

Creditor Protection and Corporate Tax Avoidance: Evidence from a Quasi-natural Experiment of the “Anti-Laolai” Policy in China

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Abstract

This paper investigates how creditor protection affects corporate tax avoidance. We explore the issuance of the first high consumption restrictions against judgement debtors (“laolai”) as a shock to the debtor-creditor relationship that prompts debtors to consider stakeholder interests more when making risky business decisions. As a result, debtors engage in less tax avoidance. Using a difference-in-differences analysis, we find that borrowing firms operating in a severer dishonest environment significantly decrease their level of tax avoidance after the enactment of the anti-laolai policy. This effect is more pronounced for firms with higher leverage and greater profit volatility, when firms are state owned, and when firms are in provinces with stronger tax collection enforcement. Overall, our paper adds to the literature on the economic consequences of creditor protection and the determinants of corporate tax avoidance.

Keywords: Creditor Protection, Anti-Laolai Policy, Corporate Tax Avoidance

JEL classification: K42, M4

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I. Introduction

Tax avoidance is one of the most studied topics in tax research. There is widespread interest in and concern about the magnitude and determinants of corporate tax planning (Hanlon and Heitzman, 2010) because the level of tax avoidance has a significant influence on firm value and the welfare of related parties, such as shareholders, creditors, employees, and the government. To explore this issue, a battery of previous studies have examined how shareholders' benefits from tax saving and shareholder-manager conflicts would affect corporations' tax avoidance decisions (Slemrod, 2004; Chen and Chu, 2005; Desai and Dharmapala, 2006; Armstrong *et al.*, 2015). However, as noted by Shevlin (2007), we only have an incomplete understanding of why some firms engage in more tax avoidance than others. In particular, among the research on the determinants of corporate tax avoidance, little attention is paid to the impact of the debtor-creditor relationship (Kim *et al.*, 2019). With the increasing interest in the protection of stakeholders, there has been a recent trend in studies examining the interaction between the debtor-creditor relationship and tax planning: for example, Shevlin *et al.* (2020) discuss the impact of corporate tax avoidance on the cost of bonds, Hasan *et al.* (2014) study the influence of tax avoidance on the cost of bank loans, Bonsal *et al.* (2017) examine how tax avoidance affects the credit market rating process, and Gallemore *et al.* (2019) assign an active and prominent role to banks in facilitating tax planning incentives. Overall, this strand of studies has shown that corporate tax avoidance and the debtor-creditor relationship could significantly influence each other, and it is difficult to establish the role of the debtor-creditor relationship in shaping tax avoidance strategy. To fill this void in the literature, Kim *et al.* (2019) use the initiation of credit default swaps (CDS) in the US market as an exogenous shock to creditors that reduces their incentives to closely monitor debtors, and they find that CDS stimulate more tax avoidance.

In this paper, we utilise the adoption of the Supreme People's Court's (SPC) "*Several Provisions of the Supreme People's Court on Restricting High Consumption of Judgment Debtors*"⁵ ("anti-laolai" policy; hereinafter, ALP) as a quasi-natural experiment to examine how potentially exogenous changes in the debtor-creditor relationship affect debtors' tax avoidance. In 2010, the ALP was enacted to strengthen law enforcement and to protect the lawful rights of creditors by prohibiting judgment debtors from engaging in high consumption behaviours⁶ and lowering their quality of life. As a result, the ALP has materially altered borrowing firms' pay-off function and weakened their incentives to conduct risky activities that creditors do not favour, including tax avoidance.

Tax avoidance is perceived as a potentially value-enhancing but risk-engendering corporate activity for both shareholders and creditors (Rego and Wilson, 2012; Hasan *et al.*,

⁵ Judgment debtors refer to debtors who deliberately delay their debts and debtors who refuse to fulfill their contractual liability.

⁶ We will explain more about these provisions in the "institutional background" section.

2014; Kim *et al.*, 2019). However, shareholders and creditors have obviously different risk preferences and return expectations with regard to corporations' risky behaviours. From the creditors' perspective, they bear the consequences of the higher information risk, operating risk, and audit risk induced by tax avoidance, while they do not necessarily share the benefits since they only collect a fixed pay-off. In contrast, shareholders are residual claimants whose welfare is decided by firm value, and thus they prefer value-increasing tax avoidance strategies (Desai and Dharmapal, 2006; Khan *et al.*, 2017). Overall, compared with shareholders, creditors such as banks endure a substantial downside risk introduced by their asymmetric pay-off function and thus become particularly sensitive to firms' risk-taking behaviours.

As documented above, the ALP strengthens creditor protection by increasing debtors' default cost. Under the ALP, once borrowing firms fail to fulfil their contractual liability, not only the firms but also the natural persons in charge will be regarded as *laolai*, and all of their high consumption behaviours will be closely supervised by multiple central government departments, bringing great inconvenience to their daily lives. Given creditors' adverse attitude towards tax avoidance and stronger creditor protection, borrowing firms' marginal costs of tax avoidance greatly increase, while the marginal benefits remain largely unchanged. Thus, debtors' optimal level of tax avoidance has decreased since the implementation of the ALP.

