Tax Management, Ownership Structure and Corporate Governance

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Abstract

We use 2010-2018 publicly listed Chinese company data to analyze how ownership structure and corporate governance affects tax management. Our results indicate that diverse ownership structure might lower a company's tax rates, whereas traditional corporate governance measures, such as board size, independent board member percentage and duality of CEO serving as chair do not affect tax.

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INTRODUCTION

Deferred tax items in China are created due to three major items: temporary differences of tax and financial reporting in depreciation; impairment losses; and previous losses that can be carried forward for five years. Temporary differences in depreciation typically defers taxes and creates deferred tax liabilities (DTLs). Impairment losses and previous losses create deferred tax assets (DTAs). DTAs are created when a firm has accounting expenses/losses that are not deductible for tax purpose in current period. These deductibles are carried over to future tax periods and the company is due some form of tax relief. DTAs are viewed as less desirable than DTLs. DTLs defer taxes and lower taxable income now. DTAs result in higher taxable income now than later. It's more desirable to delay paying taxes. In our previous research (xxx et al., 2016), we documented that publicly listed Chinese companies' median GAAP effective income tax rate is 12.95% while the median cash effective income tax rate is 26.29%. The median sales tax and addition rate is 4.06%. This is less than optimal from a cash flow management standpoint. Many factors contribute to this result. In this research, we focus on the complex industry. The complex industry has a median GAAP effective income tax rate of 1.49%, median cash effective income tax rate of 5.10%, and median sales tax and addition rate of 0.85%. The tax rates using more recent data shows an uptick of the tax rates, although they remain significantly below other industries. This begs the question - how does the complex industry successfully manage their tax rates?

The goal of this study is to analyze how corporate governance and ownership structure affect tax management. Ownership structure has been found to be an integral part of corporate governance, and Chinese firms often have high rates of government ownership in otherwise private firms. The presence of government insiders on boards of

directors and supervisors is seen by some as a mechanism to receive favorable tax status and rates. While this may seem reasonable at first glance, the literature on the effect of government insiders is mixed, with no consistent conclusion being able to be drawn. Various firm characteristics have been found to be related to ETR's, but no consistent theory as to the impact of such factors on ETR's has yet emerged.

In the next section, we present an overview of the Chinese tax system. This is followed by a review of the literature, a discussion of the methodology used, the results, and conclusions.

Chinese Tax System

China imposes three major taxes: sales tax and addition, value added tax, and income tax. The basic corporate tax rate of 25%. It is 20% for eligible small businesses and 15% for certain high-tech companies. Currently, corporate income tax revenue is shared by local and federal governments with the local government retaining 40%.

Sales tax rates vary from 3% to 20% depending on the industry. Sales tax in China is included in the sales price and is remitted to the government by the seller. Sales tax addition includes consumption tax, resource tax, education tax, land appreciation tax, and city development tax, among others. Consumption tax is also included in sales price and remitted by the seller to the taxing authority. Consumption tax is designed to regulate the consumption structure. For commodities that have consumption tax, it can vary from 1% to 56% of the value of the commodity depending on the commodity or it can be a fixed amount. Currently, sales tax and addition is a local tax revenue.

The basic value added tax rate is 13% for domestic products, 17% for imported products, and 0% for exported products. Value added tax revenue is currently shared between the local and federal government with local government retaining 25%. In contrast to sales tax and addition, value added tax is not included in the sales price. It is separately paid by the consumer and is not reported by the publicly listed companies; therefore value added tax information is generally unavailable.

LITERATURE REVIEW

There is a large and robust body of literature on the impact of various factors on effective tax rates (ETR). Some of these factors are addressed below.

Prior literature has addressed such firm-level characteristics as firm size, capital structure, and tax planning, noting that they are key predictors of ETR (Zimmerman 1983; Gupta and Newberry 1987; Richardson and Lanis 2007). Top management usually has a significant impact on tax activities (Dyreng, Hanlon, and Maydew 2010; Armstrong et al. 2015). This is common in developing countries where relationships have a significant impact on the economy.

