China Journal of Accounting Studies

ISSN: 2169-7213 (Print) 2169-7221 (Online) Journal homepage: https://www.tandfonline.com/loi/rcja20

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To cite this article: Li Qingyuan & Wang Lumeng (2018) Financial statement comparability and corporate tax avoidance, China Journal of Accounting Studies, 6:4, 448-473, DOI: 10.1080/21697213.2019.1612187

To link to this article: https://doi.org/10.1080/21697213.2019.1612187

CHINA JOURNAL OF ACCOUNTING STUDIES
2018, VOL. 6, NO. 4, 448–473
https://doi.org/10.1080/21697213.2019.1612187

Routledge
Taylor & Francis Group

ARTICLE

Financial statement comparability and corporate tax avoidance

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ABSTRACT

Based on the analysis of the agency problem in tax avoidance, this paper uses the data of non-financial listed companies from 2005 to 2015 to study the impact of the comparability of accounting information on corporate tax avoidance. The results show that the higher the comparability of accounting information, the lower the degree of corporate tax avoidance. The deterrence effect of comparability on tax avoidance is more significant for a company with a more opaque information environment and with fiercer product market competition. Additional tests show that the deterrence effect of comparability on tax avoidance is more pronounced in regions with low tax enforcement, which shows that financial statement comparability can substitute tax enforcement. This article proves the governance effect of financial accounting comparability on corporate tax avoidance. It expands and deepens the research of the governance effect of accounting information comparability from the perspective of tax avoidance.

KEYWORDS

Accounting information quality; comparability; tax avoidance

1. Introduction

Financial Statement Comparability refers to the degree of consistency between financial statements of different companies, which is an important measure of accounting information quality (De Franco, Kothari, & Verdi, 2011). Comparability enables financial statement users to identify and understand similarities and differences between different companies so as to improve the quality of accounting information and improve the information environment, and also to guide the implementation of optimal allocation of resources (Financial Accounting Standards Board (FASB), 2010). In recent years, the international convergence of accounting standards worldwide has been sought to improve the comparability of accounting information, and to help reduce the risk of information, reduce the cost of information processing and help information users to make optimal investment decisions. The international accounting standards board (IASB) vigorously promotes IFRS worldwide to strengthen and improve the comparability of accounting information among countries, following the wave of globalisation.

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Paper accepted by Kangtao Ye.

Most of the existing research into the quality of accounting information is based on the measurement of the relevance, reliability, transparency and other aspects of accounting information quality, such as the quality of accrual (Dechow, Sloan, & Sweeney, 1995; Xia, 2003; Yang, Wei, & Sun, 2012), earnings smoothness (Tucker & Zorawin, 2006), robustness, and so on. However, research on financial statement comparability has been lagging behind because the measurement of financial statement comparability is difficult. Some of the literature tries to solve the problem of the measurement of comparability by studying the coordination degree of accounting standards, the difference in accounting methods between companies and the difference in earnings quality between countries (Land & Lang, 2002; Rahman, Perera, & Ganeshanandam, 1996; Van & Leo, 1988; Weetman, Jones, Adams, & Gray, 1998; Yang & Qu, 2008). All of this research measures the comparability of accounting policy from the perspective of a macro accounting system and accounting standards coordination degree instead of measuring the actual financial information comparability between companies from the perspective of a micro company. Thus, it fails to provide evidence on the decision usefulness of the economic consequences of financial statement comparability. Following De Franco et al. (2011) and Francis, Pinnuck, and Watanabe (2014) innovatively constructing the measurement of financial statement comparability, the research on the comparability has begun to attract extensive attention in the academic world. However, no research has yet explored the impact of the accounting information comparability on corporate tax avoidance. Maydew (2001) called on scholars to conduct in-depth research on the role of accounting information quality in corporate tax avoidance. In particular, after Crocker and Slemrod (2005) and Desai and Dharmapala (2006) embed agency theory into tax research, the impact of accounting information quality on tax avoidance is even more worthy of discussion.

More comparable accounting information between companies has a certain spillover effect (Fang, Iselin, & Zhang, 2018), that is, information between companies in the same industry can supplement each other, thus bringing incremental information to investors and enabling financial statement users to better understand the similarities and differences between companies (FASB, 2010). In a similar economic environment, the economic business between companies with higher comparability in the same industry can be "verified" by each other, making it difficult for companies to construct tax avoidance transactions. At the same time, more comparable accounting information can improve the internal and external supervision efficiency of the company by reducing the cost of information collection so that increasing the marginal cost for the management to implement complex tax avoidance activities to capture private benefit. In this way, it reduces the management's willingness to avoid tax, and reduces the company's tax avoidance while restraining the agency cost of tax avoidance. The main contributions of this article embodied in: (1) we enrich the study of the economic consequences of financial statement comparability, which extends to the tax avoidance area for the first time. We reveal that accounting information comparability can reduce the level of corporate tax avoidance and we provide further evidence on the decision usefulness of the financial statement from the perspective of tax avoidance. Since Schipper (2003) has called on the study of accounting information, many literatures have been studied the factors that affect accounting information comparability, such as the

implementation of IFRS (Yip & Young, 2012; Barth, Landsman, Lang, & Williams, 2012; Neel, 2017), the executive connection (Zhou, Wang, & Chen, 2017), the auditor (Xie & Liu, 2016; Young, Lu & Wang, 2017) and supply chain (Fang, Zhang, & Wang, 2017). Other literature studies the economic consequences of financial statement comparability from the perspective of the analyst (De Franco et al., 2011), earnings quality (Xu & Liu, 2014), crash risk (Jiang, 2015; Kim, Li, Lu, & Yu, 2016), the auditor (Chen & Jiang, 2017; Francis et al., 2014), corporate mergers (Chen, Collins, Kravet, & Mergenthaler, 2018; Liu, Liu., & Xu, 2015), and so on. However, none have studied the consequence of comparability on corporate tax avoidance. We reveal the relationship between financial statement comparability and corporate tax avoidance. Our conclusion shows the governance role of the spillover effect of financial information between companies. More importantly, we clarify the mechanism through which comparability deters tax avoidance and we exclude the alternative explanation that financial statement comparability deters tax avoidance by facilitating tax enforcement. In this way, we prove the governance effect of financial statement comparability directly and provide further evidence on the decision usefulness of financial statements from the perspective of tax avoidance. (2) We provide incremental evidence on the factors that affect corporate tax avoidance. Since the agency theory has been proposed in the study of tax avoidance, the existing literature has studied the factors that affect corporate tax avoidance from the perspective of agency cost (Badertscher, Katz, & Rego, 2013), managers and compensation (Chyz, 2013; Dyreng, Hanlon, & Maydrew, 2010), tax enforcement (Atwood, Drake, Myers & Myers, 2012; Fan & Tian, 2013; Ye & Liu, 2011), property right (Bradshaw, Liao, & Ma, 2018), political motivation (Li & Xu, 2013), and institutional investors (Cheng, Huang, Li, & Stanfield, 2013; Cai & Rao, 2015). As accounting information is the basis of tax collection, it is of practical significance to discuss the effect of accounting information on the cost-benefit trade-off of tax avoidance. However, none of the literature has studied the effect of financial accounting quality, especially comparability, on corporate tax avoidance. We provide incremental evidence of the factors affecting tax avoidance and enhance the understanding of the role of the financial statement in corporate tax avoidance. In this way, we respond to Hanlon and Heiztman's (2010) call for research on accounting information quality, corporate environment and tax avoidance. In terms of strengthening the supervision of information disclosure of listed companies, we show that improving the accounting information quality has a governance effect on corporate tax avoidance so as to provide a fair tax environment for the capital market.