To empirically examine whether and how the ALP impacts borrowers' tax avoidance, we utilise a difference-in-differences (DID) method. We use the number of *laolai* listed by the SPC of China from 2013 to 2016 as a proxy for local dishonest environment. Following Yang and Pan (2019), we perceive provinces with larger numbers of *laolai* to have a severer dishonest environment, and thus companies in these provinces would be more affected by the ALP; hence, in this study, companies in such provinces comprise the treatment group and other companies form the control group. Consistent with our hypotheses, the results in the main DID regression show that the treatment group experiences a significant decrease in tax avoidance after the implementation of the ALP. Furthermore, we conduct a cross-sectional test to investigate the potential mechanism and find the following: (1) only firms with a higher credit default risk (measured by financial leverage and profit volatility) experience a significant decrease in tax avoidance after the enforcement of the ALP, proving that the ALP reduces firms' tax avoidance by increasing the external protection of creditors; (2) ALP implementation only has significant downside effects on tax avoidance in state-owned enterprises (SOEs) because the executives of SOEs are pure agents who only bear the marginal cost of tax avoidance and enjoy little benefit from this risky investment; (3) only firms located in provinces with stronger tax collection enforcement are significantly affected by the ALP, implying that the ALP would only reduce corporate tax avoidance when the threat of getting punished is big enough.

The main advantages of using Chinese data to explore this topic are as follows. First, the ALP in China provides a potentially exogenous change in the debtor-creditor relationship, which offers us an ideal setting to establish the causality between creditor protection and corporate tax avoidance. Second, different from Western firms whose ownership is highly diffused, Chinese firms usually have highly concentrated ownership and the largest shareholders have strong incentives to monitor managers and to influence managerial decisions (Crossland and Hambrick, 2011; Jiang and Kim, 2015). Therefore, the conflicts between shareholders and managers are much smaller in China. In the case of Western firms, it is hard to identify how conflicts between debtors and creditors affect corporate decisions since those decisions might be made by managers most times and may be affected by the conflicts between shareholders and managers. In other words, shareholder-manager conflict and debtor-creditor conflict get entangled with each other in these firms. In contrast, Chinese data provide a much cleaner setting to test the influence of debtor-creditor conflicts on corporate tax decisions.

Our study makes two potential contributions to the literature. First, it contributes to the literature on the role that the debtor-creditor relationship plays in tax planning by examining how creditor protection affects corporate tax avoidance. This paper not only adds to the determinants of tax planning but also provides new evidence on the economic consequences of creditor protection. Second, it sheds new light on the consequences of the ALP. To the best of our knowledge, there are only a few studies estimating the ALP's economic consequences, and most of them focus on the ALP's impacts on debtor contracts. For example, Yang and Pan (2019) use the number of *laolai* as an index of a dishonest environment and find that dishonesty would increase bond credit spread, and Dai *et al.* (2019) argue that public firms in a dishonest environment have more access to credit debts because of their higher information transparency compared with unlisted firms. In this paper, we provide novel evidence that the ALP also changes debtors' opportunistic behaviours.

The rest of our paper proceeds as follows. The next section discusses the institutional background, the literature review, and our main hypothesis. Section III introduces the data and presents summary statistics. Section IV presents the main empirical findings. Section V presents the results of a further test. The last section concludes the paper.

II. Institutional Background, Literature Review, and Hypothesis Development

2.1 Institutional Background

Honesty is not only a good quality of human beings but also an important lubricant for social operations (Arrow, 1974). However, the business environment in China's transition economy period has long suffered from dishonest behaviours (Dai *et al.*, 2019). To foster and practise core socialist values, advance credit information sharing, further improve the ability

of the people's courts to supervise, warn and punish dishonest persons, and finally raise the level of honesty in the whole of Chinese society, the SPC issued and enacted "*Several Provisions of the Supreme People's Court on Restricting High Consumption of Judgment Debtors*" in 2010. It was the first time that the ALP had ever been raised to the level of a country strategy, and it attracted great attention in Chinese society.⁷

The existence of *laolai* is detrimental to social honesty. Subjectively, *laolai* have the malicious intention of deliberately delaying the payment of debt; objectively, they refuse to fulfil their contractual liability. According to the explanation provided by the SPC, a *laolai* can either be a natural person or an enterprise legal person. When a *laolai* is an enterprise legal person, high consumption restrictions are directed against the enterprise's legal representative, principal person in charge, person directly responsible for affecting debt performance, or controlling shareholder. The so-called "high consumption" behaviours include nine kinds of luxury consumption: (1) taking an airplane, a soft berth in a train, or a second class berth or above as the means of transportation; (2) consuming in star hotels, night clubs, golf courses, etc.; (3) purchasing real estate or to build, expand, or luxuriously furnish houses; (4) renting high-end office buildings, hotels, apartments, or other places for doing business; (5) purchasing vehicles not necessary for business operations; (6) traveling or taking a vacation; (7) sending one's children to high-cost private schools; (8) purchasing insurance and financial products by paying a high premium; and (9) conducting other types of high consumption unnecessary for one's life or work.