Political Participation

Political participation and political connections have been found to have a material affect upon the effective tax rates (ETR's) of firms in China. Wu, Wu, and Rui (2009) found different tax rates being applied to firms in different geographic regions of China. They found that firms with low ETR tend to be highly leveraged. Li, Feng, and Cao (2017) investigated the role of the regional institutional environment in the relationship between political participation and effective tax rates. They found that the regional institutional environment impacts the correlation between political participation and effective tax rates, and they characterize this by marketization and corruption levels. A statistically significant positive relation was found between political participation and effective tax rates for firms in regions with low corruption levels, and a statistically significant negative correlation was found among firms located in highly corrupt regions. Adhikari, et. al. (2006) found that developing economies tend to be "relationship-based" rather than "market-based" and that firms with political connections pay tax at significantly lower effective rates than other firms. In a study of Pakistani companies, Sadiq, Mohamad, & Chong (2019) found that companies with political influence pay significantly lower effective taxes compared to companies without political influence.

Using Political cost theory and political power theory, Wu et. al. (2012) examined the relationship between firms and the government, using state ownership and tax status to capture how firm size, state ownership and tax status jointly affect effective tax rates. They found that when firms do not enjoy a preferential tax status, firm size is positively associated with effective tax rates for privately controlled firms and negatively associated for state-controlled firms.

A number of studies have found that political participation, specifically the political connections of insiders of an organization, can have a positive impact on the reduction of effective tax rates in a number of countries (Adhikari, Derashid, and Zhang 2006, Faccio 2010).

Major tax and business policy reform in China in the 1990's resulted in many Chinese companies seeking political favors and advantages, when facing increased government controls related to tax determination and resource allocation (Naughton 1994; Che and Qian 1998).

Two studies that examine the impact of state ownership on effective tax rates in China are Cao and Dou (2007), who examine the factors affecting effective tax rates and found that state-owned firms pay higher effective tax rates compared to non-state-owned firms. Wu, et al. (2008) found that the effect of firm size on effective tax rate was significantly impacted by the nature of the controlling shareholder, specifically whether or not the controlling shareholder was state-controlled.

Tao Zeng (2011) examined the effect of ownership concentration and state ownership on the tax reporting practices of Chinese publicly listed firms. He found that concentrated share ownership resulted in lower ETR's. However, firms where the largest shareholders are government related have higher ETR's. A similar result has been found in research by Groves, et. al. (1995), and Kato and Long (2006). In these studies, it was found that manager's career concerns dominated what might otherwise manifest as preferential treatment due to government ownership. Given that these managers are appointed and promoted by the government, they actively pursue social and political goals, including maximizing tax revenues to the government. Those managers that avoided tax aggressive behavior and as a result, paid more taxes were able to enhance their political careers.

Size and Industry

There is much research on the relationship between firm size and the effective tax rate of the firm. The effects of ETRs on the size distribution of Swedish firms were examined over a 30-year period by Heshmati, Johansson, and Bjuggren (2010). They included time and industry effects. They found that significant variables were firm size, industry and time. Small firms had a higher ETR than large firms, and there was inequality in ETRs noted between industrial sectors. They concluded that "ETRs affect the size distribution of firms as well as the composition

of industries and that the Swedish tax system favors capital-intensive sectors and firms."

In a unique study conducted using Romanian companies, Sebastian (2010) wanted to determine whether the actual ETR's agreed with the statutory tax rates cuts that were happening. He consistently found that the ETR was less than the statutory rate and that general commerce had the lowest ETR with the energy sector having the highest ETR.

