

Monetary and Nonmonetary Incentives for Tax Planning in Chinese SOEs

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Abstract

This study investigates the unique incentives for tax planning in Chinese State-Owned Enterprises (SOEs). We found that cash effective tax rates (cash ETRs) were positively associated with both CEO compensation and the promotion of the CEOs. This suggests that monetary rewards (i.e., compensation) and nonmonetary rewards (i.e., promotion) both motivate CEOs in SOEs to pay more taxes to the majority shareholder (i.e., the Chinese government), which could be an example of the majority shareholder taking unfair advantage of the minority shareholders (tunneling). We also found that cross-listing in Hong Kong or other Western stock exchanges could negatively moderate the tunneling.

JEL Classification: M4; G34

Keywords: tax aggressiveness, CEO compensation, CEO promotion, Chinese SOEs, cross-listing

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1. Introduction

Taxes are significant expenses and cash outflows for corporations. The taxes paid by public firms in the United States constitute the second-largest expense in multiple industries (Houder, 2010). In general, companies need to spend about one third of their income on taxes (Chen, Chen, Cheng, & Shevlin, 2010). However, some firms pay fewer taxes than other firms, and we do not have a complete understanding of why some firms are more tax aggressive than others (Shevlin, 2007). More interestingly, some firms voluntarily pay more taxes to the government and we have limited understanding of their motivations.

Tax aggressiveness is broadly defined as “downward management of taxable income through tax planning activities that may or may not be considered fraudulent tax reporting” (Frank, Lynch, & Rego, 2009). Prior accounting research has found that some firms’ attributes provide opportunities for tax savings, such as profitability, leverage, intangible assets, assets intensity, and research and development expenditures (Graham & Tucker, 2006; Gupta & Newberry, 1997; Rego, 2003; Wilson, 2009). Corporations may not choose to utilize all opportunities to minimize taxes (Frank et al., 2009). Therefore, firms with similar tax saving opportunities may still exhibit different degrees of tax aggressiveness due to different levels of incentives to use these opportunities to reduce tax burdens.

Several studies in prior accounting research have examined whether CEO compensation is one type of the incentives for tax planning, but these studies have had mixed results. For

instance, Philips (2003) found no significant relationship between the bonuses of CEOs and corporate tax savings, suggesting that CEOs' compensation is not an incentive for corporate tax planning. The findings of Armstrong et al. (2012) were consistent with Philips (2003). However, Rego and Wilson (2012) found that CEOs' equity compensation convexity is positively associated with tax aggressiveness, a finding contradicted by the two prior studies, and therefore argued that CEO compensation is an incentive for tax planning. Gaertner (2014) supported Rego and Wilson's (2012) interpretation by providing more evidence that compensation influences firms' tax behavior.

Our paper is motivated by the inconclusive results in the literature, and we argue that the mixed results may be explained by the fact that different types of firms behave differently. Therefore, we may need to re-examine this question for different subgroups of firms. Our study investigates whether compensation is an incentive for tax aggressiveness in a unique type of corporation—Chinese state-owned enterprises (SOEs)—where firms have a concentrated ownership structure (i.e., having a majority shareholder) and the majority shareholder of the firm is the government. The government is not only the majority shareholder of this type of firm but also the recipient of taxes, which creates unique incentives for corporate tax planning. Companies without a government shareholder normally strive to save taxes for shareholders; however, SOEs might have incentives to pay more taxes to please the government, which is usually their most important shareholder. Under this unique setting, the CEOs in SOEs may work for the best interests of majority shareholders and take advantage of minority shareholders,

which is tunneling (Zengquan, Zheng, & Zhiwei, 2004). It would be interesting to know whether the CEOs of SEOs are motivated by compensation to serve the best interests of the government.

When CEOs make decisions on tax planning, they may consider their future career (nonmonetary incentives) beyond simple compensation (monetary incentives). CEOs in SOEs only have limited access to opportunities in non-SOEs (Li & Zhou, 2005), which further strengthens the alignment of interests between the state and the SOE CEOs. As Chen et al. (2010) noted, firms may forgo tax savings to protect their reputation. Whereas other CEOs may also be less tax aggressive if they consider their long-term reputation when pursuing their career goal, SOE CEOs may even want to pay additional taxes to increase their chances of promotion. If CEOs are less tax aggressive due to the incentives from compensation and career consideration, this is not necessarily beneficial for SOEs' minority shareholders (e.g., individual investors) because taxes represent costs for shareholders. We also want to study whether corporate governance could mitigate these two incentives. Lanis & Richardson (2012) found that corporate governance works as a brake for tax aggressiveness. We are interested to know if corporate governance could prevent Chinese SEOs from paying additional taxes.

We use the setting of Chinese SOEs to explore our three research questions. First, we investigate whether CEO compensation is an incentive for tax planning in Chinese SOEs. Second, we explore whether CEO promotion is an incentive for tax planning in Chinese SOEs. Third, we examine whether corporate governance could mitigate the two incentives in Chinese SOEs—more specifically, whether cross-listing in a Western stock exchange or Hong Kong

stock exchange (which arguably have more requirements and stricter regulations for listed firms compared to regulations in stock exchanges in China) could mitigate the two incentives.

By studying all SOEs included in the Chinese Securities Index (CSI) 300 for the period from 2002 to 2014, our results suggest that compensation is positively associated with the cash effective tax rate (ETR) in Chinese SOEs, which signals that CEOs are induced by monetary incentives to pay more taxes to the state. We also find that a CEO's probability of promotion is significantly and positively associated with cash ETR, suggesting that CEOs are also induced by nonmonetary incentives to pay more taxes to the government. However, when firms are cross-listed in a stock exchange other than the Shanghai or Shenzhen Stock Exchange, both monetary and nonmonetary incentives became weaker for tax planning.