These provisions are formulated to further strengthen law enforcement and fully protect the lawful rights and interests of petitioners, especially creditors (e.g. banks and bondholders). This newly introduced protection for creditors is crucial because the efficacy of debt contracts largely depends on their legal enforcement (Djankov *et al.*, 2008). Before these provisions, the relatively poor protection for creditors in China had induced numerous acts of fraud in debtor-creditor relationships and given rise to a great number of judgement debtors for decades. The implementation of restrictions on *laolai* directly strengthens the enforcement of debt contracts in at least two ways: First, as required by this policy, the high consumption of *laolai* is closely supervised by several different departments, such as the Ministry of Communications and the Ministry of Education, which makes the execution of the policy more efficient; secondly, unlike previous corporate-level punishments, the high consumption restrictions are at the personal level, which enormously impacts the executives of *laolai* companies and affects their cost-benefit analysis in deciding the level of risky tax avoidance.

The 2010 restrictions on high consumption show China's great determination to rebuild honesty in the business environment, and they have been followed by several other striking *laolai* policies. In 2013, the SPC started to publicly announce the identities of dishonest

⁷ Baidu Search Index for the word *laolai* was 4,610 when these provisions were issued, compared with a Baidu Search Index of no more than 80 shortly before the issuance.

persons subject to enforcement. Since then, the ID numbers of *laolai* (with birth year and month concealed) have been published on China's Executive Information Disclosure website (<http://zxgk.court.gov.cn>), which is also our paper's source of *laolai* data. After executing the 2010 high consumption restrictions for 5 years, in 2015, the SPC amended the previous restrictions by further prohibiting *laolai* from taking any seats on the high-speed rail service (G-head Electric Multiple Units). One year later, the State Council issued guiding opinions to establish and improve the system of joint punishment for dishonest behaviours.

While all the above actions prove the determination of the law enforcement departments to develop social honesty, we adopt the 2010 high consumption restrictions as our exogenous shock to creditor protection, mainly because this was the first serious hit to dishonest debtors in China. Compared with the subsequent policies and provisions, the first ALP provides a cleaner setting to test the consequences of a sudden increase in creditor protection.

2.2 Literature Review

In a well-known review paper in the tax research, Hanlon and Heitzman (2010) raise the question of why some corporations avoid more tax than others. This question is essential since investors perceive both overly conservative and overly aggressive tax avoidance as value destroying. Firms with insufficient tax avoidance would miss the tax-saving benefit, so Weisbach (2002) asks why there is not more tax sheltering and names it the "under sheltering puzzle". On the other hand, firms with excessive tax avoidance might bear too much risk, so Shackelford and Shevlin (2001) call for research on the determinants of tax aggressiveness.

To provide answers to these long-standing questions, previous research has examined how the benefits from tax saving for shareholders and shareholder-manager conflicts affect a firm's tax avoidance (Desai and Dharmapala, 2006; Armstrong *et al.*, 2015). The first and most important benefit from tax avoidance for shareholders should be the increased after-tax income and higher firm value. Desai and Dharmapala (2006, 2009) show a positive relation between tax avoidance and firm value for well-governed firms. Wilson (2009) also finds that tax avoidance helps to increase firm value. Khan *et al.* (2017) state that immediate benefits include higher profit margins and a greater likelihood of meeting or beating analysts' expectations. Law and Mills (2015) document that aggressive corporate tax planning could provide additional financing.

In the meantime, recent studies believe corporations also take shareholder-manager conflicts into consideration when making tax-planning decisions. Slemrod (2004), Chen and Chu (2005), and Crocker and Slemrod (2005) lay the theoretical foundation for understanding corporate tax avoidance within an agency framework. Chen and Chu (2005) examine corporate tax avoidance under a standard principal-agent model and focus on the efficiency loss due to the separation of management and control. Desai and Dharmapala (2006) argue that inconsistent with the intuition that the alignment of shareholders' and managers' interests would induce a greater level of tax sheltering, increasing incentive compensation decreases

the level of tax avoidance. Their explanation for this counter-intuitive finding is that tax avoidance reduces firm transparency, thus making it easier for executives to transfer corporate resources for their own benefit. Armstrong *et al.* (2015) point out the limitations in Desai and Dharmapala's (2006) study, in that incentive compensation itself is a monitoring mechanism endogenous with the goal of mitigating tax avoidance. Instead, they adopt a more traditional view that the governance mechanism would mitigate agency problems, including tax evasion.

The effective tax planning framework proposed by Scholes *et al.* (2002) states that, besides shareholders and managers, firms need to consider "all parties, all taxes, and all costs" when planning their tax avoidance. Stakeholders, especially creditors, might be the most important type of related party that corporations should take into consideration. A recent strand in the tax avoidance research has shifted its interest to how shareholder-creditor conflicts and tax avoidance interact with each other. This topic is of particular importance given that the anticipated benefits (real and financial) from tax avoidance largely belong to shareholders, while creditors, given their fixed claims on upside firm performance, assume most of the direct risks associated with tax avoidance (Hasan *et al.*, 2014). Moreover, compared with other external capital providers, creditors have privileged access to proprietary information, including tax return data, and are in a unique position in monitoring debtors' tax planning activity (Armstrong *et al.*, 2010; Minnis and Sutherland, 2017; Cook *et al.*, 2020). Several studies have examined how corporate tax avoidance influences the debtor-creditor relationship. Shevlin *et al.* (2020) document that firms' tax avoidance increases the cost of debt. Hasan *et al.* (2014) provide evidence that firms exhibiting more tax avoidance have a higher bank loan cost, indicating that banks perceive tax avoidance as engendering significant risk. Bonsall *et al.* (2017) investigate the role of tax avoidance in the credit-rating process and find that tax avoidance results in more frequent and pronounced rating agency disagreement. Isin (2018) shows that tax avoidance is positively related to loan spreads; however, tax-specific premiums disappear for (1) loans with a large number of co-leads that facilitate credit risk diversification, (2) loans with performance pricing provisions that facilitate borrower-lender incentive alignment, and (3) borrowers with CDS contracts that facilitate credit risk transfer. Overall, this strand of the tax literature concentrates mainly on how tax avoidance affects debt contracts.

