD and PBTD, and negatively correlated with TBTD, but not significantly. The longer the auditors' tenures, the more likely their independence is compromised, which gives leeway to audit clients in terms of tax avoidance.

To avoid the problems associated with collinearity, this paper uses Variance Inflation Factor (VIF) testing. According to variable regression, the VIF values are all between 1 and 2.2, which is smaller than 10. The explanatory variables used by the empirical model in this paper can make reason estimates and are not subject to the effect of high collinearity.

Table 5: CEO Power and Tax Avoidance

Variables	Model 1			Model 2			
	Expected direction	ABTD	PBTD	TBTD	ABTD	PBTD	TBTD
INT		-0.1012 *** (-8.363)	-0.1213 *** (-10.323)	0.0141 ** (1.549)	-0.0934 *** (-7.683)	-0.1128 *** (-9.566)	0.0135 * (1.476)
POWER	?	-0.0016 ** (-2.220)	-0.0022 *** (-3.176)	0.0008 (1.484)			
STRP	+				0.0009 (1.120)	0.0012 * (1.471)	-0.0001 (-0.101)
OWNP	-				-0.0050 *** (-5.888)	-0.0059 *** (-7.153)	0.0009 * (1.371)
EXPP	-				-0.0028 *** (-3.494)	-0.0024 *** (-3.144)	-0.0004 (-0.748)
PREP	+				0.0013 * (1.535)	0.0012 * (1.423)	0.0001 (0.218)
INDB	-	-0.0360 *** (-7.356)	-0.0373 *** (-7.849)	-0.0018 (-0.485)	-0.0328 *** (-6.673)	-0.0338 *** (-7.096)	-0.0020 (-0.544)
COMM	-	-0.0070 *** (-3.285)	-0.0081 *** (-3.932)	0.0015 (0.966)	-0.0073 *** (-3.432)	-0.0085 *** (-4.127)	0.0016 (1.012)
ROA	+	0.3230 *** (23.963)	0.3111 *** (23.785)	0.0291 *** (2.878)	0.3269 *** (24.263)	0.3155 *** (24.153)	0.0286 *** (2.824)
GRA	+	0.0307 *** (9.667)	0.0292 *** (9.490)	0.0041 ** (1.712)	0.0298 *** (9.408)	0.0283 *** (9.198)	0.0042 ** (1.742)
SIZE	?	0.0102 *** (5.691)	0.0118 *** (6.828)	-0.0011 (-0.807)	0.0087 *** (4.861)	0.0103 *** (5.903)	-0.0010 (-0.722)
DEBT	?	-0.0042 (-0.839)	-0.0058 (-1.194)	0.0021 (0.557)	-0.0036 (-0.729)	-0.0052 (-1.072)	0.0020 (0.542)
PPE	+	0.0031 (0.765)	0.0064 * (1.594)	-0.0018 (-0.567)	0.0050 (1.211)	0.0084 ** (2.091)	-0.0019 (-0.602)
RD	+	0.7935 *** (14.877)	0.8786 *** (16.974)	-0.0132 (-0.331)	0.8022 *** (15.061)	0.8860 *** (17.156)	-0.0123 (-0.307)
UNCON	+	0.7539 *** (10.446)	0.5341 *** (7.626)	0.2742 *** (5.066)	0.7225 *** (10.006)	0.5006 *** (7.149)	0.2759 *** (5.082)
BIG4	-	-0.0046 ** (-2.165)	-0.0040 ** (-1.980)	-0.0010 (-0.614)	-0.0041 ** (-1.946)	-0.0036 ** (-1.783)	-0.0009 (-0.579)
TENURE	+	0.0003 *** (2.843)	0.0004 *** (4.194)	-0.0001 (-1.180)	0.0003 *** (2.534)	0.0004 *** (3.872)	-0.0001 (-1.170)
YEAR		YES	YES	YES	YES	YES	YES
INDUSTRY		YES	YES	YES	YES	YES	YES
.R <sup>2</sup> (%)		0.255	0.249	0.057	0.259	0.254	0.057
. Adj.R <sup>2</sup> (%)		0.250	0.244	0.050	0.253	0.249	0.050
F Value		50.483 ***	48.996 ***	8.883 ***	48.466 ***	47.309 ***	8.3803 ***