Olhoft (1999) obtained data from Compustat for 1990 through 1997, for U.S. multinational and U.S. domestic only corporations. Her research explores which variables impact firms that try to avoid more income taxation, resulting in lower effective tax rates (they define ETR as the ratio of current income tax expense to pre-tax accounting income). She found that when holding income constant, large firms pay more tax per dollar of income than smaller firms. In addition, she notes that firms with greater income pay less tax per dollar of income than firms with less income. She found a positive relationship between higher income and income tax avoidance, larger firm size but no relationship between firm size and tax avoidance. Multinationals have a strong negative relationship between income and ETRs, which would seem to suggest that multinationals avoid more tax than U.S. domestic companies.

In a study of Australian effective tax rates following the Ralph Review of Business tax Reform, Richardson and Lanis (2007) found that corporate effective tax rates are associated with several major firm-specific characteristics, including firm size, capital structure (leverage) and asset mix (capital intensity, inventory intensity and R&D intensity).

Sinclair and Li (2017) examined Chinese firms over the period 1999-2009 and found significant differences, both statistical and economic, between the ETR's paid by various types of Chinese firms. Their research included state owned enterprises (SOE's), as well as State Asset Management Bureaus (akin to investment trusts). They found that local government SOEs pay higher rates of corporate income tax than do those SOEs owned by the central government. They also examined Zimmerman's (1983) political cost hypothesis, that of larger firms being subject to greater scrutiny from the taxation authorities which would then lead to higher ETR's. However, they found no evidence of the political cost hypothesis.

In a review of 3,169 Spanish companies during the period of 2008–2014, Fernández-Rodríguez et. al. (2019) show that there are significant

differences between the tax burdens of non-state-owned enterprises (NSOEs) and state-owned enterprises (SOEs). Specifically, they found that the effective tax rates of privately owned companies were higher than those of state-owned firms. Such features as size, leverage, research and development investment, profitability, firm age, foreign operations, and auditing generally determine the tax burden of privately held firms, while that of state-owned companies is affected only by leverage and capital intensity.

Other studies that have considered size or industry or both includes Stickney and McGee (1982); Noor, Mastuki, and Bardai (2008); Wu, Wang, Luo and Gillis (2012).

Ownership Structure

Ownership structure has been found to be a key component of corporate governance (Shleifer and Vishny, 1997; Gul et. al. 2010), but relatively few studies have explored the impact of ownership structure on tax reporting.

Scholes, Wolfson, Erickson, Maydew, and Shevlin (2005) found that closely held firms have reduced reporting costs and are likely to choose tax-saving opportunities even when those opportunities reduce accounting income. However, they didn't examine the impact of large outside shareholders.

Huang, et. al. (2013) analyzed firms trading in the Shanghai and Shenzhen stock markets from 1999 to 2008, and found four key factors affecting ETR's: 1) firm-specific attributes, 2) ownership structure, 3) industry upgrading (the use of tax incentives to cultivate certain industries), and 4) tax reform and the shifting of tax incentives.

METHODOLOGY

As mentioned earlier, our inspiration for this study is the complex industry's significantly lower tax rates. To understand the complex industry, we first illustrate examples of ten complex industry companies. We summarize the general financial characteristics of the complex industry in comparison to other industries. This is followed by a summary of ownership structure and corporate governance comparison between the complex and other industries. We use logistic regression for our final analysis. To perform logistic regression, we first use stepwise

discriminant analysis to select the set of predictors. Logistic regression is chosen because of the binary nature of our dependent variable.

Our data is from the China Stock Market & Accounting Research Database (CSMAR). The data range is from 2010-2018. 538 out of 16,475 company years are classified as complex industry.