Our results have important academic implications. First, our study supports the stream of Rego and Wilson (2012) by finding that compensation is an incentive for corporate tax planning in SOEs. However, contracted to western studies, compensation works as an accelerator for paying taxes in the unique Chinese SOEs setting, probably due to the tunneling effect. Second, nonmonetary incentives are understudied in the literature, and one of the reasons that we lack nonmonetary studies is the difficulty of measuring such incentives. Taking advantage of the unique Chinese setting, we have successfully quantified the promotion in SOEs and found evidence to support the argument that nonmonetary incentives also influence tax aggressiveness. Third, we discover that cross-listing in a stock exchange other than Chinese mainland stock exchanges mitigates the incentives for tax planning, which adds evidence to the relationship

between corporate governance and tax aggressiveness. Fourth, we contribute to the international accounting and tax literature and literature by examining firms' tax planning behavior when the significant tunneling effect present in Chinese SOEs. Last, we contribute to SOE literature as well. China is not the only country with SOEs, and our findings regarding Chinese SOEs could be generalized to those in other countries. For example, SOEs in countries of the Organization for Economic Co-operation and Development (OECD, including the United States, Canada, the United Kingdom, Australia, etc.) also represent a substantial part of their country's GDP as well as employment and market capitalization (OECD, 2005). Our study has provided deeper understanding of the incentives for tax aggressiveness in SOEs.

Our results also have important practical implications that might be of interest to international investors and analysts. Although China has become the second largest world economy, and large Chinese companies now compete aggressively overseas, our understanding of the business practices of Chinese firms remains limited. Our study contributes to understanding big Chinese SOEs' tax behaviors. This is important because the financial market reacts negatively to tax aggressiveness (Hanlon & Slemrod, 2009). Investors and analysts might be keen to know which types of firms are more aggressive in tax savings. Our results suggest that in general SOEs with higher CEO compensation and CEO promotion are less aggressive in tax savings; however, cross-listing weakens the two incentives. Our results also point to the possibility that SOEs might pay additional taxes to the majority shareholders for CEOs' personal benefits to investors and analysts.

The remainder of this paper is organized as follows: in the next section, we introduce the history of SOEs briefly as the background for this study. Then we provide a review of the relevant literature and develop the four study hypotheses. In the following section, we introduce our research design and provide a description of our data. Next, we present the results of our regression analyses, and, finally, we summarize and provide conclusions for the study.

2. Background

When the People's Republic of China was established on October 1, 1949, the government owned all of the country's enterprises and operated all firms' daily operations. The government also made all decisions regarding production and capital allocation (Sun & Tong, 2003). SOEs were protected by the government—the sales of products were guaranteed—and were not motivated to become more competitive in the market (i.e., improve efficiency and reduce costs).

In 1978, China opened its market to the world and started reforming. At this time, SOEs were forced to compete with other private or international firms in the market. To modernize SOEs and increase their profitability, the Chinese government decided to separate the ownership of these organizations from their management. In fact, the term “state-owned enterprises” was first introduced during this reform (Fan, 2013). After separating SOE ownership and management, the state still owned and controlled the majority of the firms, but this reform gave SOEs more autonomy in running businesses while also providing the SOEs with incentives to improve their performance.

A milestone in the history of Chinese SOEs was the introduction of the Company Law in 1994, which allowed SOEs to transform into limited-liability companies or shareholding companies (Fan, 2013). In 1990, the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) were established. As a result, SOEs could go public on the two exchanges, and they had sources from which to raise funds other than bank loans and government funds.

The philosophy of SOE reform also changed in the 1990s. The leading principle was “grasping the big, letting go of the small” (Fan, 2013). Under the guidance of this principle, the central governments maintained control over the largest and most important SOEs to control important industries such as banking, petroleum, natural gas, mining, and power. The provincial governments were authorized to control and oversee smaller SOEs, the smallest of which were “let go,” meaning they went bankrupt or were privatized when individuals purchased them.

Another milestone in the evolution of SOEs was the setup of the State-Owned Assets Supervision and Administration Commission (SASAC) in 2003. On behalf of the central government, the SASAC supervises the 112 most important SOEs, but it is not involved in any of the firms’ daily operations.¹ Currently, the central SOEs are becoming large-scale multinational firms, and, in 2013, three of the ten largest firms in the world were Chinese: China Sinopec Group, China National Petroleum, and the State Grid Corporation of China (*Forbes*).² The non-central SOEs are supervised by subnational SASACs at the provincial, municipal, and

¹ <http://www.sasac.gov.cn/n1180/n1226/n2425/index.html>

² <http://www.forbes.com/sites/panosmourdukoutas/2013/07/17/worlds-500-largest-corporations-in-2013-the-chinese-are-rising/>

national levels, and the role of these subnational SASACs is similar to that of the SASAC. More importantly, CEOs in SOEs are appointed and promoted by the SASAC (SASAC website),³ which makes the CEOs quasi-government officers (Chan, Mo, & Zhou, 2013; Zeng, 2010).

3. Literature Review and Hypotheses Development

3.1 Ownership Concentration

Ownership structure is believed to be a key determinant of corporate governance (Shleifer & Vishny, 1997) and has significant influence on corporate tax aggressiveness (Hanlon & Heitzman, 2010). For example, Klassen (1997) found that firms with higher insider ownership concentration were more likely to report greater losses and lower income to save taxes, suggesting that ownership-concentrated firms are more aggressive in tax savings compared to other firms. Chen et al. (2010) noted that family firms are less aggressive than nonfamily firms in avoiding the price discounts that shareholders impose on tax aggressive firms and the potential penalties due to tax avoidance, and these results suggest that ownership-concentrated firms are less tax aggressive, which contradicts Klassen (1997).

One possible explanation of these inconsistent results is that not only does ownership concentration matter to tax aggressiveness but also the nature of the controlling shareholder is essential to tax decisions. By studying Chinese samples, Zeng (2010) discovered that whereas firms with concentrated share ownership have lower effective tax rates in general, firms with the government as their majority shareholder have higher effective tax rates compared to firms with

³ <http://www.sasac.gov.cn/gzjg/yjkh/200408100173.htm> (in Chinese)

nongovernment majority shareholders. This finding is also supported by Wu, Wang, Luo and Gillis (2012), who found the size effects of state-controlling shareholders and non-state-controlling shareholders were different.

We chose SOEs as our study objectives because they are ownership-concentrated firms and their controlling shareholders are the government. Different from other investors to whom taxes are simply expenditures, the state collects the taxes paid by firms, and the tax is a form of dividend paid by firms only to the majority shareholder. This unique setting creates special incentives for tax aggressiveness because the CEO may want to maximize the benefit of the majority shareholders by paying more taxes, even though more taxes may reduce the benefits of other shareholders. Liu and Cao (2007) confirmed this argument and found that SOEs have higher effective tax rates compared to non-SOEs.

Our study started with this unique setting and explored further whether compensation and/or promotion induced more tax payments—and whether corporate governance weakened the associations.