Conversely, the debtor-creditor relationship would also affect tax avoidance. Cook *et al.* (2020) find that creditor interventions increase borrowers' tax avoidance, indicating that creditors play an active role in shaping corporate tax policy outside of bankruptcy. Kim *et al.* (2019) explore the initiation of CDS as a shock to the debtor-creditor relationship that attenuates the concavity of creditors' pay-off function and reduces creditors' incentives to closely monitor debtors. Kim *et al.* (2019) find that the inception of CDS trading on a borrower's outstanding debt is associated with an increase in a firm's tax avoidance.

With these two papers shedding light on creditors' role in shaping corporate tax planning

strategy, our paper uses the implementation of the first ALP as a potentially exogenous shock to the debtor-creditor relationship. Our analysis focuses on whether the increased creditor protection alters debtors' pay-off function and in turn affects borrowing firms' tax avoidance decisions.

2.3 Hypothesis Development

Creditors and shareholders have significantly different risk preferences and return expectations regarding firms' risky investments. Shareholders are residual claimants and keep all the residual profit if risky investments succeed. On the other side, as fixed claimants, creditors typically receive a fixed payment if risky investments succeed but can only partially recover their claims once a risky investment fails and the value of borrowing firm goes below the debt value.

Tax avoidance is perceived as a potentially value-enhancing but risk-engendering corporate activity (Rego and Wilson, 2012; Hasan *et al.*, 2014; Kim *et al.*, 2019). The most obvious benefit of tax avoidance is tax saving, and the potential tax saving from tax avoidance could be large. For instance, Mills *et al.* (1998) find that an additional \$1 investment in tax avoidance results in a \$4 reduction in tax liabilities. As such saving increases a firm's cash flow and after-tax net income, it can be expected to be in the interest of shareholders rather than creditors, who are fixed claimants (Desai and Dharmapala, 2006; Hasan *et al.*, 2014; Armstrong *et al.*, 2015; Blaylock, 2016; Austin and Wilson, 2017).

At the same time, tax avoidance is also a risky activity that increases the risk exposure of creditors by increasing information risk, operating risk, and audit risk (by tax authorities) (Hasan *et al.*, 2014). First, creditors are particularly keen on the timely disclosure of bad news that damages firm value, while tax avoidance enhances debtors' ability to mask, justify, and hide bad news for extended periods (Kim *et al.*, 2011). A higher level of tax avoidance exacerbates the information risk by decreasing firm earnings persistence (Hanlon and Slemrod, 2009) and increasing discretionary accruals, thus reducing the transparency of a firm's information environment (Frank *et al.*, 2009). Second, tax avoidance affects debt repayment capabilities by increasing operating risk. Bauer *et al.* (2020) find that the cash savings generated by tax planning are always arranged for related lending or for investment in tax-favoured but risky projects, instead of repaying debts. Thus, tax avoidance provides a channel for shareholders to facilitate the diversion of corporate resources at the expenses of creditors. Third, tax avoidance can be challenged by the tax authorities and potentially incur both direct and indirect costs. The direct costs mainly include significant cash outflows in the form of back taxes, fines, penalties, and interest (Lisowsky, 2010); for example, Wilson (2009) finds that the median tax saving is \$66.5 million while the median legal fees and penalties is \$64 million. The indirect costs include political costs and reputation damage (Graham *et al.*, 2014). As a result, the risk of being audited and punished by the tax authorities leads creditors to anticipate greater uncertainty in the firm's future cashflow. In sum, while creditors bear the

consequences of the higher information risk, operating risk, and audit risk caused by tax avoidance, they do not necessarily share the benefits. Accordingly, compared with shareholders and managers, creditors would prefer a lower level of tax avoidance.

Given shareholders' and creditors' different preferences with regard to tax planning, creditors' welfare is not usually taken seriously when firms are making risky decisions. The current business environment in most countries is identified as having strong shareholder rights, where directors' and managers' fiduciary duties require them to mainly act in accordance with shareholder interests or to primarily maximise shareholder value (Radhakrishnan *et al.*, 2018). In contrast, the benefit of creditors is often ignored or even injured by debtors' dishonest behaviours. Under the framework of shareholder-creditor conflicts, the monitoring power of creditors depends on the enforcement of debt contracts (Aghamoll and Li, 2018). Therefore, it is believed that China's "*Several Provisions of the Supreme People's Court on Restricting High Consumption of Judgment Debtors*" could significantly improve creditor protection by increasing debt contract enforcement. Given creditors' aversion to tax avoidance and their increased level of protection, we expect debtors to be more stakeholder oriented and to cut down their tax avoidance because of the increased default cost for debtors and the decreased monitoring cost for creditors.