This table shows the regression estimates of the model 1:  $BTD_{it} = \beta_0 + \beta_1POWER_{it} + \beta_2INDB_{it} + \beta_3COMM_{it} + \beta_4ROA_{it} + \beta_5GRA_{it} + \beta_6SIZE_{it} + \beta_7DEBT_{it} + \beta_8PPE_{it} + \beta_9RD_{it} + \beta_{10}UNCON_{it} + \beta_{11}BIG4_{it} + \beta_{12}TENURE_{it} + Year\ Dummies + Industry\ Dummies + \epsilon_{it}$ , and model 2:  $BTD_{it} = \beta_0 + \beta_1STRP_{it} + \beta_2OWNP_{it} + \beta_3EXPP_{it} + \beta_4PREP_{it} + \beta_5INDB_{it} + \beta_6COMM_{it} + \beta_7ROA_{it} + \beta_8GRA_{it} + \beta_9SIZE_{it} + \beta_{10}DEBT_{it} + \beta_{11}PPE_{it} + \beta_{12}RD_{it} + \beta_{13}UNCON_{it} + \beta_{14}BIG4_{it} + \beta_{15}TENURE_{it} + Year\ Dummies + Industry\ Dummies + \epsilon_{it}$  for all samples. All data are taken from Taiwan Economic Journal from 2010 to 2016. The first figure in each cell is the regression coefficient. The second figure in each cell is the t-statistic. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10 percent levels respectively.

**Sensitivity Analysis**

**Whether Firms Are Governed (Ultimately Controlled) by Professional Managers**

The literature typically presumes that the decision regarding tax avoidance rests on the unitary decision makers (i.e. the owner and the decision-maker being the same person). However, the analysis of Chen and Chu (2005) regarding tax evasion in the shareholders-managers model assumes that risk-averse managers

in charge of production will file company profits with tax authorities. The work inputs from these managers has positive impact on corporate profits, and only when managers' risk-aversion is not constant will their production decisions be influenced by the shareholders' policy on tax avoidance. In such circumstances, it is the shareholders that orchestrate tax avoidance and evasion, meaning managers collaborate in a passive manner because they are paid by shareholders. Of course, managers know more about production and financials than shareholders. Thus, managers are the most influential group in company decisions. Whether tax avoidance outcomes vary under the effects of CEO power is an issue worthy of sensitivity analysis. Governance by professional managers can be defined as one type of ultimate control. This paper uses the definition of the Taiwan Economic Journal regarding conglomerate control. Ultimate control is divided into four types, i.e. single-family dominance, collective governance, managerial control, and public ownership. A dummy variable is established in this paper for managerial control, which implies that managers take charge of key decisions in the absence of major shareholders, or significant shareholders are not involved in operations or corporate decisions. This paper refers to managerial governance as a moderating variable when revisiting the influence of CEO power on tax avoidance, and the results are compared with the main empirical findings. In contrast with the findings, as derived by Eq. (1) and Eq. (2), the models are constructed with Eq. (3) and Eq. (4), as follows:

$$\begin{aligned}
 \text{BTD}_{it} = & \beta_0 + \beta_1 \text{MA}_{it} + \beta_2 \text{POWER}_{it} + \beta_3 \text{POWER}_{it} * \text{MA}_{it} + \beta_4 \text{INDB}_{it} + \beta_5 \text{COMM}_{it} + \\
 & \beta_6 \text{ROA}_{it} + \beta_7 \text{GRA}_{it} + \beta_8 \text{SIZE}_{it} + \beta_9 \text{DEBT}_{it} + \beta_{10} \text{PPE}_{it} + \beta_{11} \text{RD}_{it} + \beta_{12} \text{UNCON}_{it} + \\
 & \beta_{13} \text{BIG4}_{it} + \beta_{14} \text{TENURE}_{it} + \text{Year Dummies} + \text{Industry Dummies} + \varepsilon_{it} \quad (3)
 \end{aligned}$$