2. Theoretical analysis and hypothesis

Desai and Dharmapala (2006) developed a theoretical framework that embeds the sheltering decision within a managerial agency context. They believe that complex tax avoidance transactions provided tools, coverage and excuses for earnings manipulation, related party transactions and other opportunistic behaviours of the management, and they generate agency costs. Under this framework, corporate tax avoidance and managerial diversion are complementary. Corporate insiders construct complex organisational structures and transactions to implement tax avoidance, and transfer corporate

resources for their own benefit under the cover of complex transaction structures (Desai, Dyck, & Zingales, 2007). The information asymmetry caused by the sophisticated transactions helps the manager to hide the private gain, which in turn creates greater opportunities for managerial diversion of rents and induces managers to engage in more tax sheltering activity. This is called the feedback effect of tax shelters (Desai & Dharmapala, 2006). Atwood and Lewellen (2018) find that manager diversion and tax avoidance are complementary for tax haven firms based in countries with weak investor protections. Desai et al. (2007) find that effective corporate governance can suppress managerial diversion and tax avoidance. For example, increases in incentive compensation tend to reduce the level of tax sheltering in a manner consistent with a complementary relationship between diversion and sheltering (Desai & Dharmapala, 2006). In terms of external governance, tax enforcement holds considerable sway. Strengthening tax enforcement can suppress managerial diversion (Desai et al., 2007). Cheng and Lin (2017) found a positive correlation between the degree of information asymmetry and corporate tax avoidance after studying the relationship between the number of analysts and the level of corporate tax avoidance. It is easy to recognise tax avoidance transactions in a greater information transparency environment, which deters the level of corporate tax avoidance. Cai and Rao (2015) look at the governance role of an institutional investor on tax avoidance. By virtue of their information processing capacity, resources and professional advantages, institutional investors can discover the management's self-interested behaviours hidden in related party transactions and pricing transfer activities to improve information transparency, improve the supervision efficiency of shareholders and external investors, and thus inhibit the occurrence of management's self-interested tax avoidance (Chen & Tang, 2013). The above studies show that restraining agency costs will simultaneously reduce the degree of corporate tax avoidance.

Bushman and Smith (2001) point out that high quality financial accounting information has the function of identification and governance. The identification role of financial accounting information helps investors and managers identify and distinguish between good and bad investment opportunities and guides the capital allocation to high value projects. The governance role helps to reduce information asymmetry and provide effective supervision over managers' opportunistic behaviours. High quality accounting information can reduce information asymmetry, alleviate agency problem and facilitate corporate governance (Armstrong et al., 2010). As an important indicator of high financial accounting quality, comparability enables users to identify similarities and differences between two sets of economic phenomena (Financial Accounting Standards Board (FASB), 2010). Meaningful economic comparison can only be made unless there is a 'comparable' benchmark and more comparable firms constitute better benchmarks for each other. This enhances the information transfer between companies and enables investors to infer the similarities and differences between them. It can also reduce analyst forecast errors and improve the forecast accuracy (De Franco et al., 2011). Fang, Iselin and Zhang (2018) find that there exists a certain information spillover effect between more comparable companies; that is, the information between companies in the same industry can complement each other. It increases the information content

regarding the company's earnings and brings incremental information to the market. The researches of Durnev and Mangen (2009), Gleason, Jenkins, and Johnson (2008) and Ramnath (2002) find that the accounting information of a company will affect the accounting information and business decisions of peers, and the quality of accounting information is higher for a more comparable company. Kim et al. (2016) find that more comparable financial statements enable investors to understand and evaluate a company's performance easily, reduce the incentive for management to hide negative news, and thus reduce crash risk. Xu and Liu (2014) study the relationship between financial statement comparability and earnings management in China. They find that, with the improvement of the comparability of accounting information, the accounting information environment becomes more transparent to external investors, and the cost of accrual earnings management increases, which inhibits the management's accrual earnings management. Thus, financial statement comparability can also play a governance role. In terms of corporate tax avoidance, tax shelters often involve the restructuring of business operations and trading processes, thus resulting in irregular transactions. More comparable financial accounting information provides a benchmark for investors to evaluate and understand the company. It provides economic similarity and difference of various companies, enhances the ability of the outsider to identify irregular transactions, makes it difficult to hide tax avoidance activities and restraining the willingness of the tax avoidance. Moreover, when the firm's earning information can deliver more information about its peers, it can reduce information gathering and processing costs (Brochet, Jagolinzer, & Rigel, 2013; De Franco et al., 2011). It can therefore reduce supervision cost, improve the supervision effect, increase the marginal cost of the managerial diversion and lower the agency cost of tax avoidance. In this way, it can cut the tax avoidance feedback and lower corporate tax avoidance. Given the above analysis, we propose and test the following hypothesis:

H1: Companies with greater (less) accounting comparability with industry peer firms exhibit less (more) corporate tax avoidance.

Considering the heterogeneity of the company's information environment, we test whether the association between financial accounting comparability and corporate tax avoidance varies with the information environment. The information spillover brought by a comparable company has a greater impact on the company's information environment and may have a stronger deterrence effect on tax avoidance when the company operates in a more opaque environment. When the information opacity of the company is low, the deterrence effect is weak. When the information environment of the company is opaque, managers' incentive to avoid tax is relatively low; Moreover, the public information is superior per se because of its superior channel and quality. So the incremental information from comparable firms is limited and the marginal contribution of comparability on tax avoidance will be constrained by the transparent information environment of the company itself. When information opacity of the company is high, information asymmetry is high, motivation of corporate tax avoidance is high and the channel and quality of public information of the company is limited. Then the

incremental information brought by comparable accounting information can reduce the information asymmetry to a large extent and deter tax avoidance more. This reasoning leads us to predict that the effect of accounting comparability on corporate tax avoidance is greater for firms with poor information environments.

H2: The effect of financial statement comparability on aggressive tax avoidance is more pronounced for companies with poor information environments.

To further support our first hypothesis (H1), we examine whether the effect of comparability on tax avoidance varies across tax avoidance motivation. Tax avoidance motivation is affected by the product market competition. Aggressive competition brings about earnings pressure for the company and aggressive earning management can be caused by earnings pressure. Aggressive earning management is positively associated with aggressive tax avoidance behaviour (Frank, Lybch, & Rego, 2009). In addition, more aggressive competition pushes the company to save more cash through tax avoidance in order to reinvest and cope with the competition. Therefore, companies facing aggressive competition are engaged in higher levels of tax avoidance (Cai & Liu, 2009). Based on the above analysis, companies facing fierce competition are highly motivated to avoid tax. This leads to our prediction that the effect of comparability on tax avoidance is more pronounced when the company has a strong tax avoidance motivation.

H3: The effect of financial statement comparability on aggressive tax avoidance is more pronounced for companies facing fierce product market competition.