First, increased creditor protection would decrease the level of tax avoidance by causing a greater default cost. To be specific, before the implementation of the ALP, the punishment for dishonest debtors was relatively weak. The low default cost encouraged directors and managers to make corporate decisions without giving serious thought to creditors' welfare. However, under stronger creditor protection, when credit default occurs and the borrowing firm refuses to repay all or part of its debts, not only the borrowing firm but also the persons in charge will be regarded as *laolai* and the high consumption of those natural persons will be closely supervised by multiple central government departments. As a result, borrowers' quality of life would be seriously injured in the case of default, and thus they would put more effort into lowering the debt risk.

As proved by academic research and anecdotal evidence, corporate tax avoidance could increase cash flow risk and the possibility of default. Take the Pearl River Enterprises Group (Pearl) as an example: Pearl was accused of tax evasion in a *tax treatment decision* in August 2020 and needed to pay 35.30 million yuan to the Guangdong Provincial Tax Service. However, according to its 2020 semi-annual report, Pearl's net increase in cash and cash equivalents is only around negative 3.95 million yuan and it has a debt repayment of around 161.54 million yuan, and the legal fees and penalties caused by tax avoidance are the main reason for the decrease in its profits. When the protection of creditors is relatively poor, corporations might as well conduct tax planning without worrying about the default cost. However, as creditor protection has become stronger in China since the enactment of the ALP, it is more rational for firms to lower the level of risky tax avoidance behaviour to prevent debt

default from happening.

Second, better creditor protection also decreases creditors' monitoring costs. Lenders with strengthened power could design more stringent debt covenants that decrease corporations' risk-taking behaviours, including tax planning. When a credit event happens, lenders become excessively tough in debt renegotiations if they are well protected (Subrahmanyam *et al.*, 2014). Stronger creditor rights help to lower the monitoring costs in renegotiations in times of technical default. To conclude, the ALP enhances contract enforcement, reduces the borrowing firm's incentive to undertake risky behaviours that creditors do not favour, and in turn decreases the borrowing firm's level of tax avoidance.

Nevertheless, it is also possible that increased creditor protection decreases creditors' incentives to monitor debtors and leads to more tax avoidance. Kim *et al.* (2019) find that after the initiation of CDS, creditors' cash flow risk is transferred and their incentives to monitor debtors decrease, and this is followed by a higher level of tax sheltering. Radhakrishnan *et al.* (2018) also argue that stakeholder orientation could mitigate agency costs as well as decrease the monitoring demand for timely accounting information. The implementation of the ALP can strengthen contractual enforcement and help creditors to collect their debts more efficiently when defaults occur, in which case creditors would be more tolerant towards debtors' risky behaviours and allow more tax avoidance.

On the basis of the analyses above, the ALP might be either positively or negatively associated with the level of tax avoidance, and hence we form the following hypothesis:

Hypothesis 1a: Creditor protection is negatively associated with corporate tax avoidance, *ceteris paribus*.

Hypothesis 1b: Creditor protection is positively associated with corporate tax avoidance, *ceteris paribus*.

III. Research Design

3.1 Data, Sample Selection, and Summary Statistics

We manually collect the number of *laolai* published on the website of the SPC for the period 2013 to 2016. We acquire the identity, financial statements, and other information of A-share firms from the CSMAR database. The number of registered enterprises is gathered from the National Bureau of Statistics of China. Our sample period is from 2003 to 2017.

Following prior research, we first delete observations with missing values and firms in the financial industry. Second, due to data availability, we delete firms registered in Liaoning Province. Third, we only keep consistent observations listed from before 2010 to the years thereafter. Our final sample consists of 13,723 firm-years from 1,460 firms. We winsorise all continuous variables at the 1% level to eliminate the influence of outliers.

3.2 Measure of Tax Avoidance

To triangulate our results, we use two main measures of tax avoidance. First, we follow Desai and Dharmapala (2006) and calculate the residual of tax-to-book differences which accruals cannot explain to construct the abnormal tax-to-book difference index (DDBTD). Second, we use the difference between the effective tax rate and the statutory tax rate to measure actual cash flow saved from tax rate avoidance. According to Ye *et al.* (2018), we can only distinguish the preferential taxation from tax avoidance after controlling for the statutory tax rate. The differences between the effective tax rate and the statutory tax rate help to isolate a firm's tax avoidance that is not caused by relational tax preference.

Following Manzon and Plesko (2002), Desai and Dharmapala (2006), and Wang (2014), we construct the first measure of DDBTD as follows:

$$BTD_{i,t} = (EBT_t - CTE_t / ATR_t) / TA_{t-1} \quad (1)$$

$EBT_{i,t}$ is the profit before tax of firm i in fiscal year t , $CTE_{i,t}$ is firm i 's income taxes and fees payable, $ATR_{i,t}$ is firm i 's statutory applicable income tax rate in fiscal year t , and $TA_{i,t-1}$ is firm i 's total asset in fiscal year $t-1$.