3.2 Compensation and Tax Aggressiveness

There are limited studies investigating the relationship between executive compensation and tax aggressiveness (Rego & Wilson, 2012). The empirical results are not conclusive regarding whether CEO compensation plays a role in firm tax behavior. In theory, reducing taxes maximizes the value of a firm. Therefore, it is in investors' interests to minimize taxes. Investors may align the interests of shareholders and CEOs and motivate managers to pay fewer

taxes. As a common means of incentives, compensation is used to align the interests between the two parties. Thus, investors may use compensation as an incentive for tax savings, and CEO compensation is expected to be positively associated with tax aggressiveness.

Crocker and Slemrod (2005) proposed a theoretical model of the contractual relationship between shareholders and managers, and they argued that investors should use compensation to motivate managers to save more taxes, which is in the interest of shareholders.

Philips (2003) provided empirical evidence on this relationship between manager compensation and tax aggressiveness. Philips found that using the after-tax performance measure for CEO compensation does not significantly influence effective tax rates; however, using the after-tax performance measure for unit managers leads to lower effective tax rates.

Armstrong, Blouin and Larcker (2012) found that CEO compensation is not a significant incentive for tax aggressiveness, whereas CFO compensation is. This line of studies suggests that CEO compensation is not significantly associated with tax aggressiveness.

Some other studies have suggested CEO compensation does induce tax aggressiveness. For instance, Desai and Dharmapala (2006) showed a negative relationship between the top five paid executives' compensation and tax sheltering, but this relationship was mainly driven by the weaker-governed firms. Rego and Wilson (2012) argued that CEO equity compensation is an incentive for tax planning, finding that CEOs' equity compensation convexity to be positively associated with tax aggressiveness. They argued that equity compensation is a proxy for risk-taking activities, and it induces CEOs to maintain risky tax strategies (i.e., be more aggressive in

tax savings). Gaertner (2014) re-examined Philips's study (2003) and supported Rego and Wilson (2012) by providing evidence that the use of after-tax accounting earnings as the performance measure motivates CEO be more aggressive in tax savings and display greater degrees of corporate tax aggressiveness.

Taken together, the prior literature provides mixed results about whether there is any link between tax aggressiveness and CEO compensation and whether this link is positive or negative. We predict that different types of firms may behave differently, and this may cause mixed results. Therefore, we may need to re-examine this question in different subgroups of firms. As discussed in the previous section, we believe Chinese SOEs are unique and probably provide special incentives for CEOs, and thus we will test this relationship in Chinese SOEs.

3.3 CEO Promotion and Tax Aggressiveness

Only a few research studies exist on the topic of CEO promotion and tax aggression. This might be because it is difficult to measure the promotion or demotion of a CEO in Western countries. For example, if the CEO of HP becomes the CEO of Apple, it would be problematic to argue this change is a promotion. However, the setting of Chinese SOEs makes such quantification possible.

As introduced in the background section, the CEOs of SOEs are quasi-government officers who are appointed as well as promoted by the government (Burns, 2007; Zeng, 2010). For instance, SASAC has the responsibility, among others, to “appoint or remove the responsible persons for the invested enterprises and evaluate their performance in accordance with the

statutory procedures, and granting rewards or impose punishments based on the evaluation results.” All public Chinese employees or officers, including CEOs in SOEs, are ranked into 15 categories (Burns, 2007). Most CEOs in SOEs have bureaucratic ranks; for instance, CEOs in Sinopec (the largest Chinese Petroleum and Chemical Corporation) have a bureaucratic rank of level 3 “Minister/Governor” (Sinopec website).⁴ This setting enables us to objectively measure the promotion or demotion of a CEO. In addition to the political promotion, we also count for the business promotion. Our measure of business promotion is objective too, and our definition of business promotion is the CEO becomes the CEO of the parent company. Most public SOEs have a parent company that represents the SASAC to control the public company.

Prior literature suggests the Chinese government closely monitors the behavior of their officers, and the economic development is usually a critical factor to influence the promotion of government officers. For instance, Feng and Wu (2013) found the GDP growth rate has significant positive impact on the promotion probability of government officers by studying all provincial officers during the period of 1978 and 2013. Yang and Zheng (2013) also found GDP growth rate is positively associated with the promotion chance of municipal officers.

SASAC works on behalf of the government to monitor and steer the behavior of CEOs in SOEs. Empirical evidence shows that the economic performance of a firm significantly influences the CEO’s promotion probability. For instance, Yang, Wang and Nie (2013) found the earnings growth rate positively influences the promotion of CEOs. While central and local

⁴ <http://www.sinopecgroup.com/group/gsj/gsglc/wyp.shtml> (in Chinese)

SASAC are very specific about the performance requirements for CEOs in SOEs, the central SASAC is silent about the requirements for taxes. However, some local SASAC implied that tax matters to the evaluation of SOE CEOs. For example, the SASAC in Qingdao City mentioned in their SOE CEO performance appraisal method⁵ that the state owner's interests should be considered in the evaluation, and the before-tax performance should be used as the firm performance measure, suggesting if the more tax are paid to the state, the accounting performance will not be compromised.

The traditional agency theory suggests CEOs are motivated by their compensation to work harder. CEOs may also be motivated by their career development. CEOs in Chinese SOEs have to please the majority shareholder (i.e., the government) so that they can pass the SASAC evaluations to get promotions. Therefore, it is reasonable to predict that promotions are another important incentive for CEOs in SOEs for tax planning decisions.

3.4 Corporate Governance and Tax Aggressiveness

Many researchers have found that corporate government mechanisms are significantly associated with tax aggressiveness (Desai & Dharmapala, 2008; Shleifer & Vishny, 1997). As discussed above, ownership is one of the mechanisms that may serve as a brake for tax aggressiveness.

In our study, we use cross-listing in a Western stock exchange or Hong Kong stock exchange as a proxy for strong corporate governance. There are two stock exchanges in China: the Shanghai and Shenzhen Stock Exchanges, and they are both supervised under the China

⁵ <http://www.qdgzw.gov.cn/n28356025/n30142501/n30142524/100020050906422608.html> (in Chinese)

Securities Regulatory Commission (CSRC). Some researchers have questioned the efficiency of Chinese stock exchanges and criticized them due to the over control of administrative governance instead of formal legal governance (Berkman, Cole, & Fu, 2011; Pistor & Xu, 2005). Both the legal and financial system are not well developed in China security market, and investor protection is weaker compared to other Western countries or Hong Kong (Allen, Qian, & Qian, 2005). We expect cross-listing in a stock exchange with better legal protections for investors will weaken the opportunistic behaviors and reduce agency costs.