3. Empirical design

3.1. Measures and variable definition

According to De Franco et al. (2011), an accounting system is a mapping from economic events to financial statements, and two companies have comparable accounting systems if their mappings are similar. We follow De Franco et al. (2011) and define financial statement comparability as follows: if two companies have a similar accounting system, they will produce comparable financial statements. We construct the measure of financial statement comparability as follows:

$$Financial\ Statements_i = f_i(Economic\ Events_i) \tag{1}$$

where f_i represents the mapping of economic phenomena for company i, that is the accounting system of company i. Equation (1) represents that two companies have comparable accounting systems if, for a given set of economic events, they produce similar financial statements. Following De Franco et al. (2011), we use stock return as a proxy for the net effect of economic events on the firm's financial statements, we use earnings to proxy the mapping result of the accounting system; that is, the financial statement. We use 16 previous quarters of data and estimate the following equation to

get the mapping function of each company. The dependent variable is the ratio of quarterly net income to the beginning-of-period market value of equity, the independent variable is stock price return during the quarter.

$$Earnings_{it} = \alpha_i + \beta_i Return_{it} + \varepsilon_{it} \tag{2}$$

To get the 'closeness' of the functions between two companies, we use company *i* and company *j*'s estimated accounting functions to predict their earnings, assuming they had the same return.

$$E(Earnings)_{iit} = \alpha_i + \beta_i Return_{it} \tag{3}$$

$$E(Earnings)_{ijt} = \alpha_j + \beta_j Return_{it} \tag{4}$$

$E(Earnings)_{iit}$ is the expected earnings of company *i* through its mapping function of $Return_{it}$, $E(Earnings)_{ijt}$ is the expected earnings of company *j* through its mapping function of the same economic events ($Return_{it.}$). We use the following equation to get the difference of the expected earnings of companies *i* and *j*, that is the comparability between them. We use the negative value of the measure so that greater values indicate greater accounting comparability.

$$FSC_{ijt} = -1/16 \times \sum_{t-15}^{t} |E(Earnings)_{iit} - E(Earnings)_{ijt}| \tag{5}$$

This measure is the company *i-j* combination. To get the comparability of firm-year observation, we follow De Franco et al. (2011) and estimate accounting comparability for each company by getting the mean and median value of firm *i* – firm *j* combination for a company within the same industry. In the robustness test, we rank all the company *i-j* combinations for each company from the highest to lowest and get the average FSC_{ijt} of the four highest *i-j* combination of a company during period *t*. In addition, we follow Francis et al. (2014) and use the differences of the total accrual and discretionary accrual as the measure of comparability to re-validate the relationship between comparability and tax avoidance.

Since the accounting principal and the tax law take a different view of the earnings of the company, the company can save tax by managing the deduction and allowance of the tax law so that the earnings under accounting and the earnings under tax law are different. We follow Desai and Dharmapala (2006) and Liu and Ye (2013) and use the book-tax difference (BTD) to proxy for the tax avoidance of a company. The larger the book-tax difference, the higher the level of corporate tax avoidance. In the robustness test, we follow Wu (2009) and re-estimate the book-tax difference. In addition, we use effective tax rate as the measure of tax avoidance in the robustness test. We follow Li, Tang, and Lian (2016) and Hoi, Wu, and Zhang (2013) and control for ROA, firm size (*Size*), financial leverage (Lev), market-to-book value (MB), ratio of inventory (*Inv*), ratio of PPE (*PPE*), accrual quality (*AQ*) and the concentration of big 10 stockholder (*Stockhd*). We control the industry and year fixed effect of the regression.

3.2. Empirical model

To test the above hypothesis, we use the following model by the least square method (OLS):

Table 1. Variable definition.

Variable	Symbol	Definition
Independent variable		
Difference of the accounting income and taxable income	*BTD*	[Pretax Income – (Tax Expense – Deferred tax expense)/Statutory Tax Rate]/Total Asset
Dependent Variable		
Financial Statement Comparability	*FSC_mn*	Mean of the comparability of the company and its industry peers in De Franco et al. (2011)
	FSC_me	Median of the comparability of the company and its industry peers in De Franco et al. (2011)
Control Variable		
Return on Asset	*ROA*	Net profit/Total Asset
Firm Size	*Size*	Natural logarithm of year-ending total assets
Financial Leverage	*Lev*	Total liabilities divided by total assets at year ending
Market-to-book	*MB*	From CSMAR
Ratio of Inventory	*Inv*	Total liabilities divided by total assets at year ending
Ratio of PPE	*PPE*	Total PPE divided by total assets at year ending
Ratio of Intangible Asset	*Intan*	Total intangible asset divided by total assets at year ending
Total Accrual	*AQ*	$\Delta WC_{it} = \alpha_0 + \alpha_1 CFO_{i,t-1} + \alpha_2 CFO_{it} + \alpha_3 CFO_{i,t+1} + \varepsilon_{it}$Calculated from Dechow and Dichev (2002)
Concentration of the stockholder ownership	*Stockhd*	Ratio of the percent of stock owned by 10 biggest stockholder

$$TA_{it} = \alpha_0 + \beta_1 FSC_{it} + \beta_2 \text{Control} + Ind + Year + \varepsilon_{it} \quad (6)$$

TA_{it} is the measure of tax avoidance, FSC_{it} is the financial statement comparability. We choose the mean and median of the comparability of the company and its industry peers as the measure of comparability of the company, other variables are defined in Table 1.

4. Sample selection and empirical results

4.1. Sample selection

We start our research from 2005 to 2015. We drop any observation if it has missing financial accounting information when calculating comparability. Considering the specificity of the financial industry, we drop the financial industry. We drop the observations if their pre-tax income is negative when calculating the book-tax difference (*BTD*). In addition, we drop the observation of ST and PT companies and finally get 9,623 firm-year observations. All continuous variables are winsorised at the 1% level.

Table 2 presents the descriptive statistics of major variables. The mean value of tax avoidance (BTD) is 0.054 and indicates that the book-tax difference of the listed

Table 2. Descriptive statistics.

Variables	Obs	Mean	Std	p25	Median	p75
BTD	9623	0.054	0.062	0.017	0.04	0.072
FSC_mn	9623	−0.028	0.022	−0.032	−0.022	−0.016
FSC_me	9623	−0.021	0.022	−0.022	−0.015	−0.01
ROA	9623	0.045	0.051	0.014	0.033	0.061
Size	9623	21.914	1.356	20.998	21.797	22.707
Lev	9623	0.471	0.225	0.317	0.475	0.623
MB	9623	4.831	9.312	1.819	2.846	4.748
Inv	9623	0.128	0.154	0.012	0.081	0.174
PPE	9623	0.206	0.189	0.048	0.157	0.314
Intang	9623	0.034	0.055	0.002	0.016	0.041
AQ	9623	−0.345	2.409	−1.646	−0.318	0.821
Stockhd	9623	0.545	0.161	0.431	0.548	0.656

company is about 5%. It is quite similar to the descriptive value in Liu and Wu (2014). The mean and median value of financial statement comparability is −0.028 and −0.021, and is quite close to the value described in Fang et al. (2017).

Table 3 presents the sample Pearson correlations in the lower-left part and Spearman rank correlations in the upper-right. Both Pearson and Spearman correlations yield similar results. Consistent with our expectations, financial statement comparability is correlated negatively with corporate tax avoidance.

Table 4 presents the main results of our study. The coefficient of both accounting comparability measures (*FSC_mn* and *FSC_me*) estimate on tax avoidance is negative and statistically significant at the 1% level, suggesting that higher comparability deters corporate tax avoidance. It validates our H1 and shows the governance effect of financial statement comparability. In terms of economic magnitude, the standardised coefficients imply that a 1% increase of the mean value of comparability can reduce the book-tax difference by 5.9%, suggesting that the improvement of comparability is of economic significance to suppress tax avoidance.