Then, we calculate the residual of model (2).

$$BTD_{i,t} = \alpha_1(TACC_{i,t} / TA_{i,t-1}) + \mu_i + \varepsilon_{i,t} \quad (2)$$

$TACC_{i,t}$ is the total accounting accruals computed as profit after tax excluding extraordinary items minus operating cashflow, μ_i is the average of estimated residual of firm i in our sample period, and $\varepsilon_{i,t}$ is the difference between predicted residual in year t and μ_i . Thus, we capture the abnormal tax-to-book difference index $DDBTD$ after controlling for the effect of accounting accruals, which equals $\mu_i + \varepsilon_{i,t}$. Controlling for firm fixed effect in model (2), we calculate the residual of this regression which proxies for variations of tax-to-book difference that cannot be explained by earnings management and tax sheltering activity. A lower value of the $DDBTD$ proxy implies less tax avoidance.

Following Dyreng *et al.* (2010), Hasan *et al.* (2014), and Lennox *et al.* (2013), we calculate the difference between the effective tax rate (ETR) and the statutory tax rate (ATR) to construct our second measure $RATE$. ETR is computed as income tax expense divided by profit before tax, ATR is the statutory tax rate in fiscal year t for firm i , and $RATE$ equals ATR minus ETR . A lower value of $RATE$ implies less tax avoidance.

3.3 DID Research Design

Previous studies show that the debtor-creditor relationship and tax avoidance could interact as both cause and effect. To examine how creditor protection affects tax avoidance and establish the causality, we use the implementation of the first ALP as an exogenous shock and employ a DID regression with firm fixed effects to mitigate endogeneity concerns. While all firms are affected by the ALP, we expect that firms in provinces with a severer dishonest environment are affected more significantly because they are more likely to become

judgement debtors without legal restraints (Dai *et al.*, 2019). We hand-collect the total number of *laolai* from 2013 to 2016 for each province (except for Liaoning Province due to lack of data) and use the number of registered enterprises in that province as a scaler to construct the ratio of *Laolai_ra*. Following Yang and Pan (2019) and Dai *et al.* (2019), we expect *Laolai_ra* to measure the “dishonest environment” in a province. Following Dai *et al.* (2019), we rank all provinces on the basis of the ratio of *laolai* year by year and then define firms located in provinces with a ratio above the median as the treatment group (*Treat* equals 1) and others as the control group (*Treat* equals 0).

Following Wang (2014), Aghamolla and Li (2018), and Ye *et al.* (2018), we use a DID regression method (model 3) to test our main hypotheses.

$$\begin{aligned} \text{Tax Avoidance} = & \beta_0 + \beta_1 \text{Treat} \times \text{Post} + \beta_2 \text{Controls} + \text{Firm Fixed Effect} \\ & + \text{Year Fixed Effect} + \xi \end{aligned} \quad (3)$$

In model (3), the dependent variable is one of the two tax avoidance measures: *DDBTD* and *RATE*. The independent variable we are interested in is *Treat* × *Post*. *Post* is an indicator variable which equals 1 for years after 2010 and 0 otherwise. If firms decrease (increase) their tax avoidance after the implementation of the ALP, then we would find coefficient β_1 to be significantly negative (positive), which would support H1a (H1b).

Following prior research, we include a set of control variables to ensure that our results are not driven by other factors that might be related with tax avoidance. Specifically, we include firm size (*Size*), leverage level (*Lev*), return on total assets (*ROA*), the percentage of property, plant, and equipment to total assets (*Capint*), the intensity of intangible assets (*Intang*), the percentage of inventory to total assets (*Invntnt*), the percentage of investment income to total assets (*Irtat*), market-to-book value (*MTB*), a dummy variable for loss firms (*Lloss*), and ownership (*SOE*). All the variables are described in the Appendix.

3.4 Summary Statistics

Table 1 reports the descriptive statistics for the full sample. Our final sample consists of 13,723 firm-years of 1,460 firms from 2003 to 2017. Panel A shows that 35.5% of the observations are in the treatment group and 64.5% are in the control group. Consistent with the results in previous studies, the mean and median of book-to-tax difference (*DDBTD*) are 0.01 and 0.007, respectively. The mean and median of *RATE* are 0.021 and 0.017, respectively, implying that most enterprises have a lower efficient tax rate than *ATR*. The descriptive statistics of the control variables are also consistent with those in existing studies.

Panel B divides our sample by treatment/control group and by time. As shown in Panel B, there is a clear downward trend of tax avoidance from *Pre-2010* (*DDBTD*=0.012, *RATE*=0.031) to *Post-2010* (*DDBTD*=0.009, *RATE*=0.020) in the treatment group but not in control group, indicating that firms operating in a severer dishonest environment lowered their level of tax avoidance after the enactment of the ALP.