Definition of Tax Rates

We use two standard measures to define effective tax rate, which have been adopted by many other studies (Dyreng, Hanlon, & Maydew 2010; Dyreng, Hanlon, & Maydew 2008). First, the effective corporate income tax rate is as defined under GAAP, total income tax expense divided by earnings before tax. Second, the effective corporate income tax rate is defined on a cash basis as cash income taxes paid divided by earnings before tax. The first measure will capture tax expense for financial reporting purposes (hereafter GAAP EITR). The second measure will capture cash basis tax expense (hereafter cash EITR). There are very few studies about sales tax and addition. We define effective sales tax and addition rate as sales tax and addition expense divided by earnings before tax(hereafter ESTAR). We are unable to identify how much cash is paid for sales tax and addition, we thus make the assumption that cash paid for sales tax and addition equals sales tax and addition expense. ESTAR serves as both cash and GAAP ESTAR. We define a company's overall GAAP ETR as sales tax and addition and income tax expense divided by earnings before tax. We define a company's overall cash ETR as total cash paid for taxes divided by earnings before tax.

Ownership Structure

Ownership structure can be an integral part of corporate governance (Gillan & Starks, 2003; Li, 2010; Sueyoshi, Goto & Omi, 2010). We analyze top ten shareholders, private individual investor ownership of the top ten investors, state, executive, board of director and board of supervisor ownership. Chinese publicly listed companies are required to have both a board of directors and a board of supervisors. Examples of board of supervisor's duties are to check the financial affairs of the company, supervise directors and managers and initiate actions against directors and managers. Mean and median analyses are used for ownership structure analysis.

Traditional Corporate Governance Measures

Board size, a large proportion of outsiders on the board of directors, and management entrenchment are among the most researched corporate governance measures (xxx, 2012; Beasley, 1996; Lanis & Richardson, 2011; Musteen, Datta, & Kemmerer 2010). Mean and median analyses are used for corporate governance analysis.

Compensation Analysis

We analyze top three executives and top three BOD members cash compensation.

RESULTS

We randomly selected ten companies from complex industry to illustrate the business a complex industry company is typically involved in. The information is extracted from www.reuters.com. The business scope is broad and includes mining, agriculture, construction, real estate, and technology.

Company Name	Company description
Zoneco Group Co Ltd.	Zoneco Group Co Ltd. breeds, raises, processes and distributes aquatic products. The Company operates its business through aquatic cultivation, aquatic processing, aquatic products trading, as well as transportation services. It also involves in catering business.
Henan Huaying Agricultural Development Co., Ltd.	Henan Huaying Agricultural Development Co., Ltd. hatches, breeds, slaughters and processes poultry. It also manufactures meat products and feeds.
Tianshui Zhongxing Bio-technology Co., Ltd.	Tianshui Zhongxing Bio-technology Co., Ltd. conducts research, development, production and sale of edible mushroom.
Shandong Zhonglu Oceanic Fisheries Company Ltd.	Shandong Zhonglu Oceanic Fisheries Company Ltd. engages in ocean fishing. The Company's main operations consists of deep-sea fishing, long-line fishing, and trawl fishing. The company manages and leases fishing vessels and refrigerated transportation vessels. The company processes and

	refrigerates aquatic products, imports and exports aquatic products.
Winall Hi-tech Seed Co., Ltd.	Winall Hi-tech Seed Co., Ltd. conducts research, development, breeding, promotion, and services of crop seeds, mainly including rice seeds, corn seeds and wheat seeds.
Beijing Jiayu Door, Window and Curtain Wall Joint-stock Co., Ltd.	Beijing Jiayu Door, Window and Curtain Wall Joint-stock Co., Ltd. principally involves in the research, development, design, manufacture, processing, installation and services of energy-saving doors, windows and curtain walls.
Shanghai Xuerong Biotechnology Co.,Ltd.	Shanghai Xuerong Biotechnology Co.,Ltd. produces factory cultivated agricultural products. The Company mainly conducts research, development, factory cultivation, and sale of fresh edible mushrooms.
Jangho Group Co., Ltd.	Jangho Group Co., Ltd. conducts architectural decoration businesses. The Company's constructs curtain walls and does interior decoration.
Jiangsu Yueda Investment Co., Ltd.	Jiangsu Yueda Investment Co., Ltd. engages in manufacturing transportation. It also conducts commodities distribution and coal mining. The Company's major products are automobiles, tractors, yarns, home textiles and coal.
Shandong Xinchao Energy Corporation Ltd.	Shandong Xinchao Energy Corporation Ltd. engages in property development and sales. The Company also produces and sells electronic components, explores and produces petroleum.