3.5 Formal Hypotheses

Traditional agency theory suggests that, in the conflict between managers and investors, managers may not work for the best interests of investors (Jensen & Meckling, 1979). SOEs, including Chinese SOEs, are faced with a different set of institutional factors from those faced by a typical U.S. corporation. Rather than having widespread ownership, SOEs have the state as their majority owners. La Porta et al. (1999) argued that incentives and opportunities of earnings management of firms with controlling owners should be that of “controlling shareholders to both benefit and expropriate the minority shareholders”. Johnson et al. (2000) described earnings management by SOEs as tunneling, which is controlling shareholders managing earnings to advance their own benefit at the expense of minority shareholders. Several empirical SOE tax studies found evidence that tax aggressiveness by SOEs in China is indeed associated with tunneling (Liu & Cao, 2007; Zeng, 2010).

In this paper, we argue the taxes of SOEs are dividend distribution to the majority shareholder, which is the government, and CEOs in SOEs will be less aggressive in tax savings because of the tunneling effect. We predict CEOs in SOEs will be motivated by both momentary (e.g., compensation) and nonmonetary incentives (e.g., promotion) to work for the interests of the majority shareholder. Therefore, we hypothesize both compensation and promotion will be negatively associated with tax aggressiveness in Chinese SOEs. We use cash effective tax rates as the measure of tax aggressiveness. Formally, our hypotheses 1 and 2 are:

H1: Cash ETR is positively associated with CEO compensation in Chinese SOEs.

H2: Cash ETR is positively associated with CEO promotion in Chinese SOEs.

When Chinese SOEs are listed in a stock exchange outside mainland China, they are expected to face more and/or stricter requirements from the stock exchange commission, and, therefore, this tunneling effect will be weakened and further weakens the incentives for paying additional taxes to the majority shareholder. Formally, our hypothesis 3 is

H3: The positive association between CEO compensation (CEO Promotion) and cash effective tax rates is weaker in cross-listed Chinese SOEs compared to other Chinese SOEs that are not cross-listed.

4. Data and Research design

4.1 Data

Our sample starts with the 300 firms included in the China Securities Index 300 (CSI300) for the years 2002–2014. The CSI300 consists of the 300 stocks with the largest market capitalization

and liquidity from all public A-share companies listed on the Shanghai or Shenzhen stock exchanges. Among the 300 firms, 194 of them are SOEs while the other 106 are non-SOEs.

In China, the key executives who lead companies may not necessarily be the CEO but rather the chairman or president. For instance, the most senior position of the Chinese firm Alibaba is the executive chairman MA Yun. We define Chinese CEOs as the executives who sign the annual audited financial statements along with CFOs. Similar to U.S. CEOs, CEOs in Chinese public firms need to sign their content or discontent to the financial reports.

Our data collection started with gathering CEO names from audited annual financial statements. Once we found a CEO left a company during our sample period, we tried to track this CEO's next position from various sources, including SINA financial news (www.sina.com), Google news, and Baidu. If the bureaucratic rank is higher for the new position, we define this change as a promotion for this CEO. However, since the rank could be vague (only 15 levels), we also define some obvious business promotion as promotion. If a CEO of a company becomes the CEO of this company's parent company, although the rank may not change, we define this change as a promotion too.

Compensation data are retrieved from Capital IQ. Stock market data as well as all other financial statement data for the 194 Chinese firms listed on the Shanghai Stock Exchange or Shenzhen Stock Exchange, was also retrieved from Capital IQ. In order to identify the correct ownership category (SOEs or non-SOEs) for each firm, we manually matched firms with these indexes: CSI SOEs (State-Owned Enterprises), CSI SOEs 100, CSI POEs (Private-Owned

Enterprises), CSI POEs 200, and CSI Local SOEs. If the firm is included in any SOE-related index, we define it as SOEs, and if the firm is included in any POE-related index, we define it as non-SOEs. All of the 300 firms are found to belong to at least one index.

Table 1 describes our data selection procedure and lists the sample sizes used in the subsequent regression analysis. Of the 2,522 (194 firms * 13 years) Chinese SOE firm-year observations, there are 852 observations do not have sufficient data to compute the dependent variables or control variables. Among the rest 1,670 observations, 460 firm-year observations did not report compensation data or the total compensation was zero. The resulting dataset was merged with manually-collected CEO promotion information. After we deleted cases with missing data, the final sample size was 562 Chinese firm-years.

A preliminary analysis of the data indicated some extreme values. To reduce the effect of these outliers on the results, we winsorized all of the continuous variables by 1% at the top and 99% at the bottom, including cash ETR, CEO compensation, tenure, ROA, market-to-book ratio, leverage, capital intensity and inventory intensity and size.

4.2 Research Design

4.2.1 Measure of Tax aggressiveness

There are several ways to proxy tax aggressiveness, including effective tax rates (ETRs), cash effective tax rates (cash ETRs), book-tax differences (BTD), discretionary permanent differences (DTA) and tax shelter prediction scores (SHELTER) (Lennox, Lisowsky, & Pittman, 2013; Rego & Wilson, 2012). We chose cash ETR as our measure of tax aggressiveness for several reasons.

The Cash ETR “reflects all transactions that have any effect on the firm’s explicit tax liability, including tax positions with both certain and uncertain outcomes, and thus is the measure that diverges the farthest from the underlying construct of aggressive tax avoidance” (Rego & Wilson, 2012). In addition, Cash ETR is the cash inflow to the majority shareholders (i.e., the government) for Chinese SOEs. We believe our research question will be better answered by studying Cash ETR. Cash ETR is calculated as cash taxes paid divided by pre-tax income (Chen et al., 2010; Lennox et al., 2013).

4.2.2 Measures of CEO Compensation and Promotion

Most Chinese firms only reported total compensation without the detailed descriptions about the components of total compensation, making us unable to analyze each component, such as cash, equity compensation. Therefore, we use the natural log of reported total compensation as the measure of compensation in our study.

As discussed above, the promotion is defined as an increase in the bureaucratic rank or a business promotion. We define business promotion as a dummy variable that equals 1 if the CEO’s bureaucratic rank is higher or the CEO receives a business promotion right after she or he leaves the current position, and 0 otherwise.