Table 1 Descriptive Statistics

This table presents the descriptive statistics of our sample. Panel A presents summary statistics for the main variables of the full sample. All the variables are defined in the Appendix. Panel B presents the means of tax avoidance measures before and after 2010. The significance of the test of differences in the last two columns is based on a t-test for equality of means. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Firm Characteristics of Full Sample

Variable	Observations	Mean	Std. Dev.	25%	Median	75%
<i>DDBTD</i>	13,723	0.0100	0.0320	-0.0030	0.0070	0.0210
<i>RATE</i>	13,723	0.0210	0.1380	-0.0270	0.0170	0.0820
<i>Treat</i>	13,723	0.3550	0.4790	0.0000	0.0000	1.0000
<i>Size</i>	13,723	22.0730	1.2970	21.1400	21.9060	22.8280
<i>Lev</i>	13,723	0.3180	0.1630	0.1980	0.3160	0.4350
<i>ROA</i>	13,723	0.0490	0.0430	0.0180	0.0380	0.0670
<i>Capint</i>	13,723	0.2590	0.1810	0.1170	0.2270	0.3760
<i>Intang</i>	13,723	0.0440	0.0540	0.0100	0.0290	0.0560
<i>Invnt</i>	13,723	0.1780	0.1640	0.0680	0.1350	0.2270
<i>Irta</i>	13,723	0.0080	0.0180	0.0000	0.0010	0.0080
<i>MTB</i>	13,723	2.7240	2.0850	1.3880	2.0430	3.2590
<i>Lloss</i>	13,723	0.0050	0.0690	0.0000	0.0000	0.0000
<i>Soe</i>	13,723	0.5300	0.4990	0.0000	1.0000	1.0000

Panel B: Means of Tax Avoidance Measures before and after 2010

Variable	<i>Treat</i>			Control		
	Pre-2010	Post-2010	t-stat	Pre-2010	Post-2010	t-stat
<i>DDBTD</i>	0.0120	0.0090	0.003***	0.0100	0.0100	0.0000
<i>RATE</i>	0.0310	0.0200	0.011**	0.0110	0.0230	-0.0110***
N	2,150	2,725		3,697	5,151	

IV. Empirical Results

4.1 Main Empirical Results

Table 2 shows the DID regression results for testing H1a and H1b. We report the regression results without control variables in columns 1 and 2 and include the full set of control variables in columns 3 and 4. All the t-statistics have been adjusted for heteroskedasticity and firm-level clustering. The dependent variable is *DDBTD* in columns 1 and 3 and *RATE* in columns 2 and 4. In columns 1 and 2 where control variables are not included, the key variable of interest *Treat*×*Post* is insignificantly negatively related to *DDBTD* and significantly negatively related to *RATE*. These findings suggest that compared with firms in a less severe dishonesty culture, firms in a severer dishonest environment tend to have a lower level of tax avoidance.

In columns 3 and 4 where we include all the control variables, the coefficients on *Treat*×*Post* are significantly negatively related to *DDBTD* (-0.003, *t-statistics*= -2.12) and *RATE* (-0.018, *t-statistics*= -2.68). Given that the mean value of *DDBTD* is 0.010, the findings in columns 3 and 4 indicate that the impact of creditor protection on decreasing tax avoidance

is also economically significant: After the implementation of the ALP, firms in provinces with a severer dishonest environment experience a decrease in the difference between the effective tax rate and the statutory tax rate of around 30% ($0.003/0.010=30\%$). To summarise, the findings in columns 3 and 4 are consistent with those in columns 1 and 2, suggesting that the implementation of the ALP reduces the level of corporate tax avoidance in the treatment group.

Table 2 Increased Creditor Protection and Tax Avoidance

This table presents the coefficient estimations of regression in model (3). All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t-statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	(1) <i>DDBTD</i>	(2) <i>RATE</i>	(3) <i>DDBTD</i>	(4) <i>RATE</i>
<i>Treat</i>×<i>Post</i>	-0.002	-0.017**	-0.003**	-0.018***
	(-1.412)	(-2.374)	(-2.12)	(-2.68)
<i>Size</i>			-0.001	-0.004
			(-1.02)	(-0.89)
<i>Lev</i>			0.009***	-0.003
			(2.59)	(-0.21)
<i>ROA</i>			0.262***	0.508***
			(15.08)	(10.18)
<i>Capint</i>			0.006	0.033*
			(1.40)	(1.74)
<i>Intang</i>			-0.010	-0.025
			(-0.99)	(-0.53)
<i>Invntnt</i>			-0.008*	-0.054**
			(-1.76)	(-2.43)
<i>Irta</i>			0.160***	0.648***
			(5.21)	(6.18)
<i>MTB</i>			-0.000	0.001
			(-1.10)	(1.06)
<i>Lloss</i>			-0.002	-0.038
			(-0.54)	(-1.63)
<i>SOE</i>			0.000	0.003
			(0.36)	(0.53)
Constant	0.009***	0.006	0.013	0.052
	(8.000)	(1.018)	(0.68)	(0.62)
Year Fixed Effect	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes
Observations	13,723	13,723	13,723	13,723
Adjusted R ²	0.008	0.008	0.117	0.041

The coefficients estimated on the control variables are generally consistent with prior literature (Wang, 2014; Liu *et al.*, 2017). For example, the coefficient on firm leverage (*Lev*) is significantly positive, suggesting that firms with higher leverage are associated with more tax avoidance. The coefficient on the intensity of inventory (*Invntnt*) is significantly negative, implying that the intensity of inventory would discourage firms' tax avoidance behaviour. The

coefficients on profitability (*ROA*) and investment (*Irta*) are both significantly positive, indicating that firms with higher profitability tend to engage in more tax avoidance. In sum, our main findings in Table 2 support H1a that creditor protection is negatively associated firm's tax avoidance.