As illustrated in Table 1, the complex industry's tax rates are significantly lower compared with other industries. Its overall median cash tax rate is only 16.89% compared with 38.91% for other industries. This is 22.02% lower. Complex industry's overall median GAAP ETR is 13.36% compared with other industries' 20.72%. It is 7.36% lower. The mean and median are all significantly different for the two groups at $p<0.05$. The complex industry is very successful in managing taxes, especially current due taxes. The following sections analyze how the industry as a whole differs from other industries.

Table 1: Summary statistics for tax rates

Industry		GAAP EITR	Cash EITR	ESTAR	Overall GAAP ETR	Overall Cash ETR
Complex	Mean	10.34%	14.10%	9.52%	19.86%	23.62%
	Median	8.56%	9.67%	3.27%	13.36%	16.89%
Other industries	Mean	14.82%	28.16%	7.97%	22.79%	36.13%
	Median	14.93%	31.16%	5.26%	20.72%	38.91%

We also summarize the basic financial indicators for the complex industry compared with other industries in Table 2. Complex industry has significantly smaller sales revenue, income before tax, and net income. Complex industry also has significantly higher leverage. We can in general conclude that complex industry is smaller in scale. This might have contributed to its lower tax rates. Despite the smaller scale, complex industry has significantly larger median impairment loss of 12.5 million compared with other industries' 8.5 million. In addition, about 20% of complex industry companies have losses in the previous year while about 16% of companies in other industries have losses in the previous year.

Table 2: Summary statistics of basic financial information

	Complex Industry	Other Industries	Pr > |t|*	Complex Industry	Other Industries	Two-Sided Pr > |Z|**
	Mean	Mean		Median	Median	
Sales	2,781,711,530	6,635,265,576	<0.0001	1,301,294,247	1,425,715,597	<0.0001
Income before Income Tax	238,183,221	623,830,605	<0.0001	94,310,755	153,434,597	<0.0001
Net Income	209,474,565	497,352,522	<0.0001	78,667,167	129,909,118	<0.0001
Total asset	4,862,584,799	11,102,394,134	<0.0001	2,778,447,081	2,822,783,502	0.0517
Leverage	58.86%	44.90%	0.2159	44.05%	38.44%	<0.0001
Impairment Loss	49,510,304	59,386,500	0.0429	12,502,609	8,516,358	0.0001

*P values take equality of variances into consideration and adopt methods accordingly.

**Wilcoxon Two-Sample Test

As Table 3 illustrates, the complex industry has a significantly more diverse ownership structure compared with other industries. Its top ten shareholders own significantly fewer shares compared with other industries. Its board members and executives own significantly fewer company shares. For the top ten shareholders, if they are private individuals instead of institutions, their mean shareholding is also significantly lower compared with other industries, even though the median holding is not significantly different.

Table 3: Comparison of ownership structure

		Mean			
		Complex Industry	Other Industries	Pr > |t|*	Two-Sided Pr > |Z|**
TopshareholderOwnership%	Mean	33.29%	35.41%	0.0016	
	Median	31.00%	33.62%		0.0016
Top2-10ShareholderOwnership%	Mean	22.09%	24.95%	<0.0001	
	Median	21.18%	23.98%		<0.0001
BODOwnership%	Mean	10.65%	15.07%	<0.0001	
	Median	0.07%	0.54%		<0.0001
BOSOwnership%	Mean	0.16%	0.43%	<0.0001	
	Median	0.00%	0.00%		<0.0001
ExecutivesOwnership%	Mean	5.78%	8.64%	<0.0001	
	Median	0.00%	0.16%		<0.0001
PrivateIndividualOwnership%***	Mean	14.33%	18.88%	<0.0001	
	Median	4.57%	4.62%		0.9497
StateOwnership%	Mean	4.07%	4.64%	0.3160	
	Median	0.00%	0.00%		0.9991

*P values take equality of variances into consideration and adopt methods accordingly.