4.2.3 Modeling Tax Aggressiveness and Incentives

Our data consists of panel data, and we use fixed-effect models to test our hypotheses and control for the industry fixed effect in the models.

To test our first two hypotheses, we used the cash ETRs as our dependent variable and

controlled for the basic determinants of cash ETRs, which are return on assets (ROA), market-to-book ratio (MTB), leverage (LEV), CEO Tenure (Tenure), capital intensity (FIX), inventory intensity (INV), net loss carry forward (LOSS) and size (SIZE) (Rego & Wilson, 2012; Zeng, 2010). We then incorporated our two test variables: (1) a natural log of CEO total reported compensation, and (2) a dummy variable of CEO promotion. Formally, our models are:

$$\begin{aligned}
 \text{Cash ETR}_{it} = & \beta_0 + \beta_1 \text{Ln}(\text{Compensation})_{it} + \beta_2 \text{Promotion}_{it} + \beta_3 \text{Cross-listing}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \\
 \text{MTB}_{it} + & \beta_6 \text{LEV}_{it} + \beta_7 \text{INV}_{it} + \beta_8 \text{FIX}_{it} + \beta_9 \text{Ln}(\text{Tenure})_{it} + \beta_{10} \text{ROA}_{it} + \beta_{11} \text{LOSS}_{it} + \beta_{12-22} \text{Year} + \\
 & \beta \text{Industries} + \varepsilon_{it}
 \end{aligned} \tag{1}$$

where:

Cash ETR_{it} = Cash ETR calculated as income taxes paid divided by the pre-tax income in year t;

Ln(Compensation)_{it} = Compensation is natural log of CEO total compensation in year t;

Promotion_{it} = an indicator variable that takes the value of 1 if the CEO got a promotion after she/he right left the firm's position, and 0 otherwise;

Cross-listing_{it} = Cross-listing is a dummy variable that takes value of 1 if the firm is cross-listed in Western stock exchanges or Hong Kong Stock Exchange, and 0 otherwise;

SIZE_{it} = Size = natural log of market value;

MTB_{it} = Market-to-book ratio calculated as the market value of common equity divided by book value of common equity at end of current year;

LEV_{it} = Leverage calculated as long-term debt at current year-end divided by book value of equity at current year-end;

INV_{it} = Inventory Intensity calculated as total inventory at current year-end divided by total assets of the firm at current year-end;

FIX_{it} = Capital Intensity calculated as total fixed assets at current year-end divided by total assets of the firm at current year-end;

$Ln(Tenure)_{it}$ = the natural log of the number of years the CEO serves at this position;

ROA_{it} = ROA is calculated as the net income for firm i in year t divided by total assets for firm i in year t-1;

$LOSS_{it}$ = Loss is a dummy variable that takes value of 1 if there is a net loss carry forward and 0 otherwise.

Per Hypothesis 1, the sign of β_1 is predicted to be positive because compensation motivates CEOs to be less tax aggressive and thus leading to a higher Cash ETR. As claimed in Hypothesis 2, the sign of β_2 is predicted to be positive because promotion motivates CEOs to be less tax aggressive and thus paying more taxes to the majority shareholder (i.e., a higher Cash ETR).

We did not predict the sign of size and cross-listing due to the competing theories and mixed empirical evidence. Larger firms have more opportunities to reduce tax burden, however, they are also more closely monitored by investors and analysts, so they may choose to be less aggressive. It also applies to cross-listed firms. Cross-listed firms could utilize their international business to reduce tax payment, but they may face stricter regulation. We expect the market-to-book ratio, which is the proxy for growth opportunity, to be negatively associated

with cash ETR due to two reasons. First, fast-growth firms may spend more on expenditures, especial R&D expenses, resulting in higher tax deductible expenses. Second, the Chinese government may grant tax credits to support high growth firms, and therefore reducing their cash ETR. A higher leverage ratio suggests the higher deductible interest expenses and also cash constraints that the firm may face (e.g., the firm may need more cash to pay interest and principal of a loan), so we predicted that leverage is negatively associated with cash ETR. Inventory intensity and capital intensity both represent opportunities to use different accounting and tax methods to lower cash ETR. CEO tenure signals the power of the CEO, and the powerful CEO could steer the tax strategies to serve the best interests of the CEO. ROA is a proxy for accounting performance. We do not predict the sign of ROA because the prior studies do not have consistent results (e.g., Zeng, 2010). If a firm has loss carryforward, they could use this asset and pay fewer taxes.

To test Hypothesis 3, we used the similar model as above, but decomposed the sample into two subsamples – cross-listed firm and non-cross-listed firms. We predict both β_1 (Compensation) and β_2 (Promotion) will be larger for non-cross-listed firms than cross-listed firms, as predicted by Hypothesis 3.

5. Empirical results

5.1 Descriptive Statistics

Summary statistics for variables are reported in Table 2. Panel A reports the descriptive statistics for the dependent variable (Cash ETR), and Panel B reports the descriptive statistics for the

continuous variables: compensation, ROA, MTB, LEV, Tenure, FIX, INV and SIZE. Panel C presents the descriptive statistics for the discrete variables: Promotion, Cross-listing and LOSS.

As shown in Panel A, the mean level of Cash ETR is 33.9%, which seems very high because the statutory tax rate in China was 33% before 2008 and 25% since 2008. There are solid evidences that SOEs pay higher taxes compared to non-SOEs (Liu & Cao, 2007; Zeng, 2010). Our average Cash ETR is higher than other studies probably because we only include SOEs in our sample. The statistics of all control variables are generally consistent with Zeng (2010), which tested the ETRs of Chinese SOEs for the period from 1998 to 2008.

Panel C presents the descriptive statistics for promotion, cross-listing and loss. In total, around 29.5% firm-year observations' CEOs got promoted after they left the sample company's position.

Table 3 presents the Pearson correlation matrix for the independent variables. Cash ETR is positively and significantly associated with our test variables: promotion and compensation. Our data shows a high correlation between size and cross-listing, which is not surprising because larger firms are more likely to be cross-listed. We dropped cross-listing in regression models when testing Hypotheses 1 and 2, and the results do not change qualitatively. Thus, we still kept the cross-listing in all tables. Other correlations are lower than 50%.

5.2 Regression Results for Hypotheses 1 and 2 (Table 4)

The regression results for Hypotheses 1 and 2, using the cash ETR as the dependent variable, are presented in Table 4. In model 1, we present the results for control variables. We add our first

test variable – Compensation to Model 2, while the second test variable – Promotion is added to Model 3. The full model result is reported in Model 4.