$$\begin{aligned}
 \text{BTD}_{it} = & \beta_0 + \beta_1 \text{MA}_{it} + \beta_2 \text{STRP}_{it} + \beta_3 \text{STRP}_{it} * \text{MA}_{it} + \beta_4 \text{OWNP}_{it} + \beta_5 \text{OWNP}_{it} * \text{MA}_{it} + \\
 & \beta_6 \text{EXPP}_{it} + \beta_7 \text{EXPP}_{it} * \text{MA}_{it} + \beta_8 \text{RPEP}_{it} + \beta_9 \text{RPEP}_{it} * \text{MA}_{it} + \beta_{10} \text{INDB}_{it} + \\
 & \beta_{11} \text{COMM}_{it} + \beta_{12} \text{ROA}_{it} + \beta_{13} \text{GRA}_{it} + \beta_{14} \text{SIZE}_{it} + \beta_{15} \text{DEBT}_{it} + \beta_{16} \text{PPE}_{it} + \\
 & \beta_{17} \text{RD}_{it} + \beta_{18} \text{UNCON}_{it} + \beta_{19} \text{BIG4}_{it} + \beta_{20} \text{TENURE}_{it} + \text{Year Dummies} + \\
 & \text{Industry Dummies} + \varepsilon_{it} \quad (4)
 \end{aligned}$$

The symbol MA<sub>it</sub> is denotes the dummy variable, with 1 indicating managerial control and 0 if not. The definitions of other variables are the same as Model (1) and Model (2). The empirical findings are presented in Table 6. CEO's comprehensive power and the four types of CEO powers are not enhanced in companies controlled by managers. Empirical analysis indicates that the influence of CEO power on tax avoidance is the same as companies controlled by managers and companies not controlled by managers. In the companies not controlled by managers, CEOs' decision power is subject to the influence of other controllers. However, such influence is not pronounced on tax avoidance decisions in the presence of strong CEOs' power, thus, it can be inferred that CEOs with strong power exert the same influence in companies regardless of control type.

Table 6: CEO Power and Tax Avoidance (Distinguishing Whether the Company Is Governed by Professional Managers)