**Wilcoxon Two-Sample Test

*** PrivateIndividualOwnership% is the top ten shareholder ownership percentage excluding institutional owners.

As shown in Table 4, the complex industry's overall corporate governance is not significantly different from other industries. The percentage of CEO serving also as BOD chair is about 26%. This is not significantly different from other industries. Its board size is about the same as other industries. Although its scaled board size mean is significantly higher than other industries, its median is not significantly different from other industries. Its independent BOD member percentage is about the same as other industries.

Table 4: Corporate governance mechanism comparison

		Complex Industry	Other Industries	Pr > |t|*	Two-Sided Pr > |Z|**
Duality of BODChair&CEO	Mean	26.21%	26.62%	0.8327	
	Median	NA	NA		0.8327
BOD Size	Mean	8.6070	8.6083	0.9867	
	Median	9	9		0.7347
BOS Size	Mean	3.5486	3.5234	0.5715	
	Median	3	3		0.1547
BOD Size scaled by ln(Sales)	Mean	0.4180	0.4077	0.0167	
	Median	0.4165	0.4145		0.1971
BOS Size scaled by ln(Sales)	Mean	0.1727	0.1665	0.0076	
	Median	0.1474	0.1473		0.1886
IndependentBODMembers%	Mean	37.69%	37.28%	0.1130	
	Median	36.36%	33.33%		0.1481

*P values take equality of variances into consideration and adopt methods accordingly.

**Wilcoxon Two-Sample Test

As Table 5 illustrates, the complex industry top three executives and BOD members' cash compensation is significantly lower compared with other industries. The median salary for a complex industry's company top three executives is RMB1,185,150, equivalent to roughly $171,512, or $57,171 per person, while it is about $70,453 per person for other industries. The median top three BOD members cash compensation is about $49,052 per person for the complex industry, while it is about $62,407 per person for other industries. We do not have information on incentive compensation. However, as we illustrated in Table 3, the complex industry executives and board members share ownership percentage is significantly lower compared with other industries. If

incentive compensations are largely paid in company shares and executives' and board members' shares are mostly acquired through incentive compensation, then complex industry incentive compensation is also significantly lower than other industries. This leads us to believe that the complex industry pays its executives and board members significantly less, taking both cash and incentive compensation into consideration. However, the cash compensation growth rate for the complex industry is not significantly different from other industries.

Table 5: Cash Compensation comparison

		Mean			
		Complex Industry	Other Industries	Pr > |t|*	Two-Sided Pr > |Z|**
TopThreeExecutives	Mean	1,508,942	1,959,610	<0.0001	
	Median	1,185,150	1,460,500		<0.0001
TopThreeBODMembers	Mean	1,350,525	1,777,950	<0.0001	
	Median	1,016,850	1,293,700		<0.0001
TopThreeExecutives CompensationGrowthRate	Mean	0.1820	0.2221	0.1647	
	Median	0.0476	0.0680		0.2628
TopThreeBODMembers CompensationGrowthRate	Mean	0.1854	0.2435	0.0538	
	Median	0.0395	0.0605		0.7071

*P values take equality of variances into consideration and adopt methods accordingly.