The positive and significant coefficient for compensation suggests that SOEs pay more taxes to the government when CEOs receive more compensation as the incentive, thereby supporting Hypothesis 1. Cash ETR is positively and significantly associated with promotion, and Hypothesis 2 is supported too. CEOs are also motivated by promotion and they would like to pay more taxes to their majority shareholders.

Cross-listed firms have lower cash ETRs compared to other firms, maybe because they could take advantage of the international business to lower their tax rates. The results from Model 1 show larger firms are less aggressive in tax saving. The coefficient of market-to-book ratio is negative and significant, consistent with our prediction that high growth firms may spend more on R&D expenditures which create more tax deductible expenses and possibility receive preferential tax credits from the government, therefore, these firms with higher market-to-book ratio pay less taxes. Consistent with our prediction, cash ETR is negatively associated with leverage ratio. CEOs with longer CEO tenure pay more taxes to the government, suggesting power CEOs steer the firm to serve the interests of majority shareholders. Cash ETR is negatively associated with ROA, signaling profitable firms are striving to reduce tax payments due to their higher tax expenses.

5.3 Regression Results for Hypotheses 3 & 4 (Table 5)

The results of testing hypotheses 3 are presented in Table 5. We investigated whether cross-

listing could mitigate the CEOs' incentives to pay more taxes to majority shareholders. We separated our sample into two groups: cross-listed firms (Model 5) and non-cross-listed firms (Model 6).

In model 5, the coefficients of compensation and promotion are not significant, while in Model 6, the two coefficients are both positive and significant at 0.1%. Our Hypothesis 3 regarding the negative moderate effect of cross-listing on monetary and nonmonetary incentives for tax planning is supported by the results.

5.4 Robustness Tests (Tables 6 & 7)

We tested if our results are sensitive to the models used and the measures of effective tax rates. Effective tax rates are generally believed to be within the range of zero to one, therefore, we first used the Tobit models to re-examine all three hypotheses by setting the lowest value of dependent variable Cash ETR to zero and highest value to one. The results are reported in Table 6 and all three hypotheses are still supported when using the Tobit model.

We then followed Rego and Wilson (2012) to use two-stage least squares estimation to control for endogenous issues. Like Rego and Wilson (2012) pointed out it is very difficult to identify a unique exogenous variable that is not related to other characteristics variables in our setting of tax research. Nonetheless, we choose CEO's board memberships as the exogenous variable in the first stage.

In China, managerial ties (*guanxi* in Chinese) are critical to firm success and CEO's board membership proxies his/her business connections (*guanxi*). We define Board_Membership as

the number of external boards the CEO serves at for-profit organizations in year t . We excluded the not-for-profit organizations (e.g., hospital, university) because these organizations may not directly help the performance of the CEO's company. We manually collected CEO background information from the section "Profile of Directors and Senior Managers" on annual financial statements. Because the *guanxi* is an asset of the CEO (instead of the corporate), the firms need to pay for the use of this asset. We predict the business connection will increase CEO compensation and CEOs with business connection are more likely to be promoted. In addition, we do not have theoretical reasons suggesting the CEO's board memberships would influence the taxes behaviors of the firm.

We used the CEOs' board membership as the instrument variable in the first stage and used the predicted compensation as well as the probability of promotion that derived from the first stage as the test variables in the second stage regression. The results are presented in Table 7. All three hypotheses are supported when using the two-stage regression.

6. Discussion and Conclusion

This study contributes to the understanding of incentives for tax planning in Chinese SOEs. Specifically, we examined the association between tax aggressive and momentary and nonmonetary incentives for tax planning when significant tunneling exits.

We found that cash ETRs are positively associated with compensation and also positively associated with the promotion of the CEOs. This suggests that monetary rewards (i.e., compensation) and nonmonetary rewards (i.e., promotion) both motivate CEOs in SOEs to pay

more taxes to the majority shareholder (i.e., the Chinese government), and it could be an example of the majority shareholder taking unfair advantage of the minority shareholders (tunneling).

We also found that when compensation and/or promotion are similar, Chinese SOEs cross-listed in Hong Kong or other Western stock exchanges paid fewer taxes on average compared to Chinese SOEs only listed on the Shanghai or Shenzhen. This suggests stronger corporate government enforcement could mitigate the tunneling induced by compensation and promotion.

The limitations of this study are similar to those of many other studies in the literature examining Chinese CEO Compensation. Due to financial reporting regulation limitations, some Chinese firms do not fully report their CEO compensation levels. For instance, some proportion of compensation may be paid in the form of benefits to avoid the disclosure of high compensation. Another example is that some CEOs in SOEs are paid by the parent company, and they report the total compensation as zero in the firms' financial reports. For this reason, we lost 460 samples due to missing reports of compensation.

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Table 1: Sample Selection

| | |
|---|-----------|
| Initial Sample (firm-year observations) | 3,900 (a) |
| Deletions due to missing data for | |
| Non-SOEs | -1,378 |
| Cash ETR in Capital IQ | -80 |
| Control variables | -772 |
| CEO Compensation or zero total compensation | -460 |
| Observations without CEOs turnover | -648 |
| Sample size | 562 |

(a) CSI 300 firms for 13 years (2002-2014)