Variables	Expected direction	Model 1			Model 2		
		ABTD	PBTD	TBTD	ABTD	PBTD	TBTD
INT		-0.1015 *** (-8.386)	-0.1216 *** (-10.350)	0.0144 * (1.548)	-0.0937 *** (-7.690)	-0.1126 *** (-9.534)	0.0129 * (1.412)
MA	+	0.0033 ** (1.891)	0.0032 ** (1.888)	0.0004 (0.319)	0.0033 ** (1.808)	0.0034 ** (1.945)	0.0001 (0.085)
POWER	?	-0.0015 ** (-1.929)	-0.0020 *** (-2.613)	0.0007 (1.221)			
POWER* MA	?	0.0001 (0.083)	-0.0005 (-0.277)	0.0003 (0.240)			
STRP	+				0.0006 (0.653)	0.0013 * (1.405)	-0.0005 (-0.676)
STRP* MA	+				0.0008 (0.412)	-0.0010 (-0.536)	0.0018 (1.213)
OWNP	-				-0.0048 *** (-5.087)	-0.0058 *** (-6.381)	0.0010 * (1.458)
OWNP* MA	-				-0.0005 (-0.258)	-0.0002 (0.097)	-0.0008 (-0.493)
EXPP	-				-0.0028 *** (-3.098)	-0.0024 *** (-2.678)	-0.0007 (-0.964)
EXPP* MA	-				-0.0003 (0.150)	-0.0006 (-0.356)	0.0008 (0.569)
PREP	+				0.0017 ** (1.796)	0.0015 * (1.639)	0.0002 (0.279)
PREP*MA	+				-0.0015 (-0.768)	-0.0014 (-0.736)	-0.0000 (-0.015)
INDB	-	-0.0367 *** (-7.469)	-0.0379 *** (-7.951)	-0.0019 (-0.513)	-0.0334 *** (-6.785)	-0.0345 *** (-7.211)	-0.0020 (-0.547)
COMM	-	-0.0072 *** (-3.360)	-0.0084 *** (-4.029)	0.0015 (0.963)	-0.0075 *** (-3.507)	-0.0088 *** (-4.225)	0.0016 (1.020)
SIZE	?	0.0101 *** (5.677)	0.0118 *** (6.813)	-0.0011 (-0.809)	0.0087 *** (4.831)	0.0102 *** (5.840)	-0.0009 (-0.678)
DEBT	?	-0.0043 (-0.870)	-0.0059 (-1.214)	0.0020 (0.544)	-0.0035 (-0.749)	-0.0053 (-1.099)	0.0021 (0.560)
PPE	+	0.0038 (0.920)	0.0070 ** (1.738)	-0.0017 (-0.533)	0.0056 * (1.356)	0.0089 ** (2.224)	-0.0018 (-0.565)
ROA	+	0.3233 *** (23.981)	0.3115 *** (23.812)	0.0291 *** (2.8875)	0.3269 *** (24.219)	0.3153 *** (24.086)	0.0291 *** (2.869)
GRA	+	0.0304 *** (9.570)	0.0290 *** (9.396)	0.0040 ** (1.694)	0.0296 *** (9.321)	0.0281 *** (9.115)	0.0041 ** (1.714)
RD	+	0.7979 *** (14.946)	0.8829 *** (17.043)	-0.0127 (-0.317)	0.8078 *** (15.118)	0.8891 *** (17.161)	-0.0088 (-0.220)
UNCON	+	0.7570 *** (10.488)	0.5368 *** (7.664)	0.2747 *** (5.073)	0.7262 *** (10.028)	0.5022 *** (7.151)	0.2776 *** (5.097)
BIG4	-	-0.0048 ** (-2.284)	-0.0043 ** (-2.096)	-0.0010 (-0.636)	-0.0043 ** (-2.038)	-0.0038 ** (-1.876)	-0.0009 (-0.590)
TENURE	+	0.0003 *** (2.816)	0.0004 *** (4.183)	-0.0001 (-1.193)	0.0003 *** (2.522)	0.0004 *** (3.880)	-0.0001 (-1.195)
YEAR		YES	YES	YES	YES	YES	YES
INDUSTRY		YES	YES	YES	YES	YES	YES
R <sup>2</sup> (%)		0.255	0.249	0.057	0.259	0.254	0.057
Adj.R <sup>2</sup> (%)		0.250	0.244	0.050	0.253	0.248	0.050
F Value		48.506 ***	47.084 ***	8.521 ***	44.140 ***	43.090 ***	7.647 ***

This table shows the regression estimates of the model 1:  $BTD_{it} = \beta_0 + \beta_1 MA_{it} + \beta_2 POWER_{it} + \beta_3 POWER \cdot MA_{it} + \beta_4 INDB_{it} + \beta_5 COMM_{it} + \beta_6 ROA_{it} + \beta_7 GRA_{it} + \beta_8 SIZE_{it} + \beta_9 DEBT_{it} + \beta_{10} PPE_{it} + \beta_{11} RD_{it} + \beta_{12} UNCON_{it} + \beta_{13} BIG4_{it} + \beta_{14} TENURE_{it} + \text{Year Dummies} + \text{Industry Dummies} + \varepsilon_{it}$ , and model 2:  $BTD_{it} = \beta_0 + \beta_1 MA_{it} + \beta_2 STRP_{it} + \beta_3 STRP_{it} \cdot MA_{it} + \beta_4 OWP_{it} + \beta_5 OWP_{it} \cdot MA_{it} + \beta_6 EXPP_{it} + \beta_7 EXPP_{it} \cdot MA_{it} + \beta_8 RPEP_{it} + \beta_9 RPEP_{it} \cdot MA_{it} + \beta_{10} INDB_{it} + \beta_{11} COMM_{it} + \beta_{12} ROA_{it} + \beta_{13} GRA_{it} + \beta_{14} SIZE_{it} + \beta_{15} DEBT_{it} + \beta_{16} PPE_{it} + \beta_{17} RD_{it} + \beta_{18} UNCON_{it} + \beta_{19} BIG4_{it} + \beta_{20} TENURE_{it} + \text{Year Dummies} + \text{Industry Dummies} + \varepsilon_{it}$  for all samples. All data are taken from Taiwan Economic Journal from 2010 to 2016. The first figure in each cell is the regression coefficient. The second figure in each cell is the t-statistic. \*\*\*, \*\* and \* indicate significance at the 1, 5 and 10 percent levels respectively.