**Wilcoxon Two-Sample TestAfter stepwise discriminant analysis, ten variables are retained for logistic analysis of the complex industry. They are shown in Table 6. Most of the variables retained are basic financial indicators. For every two folds increase of impairment loss, the odds of it being in complex industry increases by 14.5%. For every two folds increase of net income, the likelihood of it being in complex industry is decreased by 12.7%. For every two folds increase of sales, it decreases the likelihood of it being in complex industry by 15.6%. For every two folds increase of total asset, the likelihood of it being in complex industry is increased by 17.6%. As for ownership structure, we only retained one variable, which is the ownership percentage of private individual investors. As the ownership percentage of private individual investors increase, the odds of it being in complex industry decreases. For every percentage increase of private individual ownership, there is a 1% decrease of the likelihood that it is in complex industry. We do not retain

any corporate governance indicators. For compensation variables, with every two folds increase of executive cash salary, the likelihood of it being in complex industry is decreased by 20.1%. Finally, all three tax rate indicators are included in our final analysis. For every percentage increase of CashEITR, the odds of it being in complex industry decreases by 0.9%. For every percentage increase of GaapEITR, the odds of it being in complex industry decreases by 2.3%. For every percentage increase of ESTAR, the odds of it being in complex industry increases by 1.6%.

Table 6: Logistic Regression Analysis of Complex Industry

Analysis of Maximum Likelihood Estimates					
Predictor	β	SE β	Wald's χ^2	*p*	Odds Ratio
Constant	2.2897	1.2838	3.1811	0.0745	N.A.
ImpairmentLoss	0.1354	0.0282	22.9641	<0.0001	1.145
PreviousYearLoss	0.0367	0.1465	0.0628	0.8022	1.037
NetIncome	-0.1353	0.0515	6.9069	0.0086	0.873
Size	-0.1697	0.0509	11.1110	0.0009	0.844
TotalAsset	0.1620	0.0713	5.1568	0.0232	1.176
PrivateInvestorShare%	-0.0100	0.0026	14.6365	0.0001	0.990
ExecutiveCashCompensation	-0.2239	0.0606	13.6365	0.0002	0.799
CashEITR	-0.0090	0.0015	35.7956	<0.0001	0.991
GaapEITR	-0.0231	0.0046	25.5981	<.0001	0.977
ESTAR	0.0160	0.0040	15.8286	<.0001	1.016
Overall model evaluation					
R-square	0.0167		Max-rescaled R-square		0.0699
			χ^2	*p*	
Likelihood ratio test			211.2783	<0.0001	
Score test			263.2062	<0.0001	

Analysis of Maximum Likelihood Estimates					
Predictor	β	SE β	Wald's χ^2	*p*	Odds Ratio
Wald test			234.3104	<0.0001	

Definition of variables:
ImpairmentLoss is log2 of impairment loss.
PrivateInvestorTopTen is 1 if one or more investors of the top ten shareholders is/are private individuals.
PrivateInvestorShare% is the percentage of shares owned by private individual investors.
NetIncome is log2 of net income.
Size is log2 of sales.
TotalAsset is log2 of total asset.
ExecutiveCashCompensation is log2 of cash compensation of top three executives.

Conclusion

Complex industry has a significantly more diverse ownership structure. Its executives and board members have significantly lower compensation. However, the traditional corporate governance measures, such as board size, independent board member percentage and duality of CEO serving as chair are not significantly different. This leads us to believe diverse ownership structure could possibly be incorporated into company's tax management strategy where traditional corporate governance mechanisms are not effective.

Although predicting which industry a company belongs to is complicated, our stepwise discriminant analysis shows that basic financial indicators, such as sales, net income, impairment loss, and total assets are significant predictors. Private ownership percentage and executive cash compensation are also significant predictors. Lower private ownership percentage and executive compensation indicate a higher chance that the company is in complex industry. This is consistent with the conclusion from mean and median comparison that complex industry has more diverse ownership structure and lower executive compensation.

Tax management is an important aspect of company finance. Our analysis provides valuable insights to corporate tax management. Our results are limited as complex industry can be very different from each

other. Further research into the business activities of complex industry is warranted.

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