Table 2: Summary Statistics for Dependent and Independent Variables

| Panel A: Dependent Variables | | | | | |
|--|--------------------|----------------|--------------|----------------|-------------|
| | Percentiles | | | | |
| Variables | Mean | Std Dev | 25th | 50th | 75th |
| Cash ETR | 0.339 | 0.506 | 0.125 | 0.354 | 0.601 |
| Panel B: Continuous Variables | | | | | |
| Variable | Mean | Std Dev | 25th | 50th | 75th |
| Compensation (RMB Yuan thousand) | 764 | 827 | 262 | 600 | 1000 |
| Tenure | 3.880 | 2.629 | 2 | 3 | 5 |
| ROA (%) | 4.764 | 4.756 | 1.655 | 3.815 | 7.045 |
| LEV | 0.237 | 0.187 | 0.070 | 0.212 | 0.364 |
| MTB | 3.504 | 2.950 | 1.606 | 2.589 | 4.177 |
| FIX | 0.335 | 0.237 | 0.129 | 0.303 | 0.519 |
| INV | 0.136 | 0.139 | 0.019 | 0.109 | 0.195 |
| SIZE | 10.057 | 2.012 | 8.670 | 9.791 | 10.987 |
| Panel C: Discrete variables | | | | | |
| Variable | Value | Percent | Value | Percent | |
| Promotion | 1 | 29.46% | 0 | 70.54% | |
| Cross-listing | 1 | 23.31% | 0 | 76.69% | |
| LOSS | 1 | 4.29% | 0 | 95.71% | |
| <u>Variable definitions</u> | | | | | |
| Dependent variable: | | | | | |
| Cash ETR _{it} = Cash ETR calculated as income taxes paid divided by the pre-tax income in year t; | | | | | |
| Independent variables: | | | | | |
| Compensation = Compensation calculated as the natural log of CEO total compensation; | | | | | |
| Tenure = Number of years the CEO serves in this position; | | | | | |
| ROA _{it} = ROA calculated as the net income for firm i in year t divided by total assets for firm i in year t-1; | | | | | |
| MTB _{it} = Market-to-book ratio calculated as the market value of common equity divided by book value of common equity at end of current year; | | | | | |
| LEV _{it} = Leverage calculated as long-term debt at current year-end divided by book value of equity at current year-end; | | | | | |
| FIX _{it} = Capital Intensity calculated as total fixed assets at current year-end divided by total assets of the firm at current year-end; | | | | | |
| INV _{it} = Inventory Intensity calculated as total inventory at current year-end divided by total assets of the firm at current year-end; | | | | | |
| SIZE _{it} = Size = natural log of market value; | | | | | |
| Discrete variables: | | | | | |
| Promotion _{it} = an indicator variable that takes the value of 1 if the CEO got a promotion after she/he left the firm's position, and 0 otherwise; | | | | | |
| Cross-listing = Cross-listing is a dummy variable that takes value of 1 if the firm is cross-listed in Western stock exchanges or Hong Kong Stock Exchange, and 0 otherwise; | | | | | |
| LOSS _{it} = Loss is a dummy variable that takes value of 1 if there is a net loss carry forward and 0 otherwise. | | | | | |

Table 3: Pearson Correlation

| | Cash ETR | Compensation | Promotion | Cross-listing | SIZE | MTB | LEV | INV | FIX | Tenure | ROA |
|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|-------------------|
| Compensation | 0.245 (0.000) | 1.000 | | | | | | | | | |
| Promotion | 0.229 (0.000) | 0.077 (0.068) | 1.000 | | | | | | | | |
| Cross-listing | -0.086 (0.042) | 0.036 (0.392) | 0.058 (0.173) | 1.000 | | | | | | | |
| SIZE | 0.017 (0.682) | 0.107 (0.012) | 0.152 (0.000) | 0.627 (0.000) | 1.000 | | | | | | |
| MTB | -0.044 (0.300) | -0.027 (0.532) | -0.130 (0.002) | -0.126 (0.003) | -0.325 (0.000) | 1.000 | | | | | |
| LEV | 0.044 (0.297) | -0.197 (0.000) | 0.098 (0.020) | -0.009 (0.826) | 0.049 (0.249) | -0.087 (0.040) | 1.000 | | | | |
| INV | 0.050 (0.237) | -0.050 (0.242) | 0.079 (0.062) | -0.175 (0.000) | -0.259 (0.000) | 0.077 (0.068) | -0.017 (0.686) | 1.000 | | | |
| FIX | 0.035 (0.415) | -0.154 (0.000) | 0.116 (0.006) | -0.002 (0.964) | -0.114 (0.007) | -0.063 (0.139) | 0.496 (0.000) | -0.343 (0.000) | 1.000 | | |
| Tenure | 0.039 (0.363) | -0.031 (0.464) | -0.013 (0.758) | -0.014 (0.733) | 0.015 (0.716) | -0.036 (0.392) | 0.013 (0.761) | -0.049 (0.244) | 0.017 (0.683) | 1.000 | |
| ROA | 0.029 (0.496) | 0.062 (0.141) | 0.108 (0.011) | -0.186 (0.000) | -0.276 (0.000) | 0.253 (0.000) | -0.253 (0.000) | 0.018 (0.672) | 0.149 (0.000) | 0.000 (0.993) | 1.000 |
| LOSS | -0.031 (0.468) | -0.029 (0.489) | -0.040 (0.344) | 0.043 (0.313) | -0.074 (0.081) | 0.149 (0.000) | 0.230 (0.000) | -0.052 (0.221) | 0.077 (0.069) | -0.053 (0.207) | -0.201 (0.000) |

Note:

This table presents Pearson Correlation among variables.

The variables are defined in Table 2. P-Values are presented in parentheses.

Table 4: Test of Hypotheses 1 & 2

| | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------|---|-----------------------------------|-----------------------------------|----------------------------------|
| Ln(Compensation) (H1) | | 0.145 (7.98)*** | | 0.108 (4.86)*** |
| Promotion (H2) | | | 0.189 (6.37)*** | 0.067 (3.00)** |
| Cross-listing | -0.108 (3.99)*** | -0.006 (0.31) | -0.147 (3.81)*** | -0.060 (2.08)* |
| SIZE | 0.100 (2.13)* | -0.005 (0.14) | 0.027 (0.47) | 0.042 (1.04) |
| MTB | -0.025 (0.86) | -0.049 (2.19)* | -0.043 (1.10) | -0.040 (1.53) |
| LEV | -0.066 (2.29)* | -0.020 (0.84) | -0.026 (0.70) | -0.002 (0.06) |
| INV | 0.030 (0.91) | 0.037 (1.41) | -0.055 (1.28) | -0.038 (1.23) |
| FIX | 0.030 (0.75) | -0.023 (0.70) | 0.027 (0.50) | -0.013 (0.32) |
| Ln(Tenure) | 0.035 (1.68)⁺ | -0.001 (0.04) | 0.093 (3.07)** | 0.022 (1.00) |
| ROA | -0.301 (11.79)*** | -0.152 (6.81)*** | -0.217 (6.84)*** | -0.066 (2.49)* |
| Loss | -0.014 (0.67) | -0.019 (1.19) | -0.003 (0.12) | 0.006 (0.34) |
| Intercept | 0.852 (9.18)*** | 0.892 (6.71)*** | 0.845 (8.35)*** | 0.873 (7.27)*** |
| Years | Included | Included | Included | Included |
| Industry Fixed Effect | Included | Included | Included | Included |
| R^2 | 0.16 | 0.19 | 0.21 | 0.23 |
| N | 1,670 | 1,210 | 857 | 562 |