Financial analysts are important information media in the capital market and they play an important role in information transmission. They deliver valuable information on a business decision and the value of the company to outsiders after they collect, process and analysis the information. Skinner (1990) believes that the more analysts followed, and analysis reports of a company, the more the attention and information gathering of the company. Chuang, McInish, Wood, and Wyhowski (1995) study the relationship between the market reaction and analysts and find that analysts significantly reduced the degree of information asymmetry in the market and improved the information transparency. Therefore, the number of following analysts and the number of analysis reports published can proxy for the company's information environment, which indicates the degree of external attention of the company (Lang, Karl, & Miller, 2003). We use the number of following analysts and the number of analysis report to proxy for the information environment of a company. The greater the number of following analysts and analysis reports, the less opaque is the information. We classify companies into two groups: (1) companies in the top (i.e. fourth) quartile of the

Table 3. Pearson and Spearman correlation metrics.

	BTD	FSC_mn	FSC_me	ROA	Size	Lev	MB	Inv	PPE	Intan	AQ	Stkcdhd
BTD	1	−0.121	−0.150	0.84	0.004	−0.259	0.152	−0.073	−0.032	−0.013	−0.307	0.160
FSC_mn	−0.143	1	0.9159	−0.113	0.018	−0.072	0.054	−0.004	−0.075	0.084	0.073	−0.259
FSC_me	−0.155	0.936	1	−0.146	−0.062	−0.088	−0.091	0.024	−0.057	0.089	0.067	−0.293
ROA	0.780	−0.114	−0.127	1	0.049	−0.286	0.166	−0.078	−0.019	0.002	−0.312	0.184
Size	−0.072	0.041	0.001	−0.014	1	0.266	−0.369	0.074	0.039	0.041	−0.041	0.280
Lev	−0.137	−0.124	−0.136	−0.196	0.157	1	0.026	0.309	0.089	0.058	0.143	−0.046
MB	0.153	−0.081	−0.082	0.084	−0.326	0.252	1	−0.023	−0.124	0.024	−0.024	−0.076
Inv	−0.069	0.008	0.016	−0.072	0.092	0.265	−0.045	1	0.134	0.180	0.143	−0.038
PPE	−0.026	−0.049	−0.036	−0.032	0.089	0.091	−0.053	−0.148	1	0.424	−0.249	0.068
Intang	0.021	0.0132	0.002	0.001	−0.008	0.043	0.046	−0.075	0.150	1	−0.100	−0.043
AQ	−0.254	0.0171	0.002	−0.266	−0.046	0.146	0.064	0.202	−0.226	−0.086	1	−0.107
Stockhd	0.113	−0.192	−0.193	0.149	0.319	−0.061	−0.106	−0.021	0.096	0.012	−0.092	1

The lower-left part presents the Pearson correlation matrix and the upper-right part presents the Spearman correlation matrix; Numbers in bold denote significance levels below 5%

Table 4. Financial statement comparability and corporate tax avoidance.

	(1) *BTD*	(2) *BTD*	(3) *BTD*	(4) *BTD*
FSC_mn	−0.389***	−0.135***		
	(−8.16)	(−4.91)		
FSC_me			−0.381***	−0.138***
			(−13.36)	(−5.24)
ROA		0.872***		0.870***
		(37.49)		(37.28)
Size		0.001		0.001
		(1.48)		(1.40)
Lev		−0.017***		−0.017***
		(−5.39)		(−5.45)
MB		0.001***		0.001***
		(7.05)		(7.04)
Inv		0.003		0.003
		(0.95)		(1.06)
PPE		0.000		0.000
		(0.07)		(0.09)
Intang		0.011		0.011
		(1.32)		(1.23)
AQ		−0.002***		−0.002***
		(−7.06)		(−7.11)
Stockhd		0.000		0.000
		(0.17)		(0.08)
Intercept	0.017***	−0.015	−0.008	−0.012
	(3.51)	(−1.41)	(−0.90)	(−1.11)
Industry	Control	Control	Control	Control
Year	Control	Control	Control	Control
N	9623	9623	9623	9623
Adj.R^2	0.104	0.678	0.431	0.678

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

distribution of the number of following analysts or analyst reports, defined as companies facing low information asymmetry; and (2) companies that are in the first to third quartiles of the distribution. The data on following analysts and analysis reports come from CSMAR.

Table 5 presents the cross-sectional results of the estimation when companies are in a different information environment. Consistent with H2, the results show a more pronounced association between comparability and tax avoidance for companies facing more information opaque than for others. The difference in the effect of comparability between two groups is economically significant.

In terms of the product market competition, we use the Herfindahl-Hirschman index (HHI) calculated using sales income to proxy for the competition of the listed company. The higher is the HHI, the less competition the company faces. An HHI index of the company lower than median classifies the company as facing fierce product market competition; a company with an index higher than the median classifies the company as facing fierce product market competition.

The regression results in Table 6 show that the negative correlation between comparability and tax avoidance is not significant when the competition in the product market is weak. However, when the competition in the product market is fierce, the corporate

Table 5. Information environment, financial statement comparability and corporate tax avoidance.

	Number of following analysts				Number of following analyst reports			
	High	Low	High	Low	High	Low	High	Low
FSC_mn	−0.032	−0.174***			−0.020	−0.182***		
	(−1.05)	(−8.55)			(−0.70)	(−8.73)		
FSC_me			−0.024	−0.181***			−0.015	−0.188***
			(−0.81)	(−9.21)			(−0.54)	(−9.33)
ROA	1.000***	0.827***	1.000***	0.825***	0.991***	0.820***	0.991***	0.817***
	(69.37)	(74.25)	(69.00)	(73.93)	(74.14)	(71.20)	(73.81)	(70.88)
Size	0.001	−0.002***	0.001	−0.002***	0.001	−0.002***	0.001	−0.002***
	(1.16)	(−4.09)	(1.16)	(−4.12)	(1.56)	(−4.28)	(1.55)	(−4.31)
Lev	−0.017***	−0.000	−0.017***	−0.001	−0.018***	0.000	−0.018***	0.000
	(−4.89)	(−0.07)	(−4.89)	(−0.24)	(−5.55)	(0.19)	(−5.55)	(0.02)
MB	0.002***	0.001***	0.002***	0.001***	0.002***	0.001***	0.002***	0.001***
	(6.25)	(10.07)	(6.22)	(10.05)	(7.25)	(9.73)	(7.24)	(9.71)
Inv	0.007	−0.004	0.007	−0.004	0.007*	−0.005	0.007*	−0.004
	(1.48)	(−1.29)	(1.49)	(−1.15)	(1.68)	(−1.31)	(1.68)	(−1.18)
PPE	0.004	−0.002	0.004	−0.002	0.002	−0.001	0.002	−0.002
	(1.33)	(−0.71)	(1.35)	(−0.75)	(0.81)	(−0.44)	(0.82)	(−0.50)
Intang	0.021*	0.010	0.020*	0.009	0.028***	0.006	0.028***	0.005
	(1.88)	(0.98)	(1.86)	(0.88)	(2.67)	(0.58)	(2.66)	(0.49)
AQ	−0.001***	−0.001***	−0.001***	−0.001***	−0.001***	−0.001***	−0.001***	−0.001***
	(−5.22)	(−4.74)	(−5.22)	(−4.87)	(−5.21)	(−4.52)	(−5.21)	(−4.65)
Stockhd	−0.000	0.002	0.000	0.002	0.000	0.001	0.000	0.001
	(−0.03)	(0.72)	(0.02)	(0.61)	(0.07)	(0.38)	(0.10)	(0.27)
Intercept	−0.015	0.044***	−0.015	0.046***	−0.020	0.047***	−0.020	0.050***
	(−1.17)	(3.91)	(−1.10)	(4.12)	(−1.58)	(4.11)	(−1.54)	(4.38)
Industry	Control	Control	Control	Control	Industry	Control	Control	Control
Year	Control	Control	Control	Control	Year	Control	Control	Control
N	2880	6743	2880	6743	3136	6487	3136	6487
Adj.R^2	0.809	0.538	0.809	0.539	0.809	0.528	0.809	0.529
Wald Chi^2	7.44***		9.33***		10.42***		12.27***	

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

Table 6. Product market competition, financial statement comparability and corporate tax avoidance.