## CONCLUSION

CEOs act as the principal’s agents and executives for corporate management. Taxes are an obligation of companies as a result of their operating activities; hence, taxes are a part of operating costs. Tasked with the highest management responsibilities and social expectations, CEOs are compensated with

remunerations and personal interests. CEOs play a pivotal role in the determination of firms' tax avoidance intensity. However, the level of CEO influence on the level of tax avoidance will vary given the different strengths of CEO power. This paper sets out to explore the relation between CEO power and tax avoidance by sampling companies listed on the TWSE and TPEX in 2010~2016. Book-tax differences are used as a proxy and dependent variable. Total book-tax differences are categorized into permanent and temporary for detailed analysis. CEO power is set up as the independent variable, and divided into structural power, ownership power, expert power, and prestige power.

Research findings suggest a significant and adverse correlation between CEO's comprehensive power and total book-tax differences. The stronger the CEO power, the less the tax avoidance and the lower the taxation risks, which is primarily via a reduction of permanent book-tax differences. Temporary book-tax differences are not adopted in a major manner. In terms of the four types of CEO power, i.e. structural power, ownership power, expert power, and prestige power, there is significant and positive correlation between structural power and permanent book-tax differences, which is indicative of tax avoidance. To avoid special attention from investors, CEOs with high structural power try to maintain a total book-tax difference that is not overly obvious. The higher the ownership power, the lower the total book-tax differences and permanent book-tax differences. As stewardship theory (and convergence-of-interest hypothesis) posits, CEOs with high ownership seek to protect the interest of all shareholders. After consideration of the impact of taxation risks on company reputations, they mitigate tax avoidance by reducing the book-tax differences. It is worth noting that there is significant and positive correlation between ownership power and temporary book-tax differences, which is inconsistent with expectations, and is probably because CEOs with high ownership pursue earnings management with discretionary accruals.

The empirical evidence suggests that CEOs with high expert power scale back on tax avoidance. The greater the breadth of professional knowledge, internal status, and seasoned experience in key functions, the better equipped CEOs are in discerning reputational risks due to tax avoidance. Therefore, they adopt a conservative tax strategy to protect reputations and honor corporate social responsibilities. Prestige power is significantly and positively correlated with tax avoidance, which indicates the strengthening of social network connections, as built on prestige, helps to facilitate tax avoidance. The mitigation of tax avoidance by CEOs with high expert power and the engagement of tax avoidance by CEOs with high prestige power are both materialized in permanent book-tax differences. Statistics on temporary book-tax differences are insignificant, indicating no adoption. Book-tax differences are calculated as pre-tax financial income less taxable income. As taxable incomes are confidential and non-public information, this paper calculates taxable income according to the relevant information in financial statements. This is a research limitation. Meanwhile, book-tax differences change as a result of late and requested tax payments following excessive tax avoidance. Under these circumstances, observed values of proxy variables are indicative of low levels of tax avoidance. This is a research limitation of using book-tax differences as a proxy variable. It is hoped that future studies can rectify this problem.

What are the key components of the influence of CEO power on corporate tax avoidance? This is an issue yet to be dealt with in research of the relation between management and tax avoidance. As mentioned by Desai and Dharmapala (2009), corporate tax avoidance is influenced by corporate governance mechanisms, audits, and enforcement by tax authorities. As the top management of corporate governance chains, CEOs are highly influential in tax avoidance. Audits and law enforcement of tax authorities have a direct impact on the reputations and risks associated with corporate tax avoidance. Given the rising concern over global sustainable development, CEOs strive to ensure the reputation of firms and play their part in corporate social responsibilities. The research findings of this paper help clarify how CEO power strengths affect tax avoidance behaviors, which can assist firm owners to better understand management's attitude toward tax avoidance. In the meantime, tax authorities can better understand the relation between CEO power and

corporate tax avoidance. CEO characteristics can serve as a reference for selecting tax files for inspection and enhancing auditing effectiveness.

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