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Test of Hypotheses 3

| | Model 5 | Model 6 |
|-----------------------|--|--|
| | Cross-listed Firms (H3) | Non-Cross listed Firms (H3) |
| Ln(Compensation) (H1) | -0.032 (0.57) | 0.149 (5.45)*** |
| Promotion (H2) | 0.032 (0.50) | 0.107 (4.20)*** |
| SIZE | 0.073 (0.49) | 0.076 (1.72)⁺ |
| MTB | -0.097 (1.14) | -0.005 (0.18) |
| LEV | -0.064 (0.63) | 0.009 (0.28) |
| INV | 0.131 (1.27) | -0.056 (1.75)⁺ |
| FIX | -0.177 (0.26) | -0.122 (0.69) |
| Ln(Tenure) | -0.029 (1.45) | 0.014 (1.53) |
| ROA | -0.152 (1.93)⁺ | -0.088 (2.95)** |
| Loss | 0.149 (4.15)*** | -0.044 (1.94)⁺ |
| Intercept | 0.156 (0.31) | 1.009 (7.09)*** |
| Years | Included | Included |
| Industry Fixed Effect | Included | Included |
| R^2 | 0.30 | 0.30 |
| N | 131 | 431 |

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Robustness Test- Tobit Model

| | Model 7 | Model 8 | Model 9 | Model 10 Cross-listed Firms (H3) | Model 11 Non-Cross-listed Firms (H3) |
|--------------------------|------------------|------------------|---------------------------|--|--|
| Ln(Compensation) (H1) | 0.088 | | 0.060 | -0.012 | 0.089 |
| Promotion (H2) | (8.91)*** | | (4.39)*** | (0.41) | (5.36)*** |
| Cross-listing | -0.025 | -0.093 | -0.070 | -0.023 | 0.086 |
| SIZE | (2.16)* | (5.17)*** | (4.00)*** | (0.67) | (5.66)*** |
| MTB | 0.021 | 0.006 | 0.042 | 0.098 | 0.074 |
| LEV | (1.04) | (0.23) | (1.66)⁺ | (1.22) | (2.79)** |
| INV | -0.022 | -0.021 | -0.019 | -0.028 | 0.005 |
| FIX | (1.84) | (1.16) | (1.16) | (0.60) | (0.27) |
| Ln(Tenure) | -0.017 | -0.005 | 0.011 | -0.034 | 0.023 |
| ROA | (1.29) | (0.27) | (0.59) | (0.62) | (1.19) |
| Loss | 0.055 | -0.009 | 0.010 | 0.143 | -0.002 |
| Intercept | (3.88)*** | (0.42) | (0.53) | (2.57)* | (0.11) |
| Years | -0.027 | -0.006 | -0.017 | -0.060 | -0.025 |
| Industries | (1.49) | (0.22) | (0.67) | (0.68) | (0.97) |
| <i>N</i> | -0.010 | 0.036 | 0.015 | -0.009 | 0.027 |
| | (1.10) | (2.52)* | (1.08) | (0.36) | (1.81)⁺ |
| | -0.048 | -0.072 | -0.017 | -0.075 | -0.031 |
| | (3.95)*** | (4.81)*** | (1.04) | (1.77)⁺ | (1.76)⁺ |
| | -0.020 | -0.013 | -0.011 | 0.051 | -0.045 |
| | (2.21)* | (1.00) | (0.92) | (2.59)* | (3.00)** |
| | 0.921 | 0.725 | 0.824 | 0.885 | 0.875 |
| | (9.81)*** | (8.72)*** | (8.29)*** | (3.04)** | (8.87)*** |
| | Included | Included | Included | Included | Included |
| | Included | Included | Included | Included | Included |
| | 1,210 | 857 | 562 | 131 | 431 |

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: Robustness Test- Two-stage regression

| | Model 12 | Model 13 | Model 14 | Model 15 Cross-listed Firms (H3) | Model 16 Non-Cross-listed Firms (H3) |
|---------------------|--|--|--|--|--|
| Compensation (H1) | 0.146 (8.00) ^{***} | | 0.165 (7.83) ^{***} | -0.020 (0.31) | 0.183 (7.88) ^{***} |
| Prob_Promotion (H2) | | 1.120 (2.04) [*] | 1.350 (3.23) ^{**} | -0.151 (0.09) | 1.727 (3.96) ^{***} |
| Cross-listing | -0.001 (0.05) | -0.013 (0.22) | 0.124 (2.67) ^{**} | | |
| SIZE | 0.008 (0.22) | -0.045 (0.51) | -0.168 (2.44) [*] | -0.011 (0.04) | -0.208 (2.99) ^{**} |
| MTB | -0.056 (2.52) [*] | 0.058 (1.11) | 0.030 (0.78) | -0.059 (0.48) | 0.061 (1.48) |
| LEV | -0.028 (1.16) | -0.053 (1.53) | -0.003 (0.10) | 0.124 (1.06) | 0.011 (0.38) |
| INV | 0.028 (1.04) | -0.012 (0.27) | -0.034 (1.03) | 0.184 (1.33) | -0.069 (2.01) [*] |
| FIX | -0.041 (1.22) | 0.030 (0.67) | -0.045 (1.19) | -0.066 (0.39) | -0.047 (1.19) |
| Ln(Tenure) | 0.015 (0.90) | 0.046 (1.92) ⁺ | 0.022 (1.17) | -0.016 (0.26) | 0.033 (1.63) |
| ROA | -0.156 (6.98) ^{***} | -0.289 (9.41) ^{***} | -0.126 (4.67) ^{***} | -0.104 (1.02) | -0.121 (4.35) ^{***} |
| Loss | -0.015 (0.92) | -0.002 (0.09) | -0.005 (0.26) | 0.068 (1.36) | -0.028 (1.33) |
| Intercept | 0.809 (6.10) ^{***} | 0.411 (1.46) | 0.229 (0.94) | 0.159 (0.15) | 0.014 (0.05) |
| Years | Included | Included | Included | Included | Included |
| Industries | Included | Included | Included | Included | Included |
| R ² | 0.19 | 0.18 | 0.21 | 0.13 | 0.26 |
| N | 1,210 | 1,427 | 994 | 215 | 779 |

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$