	Product market competition			
	Strong	Weak	Strong	Weak
FSC_mn	−0.090***	−0.006		
	(−4.79)	(−0.84)		
FSC_me			−0.075***	−0.006
			(−4.09)	(−0.94)
ROA	1.029***	0.994***	1.029***	0.994***
	(145.38)	(155.81)	(145.00)	(155.70)
Size	−0.001***	−0.001***	−0.001***	−0.001***
	(−3.76)	(−3.62)	(−3.78)	(−3.63)
Lev	−0.001***	−0.000	−0.001***	−0.000
	(−3.63)	(−1.03)	(−3.57)	(−1.04)
MB	0.000*	0.000***	0.000*	0.000***
	(1.80)	(2.95)	(1.80)	(2.96)
Inv	0.003	0.002	0.003	0.002
	(1.03)	(0.84)	(1.01)	(0.84)
PPE	−0.003	0.002	−0.003	0.002
	(−1.29)	(1.38)	(−1.25)	(1.38)
Intang	0.001	0.009**	0.001	0.009**
	(0.17)	(2.18)	(0.12)	(2.17)
AQ	−0.001***	−0.000***	−0.001***	−0.000***
	(−7.18)	(−3.17)	(−7.14)	(−3.17)
Stockhd	0.007***	0.010***	0.008***	0.010***
	(3.15)	(5.24)	(3.24)	(5.23)
Intercept	0.023***	0.012**	0.024***	0.012**
	(3.33)	(2.22)	(3.46)	(2.25)
Industry	Control	Control	Control	Control
Year	Control	Control	Control	Control
N	2858	5395	2858	5395
Adj.R^2	0.904	0.841	0.904	0.841
Wald Chi^2	6.95***		4.60**	

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

tax avoidance motivation is strong, and the deterrence effect of comparability on corporate tax avoidance is pronounced, which is consistent with our Hypothesis 3.

5. Additional analyses

5.1. Alternative mechanism

Allingham and Sandmo (1972) theoretically established the relationship between tax collection and tax avoidance. They introduced the criminal economy of Becker (1968) into the study of tax avoidance. The decision regarding tax avoidance is a trade-off between marginal benefit and marginal cost. The marginal cost of tax avoidance depends on the enforcement of the tax authority (Fan & Tian, 2013). Atwood, Drake, Myers, and Myers (2012), Ye and Liu (2011) and Zeng and Zhang (2009) all find that tax enforcement is an effective external governance effect on tax avoidance. The reason is that once the tax avoidance is discovered by the tax authority, the company will face a heavy penalty (Desai et al., 2007). According to the tax laws and regulations in China, taxable income in a tax declaration and tax inspection is mainly calculated based on the

financial accounting data of the company after tax adjustment. Therefore, tax authorities can make full use of accounting information for tax inspection. Mills (1998) and Mills and Sansing (2000) find that high earnings and low tax of a company will draw the attention of the tax authority. Ye and Liu (2011) find that when the tax enforcement is strong, the probability that a company is involved in non-tax item manipulation is higher. So a company is reluctant to engage in non-tax item manipulation in order to avoid the suspicion of the tax authority. However, in practice, due to the limitations of cost, workload and personnel constraints, it is difficult for the tax authorities to conduct a thorough check on the accuracy of taxable income of a company (Bozanic, Hoopes, Thornock, & Williams, 2017). Financial statement information from comparable firms can serve as a substitute for a firm's information (De Franco et al., 2011) and it provides a benchmark for the taxable income of the company for the tax authority. Some studies show that financial statement comparability facilitates audit work. Chen and Jiang (2017) believe that higher comparability indicates higher information quality and helps to reduce audit risk. The information spillover helps to improve audit efficiency, reduce audit work and finally lower audit fees. The tax authority may benefit from financial statement comparability as well. Low comparability of a company indicates a large difference between the business and financial measures of a company and its peers, which may attract the tax authority. Ex ante deterrence of tax inspections can deter companies from aggressive tax avoidance (Hoopes, Mescall, & Pittman, 2012), because strong tax enforcement exerts a higher cost of tax avoidance and curbs the manager's incentive to avoid tax (Dubin, Graetz, & Wilde, 1990; Slemrod, Blumenthal & Christianet, 2001). Therefore, higher financial statement comparability may improve the information transition in the tax audit of the tax authority and increase the penalty and reputation loss of tax avoidance. In this way, it suppresses the incentive for tax avoidance. This mechanism shows that the negative relationship between financial statement comparability and tax avoidance is driven by the support of the tax audit provided by comparability instead of the governance effect of itself.

Lin, Mills, Zhang, and Li (2018) find that political connections of the company may weaken tax enforcement effectiveness and constrain its governance effect. In addition, China has a vast territory, the difference in economic level between regions objectively results in inconsistency in tax enforcement intensity. Tax authorities in economically developed areas have more financial resources to attract talents, to improve tax enforcement infrastructure and so bring about stronger tax enforcement. After the tax sharing reform in 2002 in China, the tax competition among local governments subjectively lead to the difference of tax enforcement in different areas (Fan & Tian, 2013). In areas of higher tax enforcement intensity, tax audits are more frequent and are executed by skilful and experienced tax experts, which can increase the possibility of the tax avoidance behaviour (Hoopes et al., 2012). If so, we anticipate that the deterrence effect is more pronounced when there is higher enforcement intensity. Areas with less frequent tax audits, weak enforcement of tax law and high tolerance of tax avoidance lead to relatively lenient fines and penalties (Lin et al., 2018). Even if comparable accounting information provides tax authorities with information related to tax avoidance, they cannot exert effective punishment of the company and crack down on tax avoidance.

Hence, lower tax enforcement intensity will weaken the inhibiting effect of comparability on tax avoidance.

We use the tax effort index to proxy for the regional tax enforcement intensity. This is the ratio of actual tax collection and the predicted tax collection. The larger the ratio, the more effort of the local tax administration and the stronger the tax enforcement intensity. We follow Lotz and Morss (1967) and Zeng and Zhang (2009) and estimate the following equation to get the predicted tax effort:

$$\frac{Tax_{it}}{Y_{it}} = \alpha + \beta_1 GDP_{it} + \beta_2 Ind\_1_{it} + \beta_3 Ind\_2_{it} + \varepsilon_{it} \quad (7)$$

Tax_{it} is the total tax income of an area i in period t. Y_{it} is the gross domestic product of that place in the same period. GDP_{it} indicates the per capita GDP (taking natural logarithm). *IND_1* and *IND_2* respectively represent the proportion of primary industry in GDP and that of secondary industry in GDP. Then, the difference of actual ratio and predicted ratio of tax effort is the tax enforcement intensity (TE).

$$TE = \frac{Tax_{it}}{Y_{it}} - \frac{\widehat{Tax_{it}}}{Y_{it}} \quad (8)$$

We follow Zeng and Li (2016) and add up the tax income of Xia Men, Ning Bo, Da Lian, Shen Zhen and Qing Dao, who collect tax independently with that of the province in which they

Table 7. Tax enforcement, financial statement comparability and corporate tax avoidance.

	Tax enforcement			
	Strong	Weak	Strong	Weak
FSC_mn	−0.091**	−0.432***		
	(−2.70)	(−12.44)		
FSC_me			−0.137***	−0.438***
			(−4.02)	(−13.45)
ROA	0.109***	0.001***	0.108***	0.000***
	(25.34)	(7.23)	(25.22)	(7.07)
Size	0.003***	0.001*	0.003***	0.001*
	(3.95)	(1.75)	(3.76)	(1.71)
Lev	−0.057***	−0.048***	−0.058***	−0.049***
	(−14.53)	(−13.33)	(−14.64)	(−13.59)
MB	0.001***	0.001***	0.001***	0.001***
	(15.29)	(14.04)	(15.11)	(14.13)
Inv	0.027***	0.007	0.027***	0.008
	(4.79)	(1.26)	(4.92)	(1.36)
PPE	−0.016***	−0.024***	−0.016***	−0.023***
	(−3.50)	(−5.23)	(−3.50)	(−5.10)
Intang	0.004	−0.008	0.003	−0.010
	(0.25)	(−0.53)	(0.17)	(−0.68)
AQ	−0.005***	−0.006***	−0.005***	−0.006***
	(−16.13)	(−17.81)	(−16.19)	(−17.84)
Stockhd	0.022***	0.031***	0.021***	0.030***
	(4.37)	(6.16)	(4.13)	(5.94)
Intercept	−0.034**	−0.015	−0.030*	−0.007
	(−2.12)	(−0.92)	(−1.91)	(−0.42)
Industry	Control	Control	Control	Control
Year	Control	Control	Control	Control
N	4126	5337	4126	5337
Adj.R^2	0.347	0.228	0.349	0.231
Wald Chi^2	15.97***		12.92***	

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

are located. We drop Tibet, where corporate income tax is exempt. We classify all samples according to the tax enforcement intensity of the province. The area of high tax enforcement intensity is the place with TE value above median.

Table 7 reports the test results for strong versus weak tax enforcement. It shows that the negative relationship between comparability and tax avoidance is more pronounced in weak tax enforcement areas. The empirical result proved that the deterrence effect of comparability on tax avoidance is driven by the governance effect of financial accounting comparability instead of facilitating tax audits of the tax authority. It shows that financial statement comparability can also play a governance role in tax avoidance and it has a substitution effect with tax enforcement in terms of tax avoidance.

5.2. Endogeneity

Given the possibility of an endogenous problem between financial statement comparability and corporate tax avoidance, we use the following ways to alleviate endogeneity problems.

Table 8. 2SLS regression with instrument variable.

	(1)	(2)
	First stage regression	Second stage regression
	FSC_mn	*BTD*
FSC_mn	– – –	−0.163***
		(-4.49)
ROA	−0.014**	0.895***
	(-2.28)	(26.64)
Size	0.001***	−0.002***
	(3.79)	(-2.92)
Lev	−0.007***	−0.003
	(-4.14)	(-0.70)
MB	0.001	0.001***
	(1.06)	(3.30)
Inv	0.002*	0.003
	(1.92)	(1.14)
PPE	−0.001	−0.005**
	(-0.098)	(-2.37)
Intang	0.011***	0.018**
	(3.13)	(2.10)
AQ	−0.001	−0.002***
	(-0.26)	(-6.51)
Stockhd	−0.011***	0.002
	(-7.82)	(0.86)
Fsc_IV	0.001***	– – –
	(21.82)	
Fsc_IV2	0.623***	– – –
	(21.76)	
Intercept	−0.020***	0.039***
	(-4.32)	(3.41)
Firm	Control	Control
Year	Control	Control
N	8,600	8,600
Adj.R^2	0.495	0.610
Wald F Statistic	104.96***	2752***
Hausman test	– – –	38.23***

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

(1) We follow Jiang (2017) and use both the mean comparability of the industry peers of a company (*Fsc_IV*) and the lagged comparability of the company (*FSC_IV2*) as instrument variables (IV) and perform 2SLS regression. The accounting policies and accounting estimates selected by the company may be affected by company peers, which implies that the comparability of industry peers can affect the comparability of a company, whereas the tax avoidance of a company is unlikely to be affected by the comparability of its industry peers. Similarly, the lagged comparability of the company is correlated with the endogenous variable, so it is a predetermined variable. However, current tax avoidance is unlikely to affect the earlier comparability of the company. Stock, Wright, and Yogo (2002) point out that effective IV should be relevant and exogenous. The Hausman Test is also needed to estimate the significance of the difference of IV estimation and OLS estimation. Table 8 presents the results of the 2SLS estimation in each stage. It shows that IV has a good explanatory power for *FSC_mn* with a significant *p*-value at the 0.001 level. The F statistics value is above 10 and it proves there is no weak IV problem. We test the over-identification problem of IV to test the exogeneity; that is, it's unrelated to the disturbance. The p-value in the Sargan test is 0.716, which leads us to refuse the null hypothesis and it shows the exogeneity of IV. The estimation of Hausman refuses the null hypothesis, it proves the endogeneity of comparability and show the effectiveness of our IV. Following Daron, Johnson, and Robinson (2001) and Jiang (2017), we use IV in the 2SLS regression and

Table 9. GMM estimation: financial statement comparability and corporate tax avoidance.

	(1)	(2)
	BTD	*BTD*
FSC_mn	−0.143***	
	(−7.12)	
FSC_me		−0.149***
		(−7.97)
ROA	0.760***	0.760***
	(90.96)	(90.96)
Size	−0.002**	−0.001
	(−2.09)	(−1.58)
Lev	−0.013***	−0.014***
	(−5.94)	(−6.39)
MB	0.002***	0.002***
	(17.53)	(17.80)
Inv	0.014***	0.014***
	(5.80)	(5.72)
PPE	−0.007***	−0.008***
	(−3.57)	(−4.05)
Intang	−0.000	0.000
	(−0.08)	(0.00)
AQ	−0.004***	−0.004***
	(−12.18)	(−12.52)
Stockhd	0.053***	0.051***
	(7.23)	(7.00)
Intercept	−0.006	−0.017
	(−0.37)	(−1.13)
N	9,623	9,623

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

control firm fixed effects in the regression. The result in Table 8 shows that the relationship between financial statement and tax avoidance still exists in the IV estimation.

(2) We use systematic GMM estimation to further alleviate the endogeneity problem. Table 9 is the estimation result of systematic GMM estimation and it shows that our main find is robust.

(3) Gallemore and Labro (2015) find that the internal information environment is positively correlated with tax avoidance. So we follow Gallemore and Labro (2015) and use the earnings announcement speed (*Earnings Announcement Speed*), measured as the number of days between the end of the fiscal year and the earnings announcement date, divided by 365 and multiplied by negative one to proxy for the internal information quality of a company. Doyle and McVay (2007) find that accounting quality is positively affected by internal control. We use internal control index (*ICindex*) from DIB to control for internal control of a company. In addition, Francis et al. (2014) find that financial statements audited by 'Big 4' are more comparable.

Table 10. Financial statement comparability and corporate tax avoidance with additional control variables.

	(1)	(2)	(3)	(4)
	BTD	*BTD*	*BTD*	*BTD*
FSC_mn	−0.376***	−0.134***		
	(−7.14)	(−4.27)		
FSC_me			−0.402***	−0.138***
			(−7.46)	(−4.54)
ROA		0.902***		0.900***
		(27.85)		(27.67)
Size		0.001		0.001
		(0.61)		(0.54)
Lev		−0.008*		−0.009**
		(−1.95)		(−2.01)
MB		0.001***		0.001***
		(4.32)		(4.31)
Inv		−0.001		0.001
		(−0.02)		(0.07)
PPE		−0.002		−0.002
		(−0.65)		(−0.63)
Intang		0.011		0.011
		(1.22)		(1.14)
AQ		−0.002***		−0.002***
		(−5.90)		(−5.94)
Stockhd		0.003		0.003
		(0.99)		(0.89)
Big4		−0.001		−0.001
		(−0.27)		(−0.28)
ICindex		−0.001***		−0.001***
		(−3.03)		(−2.98)
Annspeed		−0.007		−0.008
		(−1.07)		(−1.14)
Intercept	0.016***	−0.013	0.021***	−0.010
	(3.26)	(−0.82)	(4.42)	(−0.65)
Industry	Control	Control	Control	Control
Year	Control	Control	Control	Control
N	9623	9623	9623	9623
Adj. R^2	0.098	0.639	0.102	0.639

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

Zeng and Li (2016) find that tax aggressive behaviour may be transmitted among companies through a common auditor. Even though they believe 'Big 4' can constrain the phenomenon, we still control for the effect of 'Big 4' on accounting quality and tax avoidance. The result in Table 10 indicates that after controlling for the above factors, our conclusion remain unchanged.

(4) Even though the study of the determinants of tax avoidance is vast, there still exist possible omitted variables that may distort our conclusion. To relieve this concern, we further control for the firm fixed effect and re-estimate Equation (1). Table 11 presents the same result with the main conclusion.

(5) The measure of comparability is calculated by the financial data of the previous 16 quarters, so it can alleviate the casual problem to some extent. We construct the model and control for the firm fixed effect to further alleviate the casual problem. The regression result is shown in Table 12.

$$\Delta TA_{it} = \alpha_0 + \beta_1 \Delta FSC_{t-1} + \beta_2 \Delta \text{Control} + \text{Firm} + \text{Year} + \varepsilon_{it}$$

5.3. Robust test

We do the following in order to make sure that our conclusion is robust.

Table 11. Control for firm fixed effect: financial statement comparability and corporate tax avoidance.

	(1)	(2)	(3)	(4)
	BTD	*BTD*	*BTD*	*BTD*
FSC_mn	−0.384***	−0.120***	−0.462***	
	(−11.24)	(−5.29)	(−13.60)	
FSC_me				−0.130***
				(−5.72)
ROA		0.883***		0.881***
		(99.86)		(99.18)
Size		−0.002**		−0.002**
		(−2.29)		(−2.30)
Lev		−0.010***		−0.010***
		(−3.84)		(−3.94)
MB		0.001***		0.001***
		(8.69)		(8.72)
Inv		0.001		0.001
		(0.33)		(0.44)
PPE		0.001		0.001
		(0.55)		(0.54)
Intang		−0.011		−0.012
		(−1.32)		(−1.42)
AQ		−0.001***		−0.001***
		(−5.37)		(−5.40)
Stockhd		0.011***		0.011***
		(2.84)		(2.80)
Intercept	0.037***	0.039***	0.039***	0.040***
	(19.39)	(2.71)	(22.87)	(2.81)
Firm	Control	Control	Control	Control
Year	Control	Control	Control	Control
N	9623	9623	9623	9623
Adj. R^2	0.423	0.758	0.426	0.758

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

Table 12. Difference model regression: financial statement comparability and corporate tax avoidance.

	(1)	(2)
	ΔBTD_{irt}	ΔBTD_{irt}
ΔFSC_mn_{t-1}	−0.042*	
	(−1.71)	
ΔFSC_me_{t-1}		−0.068***
		(−2.78)
ΔROA_{t-1}	0.267***	0.266***
	(50.54)	(50.49)
$\Delta SIZE_{t-1}$	0.001	0.001
	(0.80)	(0.83)
ΔLev_{t-1}	−0.003	−0.004
	(−1.17)	(−1.21)
ΔMB_{t-1}	0.001***	0.001***
	(7.03)	(7.01)
ΔInv_{t-1}	−0.000	−0.000
	(−0.03)	(−0.03)
ΔPPE_{t-1}	−0.001	−0.001
	(−0.26)	(−0.22)
$\Delta Intang_{t-1}$	−0.011	−0.011
	(−0.83)	(−0.85)
ΔAQ_{t-1}	−0.001***	−0.001***
	(−4.34)	(−4.36)
$\Delta Stockhd_{t-1}$	0.012*	0.012*
	(1.74)	(1.70)
Intercept	−0.052***	−0.052***
	(−7.09)	(−7.08)
Firm	Control	Control
Year	Control	Control
N	8597	8597
Adj.R^2	0.11	0.11

Note: T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

(1) Use the alternative method to calculate the measure of comparability. First, we follow De Franco et al. (2011) and choose the mean of the highest comparability of company *i* and its four peers as the alternative measure of comparability and re-run the regression. In addition, we follow Francis et al. (2014) and re-calculate the measure of comparability. The basic logic of this is similar to De Franco's except that the difference of total accrual (discretional accrual) is considered as the difference of the results of the mapping of two companies in Francis et al. (2014). The calculating model is as follows:

$$FSC\_TA_{\mathrm{it}} = -1 \times \frac{1}{J}\sum_{\mathrm{j}=1}^{J} |TA_{\mathrm{it}} - TA_{\mathrm{jt}}| \tag{9}$$

$$FSC\_Abn_{\mathrm{it}} = -1 \times \frac{1}{J}\sum_{\mathrm{j}=1}^{J} |DA_{\mathrm{it}} - DA_{\mathrm{jt}}| \tag{10}$$

FSC_TA_{it} is the average absolute difference between the total accrual of the two companies. Greater values indicate lower accounting comparability. In order to be the same as the true situation, we take the negative value so that greater values indicate greater accounting comparability. *TA* is the total accrual calculated by the difference of net profit and cash from operation standardised by total asset. FSC_Abn_{it} is the negative value of the average

absolute difference between the discretional accrual of two companies. *DA* is the discretional accrual calculated by the modified Jones Model (Jones, 1991). The regression result of using the alternative measure of comparability is given in Table 13 and it supports our conclusion.

(2) Use alternative tax avoidance measure. We follow Wu (2009) and re-calculate the tax avoidance *BTD2*. *BTD2* = (pre-tax income-tax expense/statutory tax rates)/ total asset. In addition, we use alternative ways to calculate the effective tax rate adjusted by nominal tax rate (*ETR*) as a tax avoidance measure. Higher *ETR* indicates lower tax avoidance. We follow Stickney and McGee (1982) and Wu (2009) and use the following ways to calculate *ETR1* = (Current tax expense)/(pre-tax income – deferred tax expense/statutory tax rate). We follow Shevlin (1987) and calculate *ETR2* = (tax expense – deferred tax expense)/(pre-tax income – Δ deferred tax expense/statutory tax rate). We drop the observation if their *ETR* is above 1 or below 0 when calculating *ETR*. The regression result of the alternative tax avoidance measure is presented in Table 14 and the conclusion remains unchanged.

Table 13. Financial statement comparability and corporate tax avoidance with alternative comparability measure.

	(1)	(2)	(3)	(4)	(5)	(6)
	BTD	*BTD*	*BTD*	*BTD*	*BTD*	*BTD*
FSC_4	−0.008***	−0.005**				
	(−2.65)	(−2.27)				
FSC_TA			−0.056***	−0.018***		
			(−9.19)	(−3.39)		
FSC_Abn					−0.023***	−0.006***
					(−11.27)	(−3.53)
ROA		0.825***		0.879***		0.870***
		(82.56)		(47.66)		(55.07)
Size		−0.006***		−0.002		−0.003***
		(−7.29)		(−1.50)		(−2.89)
Lev		0.005*		−0.006		−0.007**
		(1.83)		(−1.59)		(−2.19)
MB		0.001***		0.001***		0.001***
		(10.26)		(3.22)		(3.95)
Inv		−0.003		−0.003		−0.002
		(−0.87)		(−0.79)		(−0.44)
PPE		0.002		−0.001		0.001
		(0.67)		(−0.35)		(0.21)
Intang		−0.014		−0.003		−0.004
		(−1.32)		(−0.26)		(−0.47)
AQ		−0.001***		−0.001***		−0.001***
		(−5.07)		(−4.04)		(−4.12)
Stockhd		0.019***		0.010*		0.017***
		(3.85)		(1.73)		(3.93)
Intercept	−0.004	0.116***	0.003	0.126***	0.006	0.036
	(−0.46)	(6.09)	(0.35)	(6.88)	(0.91)	(1.63)
Industry	Control	Control	Control	Control	Control	Control
Year	Control	Control	Control	Control	Control	Control
N	9623	9623	9796	9796	17,071	17,071
Adj.R^2	0.396	0.686	0.389	0.692	0.444	0.740

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

Table 14. Financial statement comparability and corporate tax avoidance with alternative tax avoidance measure.

	(1)	(2)	(3)	(4)	(5)	(6)
	BTD2	*BTD2*	*ETR1*	*ETR1*	*ETR2*	*ETR2*
FSC_mn	−0.095***		0.470***		0.362***	
	(−3.93)		(3.49)		(3.39)	
FSC_me		−0.102***		0.575***		0.440***
		(−3.95)		(4.22)		(4.26)
ROA	0.884***	0.882***	−0.623***	−0.610***	−1.203***	−1.192***
	(59.55)	(59.12)	(−11.44)	(−11.13)	(−16.39)	(−16.25)
Size	−0.001	−0.001	0.002	0.002	0.003	0.003
	(−1.59)	(−1.59)	(0.51)	(0.52)	(1.23)	(1.25)
Lev	−0.009***	−0.009***	0.030*	0.032**	0.036**	0.037**
	(−2.96)	(−3.01)	(1.88)	(2.01)	(2.09)	(2.18)
MB	0.001***	0.001***	−0.002***	−0.002***	0.000	0.000
	(4.97)	(4.97)	(−3.75)	(−3.76)	(0.24)	(0.27)
Inv	0.001	0.001	0.043***	0.041**	0.049**	0.047**
	(0.29)	(0.38)	(2.58)	(2.48)	(2.41)	(2.31)
PPE	0.002	0.002	−0.032**	−0.032**	−0.044***	−0.045***
	(1.09)	(1.08)	(−1.97)	(−1.98)	(−2.72)	(−2.74)
Intang	−0.003	−0.004	−0.088*	−0.084*	−0.024	−0.022
	(−0.49)	(−0.58)	(−1.84)	(−1.77)	(−0.43)	(−0.39)
AQ	−0.001***	−0.001***	−0.001	−0.000	−0.005***	−0.005***
	(−5.49)	(−5.51)	(−0.59)	(−0.56)	(−4.06)	(−4.01)
Stockhd	0.011***	0.011***	−0.026	−0.025	0.024	0.027
	(3.03)	(3.01)	(−1.13)	(−1.05)	(1.20)	(1.33)
Intercept	0.021	0.022	0.184*	0.179*	0.086	0.080
	(1.16)	(1.23)	(1.83)	(1.78)	(1.54)	(1.45)
Industry	Control	Control	Control	Control	Control	Control
Year	Control	Control	Control	Control	Control	Control
N	9623	9623	9623	9623	8692	8692
Adj.R^2	0.840	0.840	0.276	0.276	0.127	0.128

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

In order to avoid the influence of the new accounting principal implemented and the tax reform of corporate income tax in 2007, we drop the observation before 2008 and re-estimate the regression model. The result in Table 15 shows the same conclusion.

6. Conclusion

Corporate tax avoidance has always been a focus of the academic and the tax authority. This paper explores the deterrence effect of financial statement comparability on corporate tax avoidance from the perspective of the governance effect of the accounting quality. The conclusion shows that tax avoidance can be curbed by improving the comparability of the financial statement. The deterrence effect of comparability on tax avoidance is more pronounced for companies with a more opaque information environment and more fierce competition. Additional tests show that there exists a substitution effect of the governance role of financial statement comparability and tax enforcement, that is, the deterrence effect of comparability is more pronounced in low tax enforcement areas. The financial statement comparability itself has a governance effect on corporate tax avoidance.

The conclusion of this paper indicates that the improvement of accounting quality, especially financial statement comparability, has practical significance in restraining

Table 15. Financial statement comparability and corporate tax avoidance with alternative sample period.

	(1)	(2)	(3)	(4)
	BTD	BTD	BTD	BTD
FSC_mn	−0.434***	−0.186***		
	(−5.62)	(−3.50)		
FSC_me				
ROA		0.847***		0.844***
		(21.73)		(21.60)
Size		−0.000		−0.000
		(−0.21)		(−0.29)
Lev		−0.009		−0.009*
		(−1.64)		(−1.69)
MB		0.001***		0.001***
		(3.70)		(3.70)
Inv		−0.001		−0.001
		(−0.34)		(−0.23)
PPE		−0.005		−0.005
		(−1.51)		(−1.52)
Intang		0.023**		0.023**
		(2.24)		(2.17)
AQ		−0.002***		−0.002***
		(−5.40)		(−5.47)
Stockhd		0.001		0.000
		(0.20)		(0.02)
Intercept	0.021***	0.006	0.025***	0.010
	(3.22)	(0.41)	(4.11)	(0.65)
Industry	Control	Control	Control	Control
Year	Control	Control	Control	Control
N	7158	7158	7158	7158
Adj. R^2	0.097	0.593	0.102	0.593

T-statistics are based on robust standard errors clustered by firm and presented in parentheses; ***, ** and * denote significance levels of 1%, 5% and 10%, respectively

corporate tax avoidance. From the perspective of accounting goals, advocating the improvement of comparability can increase the support of the accounting system to tax enforcement in the macro-economy and complies with the requirements of the accounting system to coordinate with tax laws. Financial statement comparability can play the governance role, can increase information transfer so as to increase monitoring efficiency and suppress the agency cost of tax avoidance and so deter tax avoidance. In helps to strengthen the effectiveness of tax law as well as act as a substitution power of tax enforcement. It improves the ability of the accounting system in supporting the operation of the national macroeconomic administration (The Ministry of Finance, State Bureau of Taxation) and so optimise the tax system of China.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the National Social Science Foundation [18ZDA113]; National Nature Science Foundation [71672129].

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