4.2 Robustness Tests

4.2.1 Testing for the parallel trend assumption using a dynamics effects model

Considering that firms in the treatment group might differ from firms in the control group, which could threaten the parallel trend assumption critical to our DID research design, we follow Bertrand and Mullainathan (2003) and adopt a dynamic effects model to address this concern. In short, if there is a predetermined trend, then we would expect a decrease in tax avoidance for the treatment group before the implementation of the ALP; otherwise, if we do not observe any significant differences between the treatment and control groups in terms of tax avoidance before the implementation of the ALP, then the parallel trend assumption should be supported.

Empirically, we put four year indicators—*Before*, *Conduct*, *After1*, and *After2*—into model (3). *Before* equals 1 if observations are between 2004 and 2009 and 0 otherwise. *Conduct* equals 1 if observations are in 2010 and 0 otherwise. *After1* equals 1 if observations are between 2011 and 2012 and 0 otherwise. *After2* equals 1 if firm observations are in 2013 and afterwards and 0 otherwise. These indicators allow us to evaluate whether there is a decrease trend in tax avoidance prior to the implementation of the ALP.

The results of the parallel trend test are presented in Table 3. First, the coefficient on *Before*×*Treat* is insignificantly different from zero in both column 1 (-0.002, *t-statistics*= -1.12) and column 2 (-0.013, *t-statistics*= -1.03), suggesting that there is no clear pre-trend in the treatment group's tax avoidance before the implementation of the ALP. Second, the coefficient on *Conduct*×*Treat* is significantly negative (at 5% level) in both column 1 (-0.005, *t-statistics*= -2.00) and column 2 (-0.032, *t-statistics*= -2.23), suggesting that the effect occurs around the implementation of the ALP. Third, the coefficients on *After1*×*Treat* and *After2*×*Treat* are also significantly negative. In column 1, the coefficient on *After1*×*Treat* is significant at the 1% level (-0.007, *t-statistics*= -2.94) and the coefficient on *After2*×*Treat* is significant at the 10% level (-0.004, *t-statistics*= -1.67). In column 2, the coefficient on *After1*×*Treat* is -0.032 (*t-statistics*= -2.08) and the coefficient on *After2*×*Treat* is -0.028 (*t-statistics*= -2.01), both significant at the 5% level.

Above all, the above findings from the dynamic effects models basically prove that our main findings in Table 2 are not driven by predetermined trends and support a causal effect of increasing creditor protection and decreased tax avoidance. Moreover, the significant coefficients on *After2*×*Treat* in columns 1 and 2 indicate that the negative impact of the ALP on tax avoidance is not temporary.

Table 3 Parallel Trend Test

This table presents the regression results for the parallel trend test. *Before* takes the value of 1 if observations are between 2004 and 2009 and 0 otherwise. *Conduct* equals 1 if firm observations are in 2010 and 0 otherwise. *After1* equals 1 if firm observations are between 2011 and 2012 and 0 otherwise. *After2* equals 1 if firm observations are in 2013 and afterwards and 0 otherwise. All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t-statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	(1) <i>DDBTD</i>	(2) <i>RATE</i>
<i>Treat</i> × <i>Before</i> (Year 2004-2009)	-0.002 (-1.12)	-0.013 (-1.03)
<i>Treat</i>×<i>Conduct</i> (Year 2010)	-0.005** (-2.00)	-0.032** (-2.23)
<i>Treat</i>×<i>After1</i> (Year 2011-2012)	-0.007*** (-2.94)	-0.030** (-2.08)
<i>Treat</i>×<i>After2</i> (Year 2013-2017)	-0.004* (-1.67)	-0.028** (-2.01)
<i>Size</i>	-0.001 (-1.02)	-0.003 (-0.88)
<i>Lev</i>	0.009*** (2.63)	-0.003 (-0.20)
<i>ROA</i>	0.262*** (15.12)	0.510*** (10.19)
<i>Capint</i>	0.006 (1.40)	0.034* (1.75)
<i>Intang</i>	-0.010 (-0.99)	-0.025 (-0.53)
<i>Invnt</i>	-0.008* (-1.75)	-0.054** (-2.43)
<i>Irta</i>	0.160*** (5.22)	0.647*** (6.18)
<i>MTB</i>	-0.000 (-1.06)	0.001 (1.07)
<i>Lloss</i>	-0.002 (-0.52)	-0.038 (-1.63)
<i>SOE</i>	0.000 (0.39)	0.003 (0.54)
Constant	0.013 (0.68)	0.050 (0.60)
Year Fixed Effect	Yes	Yes
Firm Fixed Effect	Yes	Yes
Observations	13,723	13,723
Adjusted R ²	0.117	0.041

4.2.2 Test to exclude the influence of other policies

Since aggressive tax evasion is detrimental to social welfare and clamped down on by central and local government, it may be directly affected by other policies promulgated by the tax authorities. In 2014, China's State Administration of Taxation announced a joint

punishment for dishonest tax behaviours and promulgated 18 steps to penalise illegal tax evasion. In 2018, China's State Administration of Taxation officially promulgated *Information Disclosure Measures for Major Tax Violations and Dishonesty Cases*, in which nine types of dishonest tax behaviours are defined as cases of dishonesty, including taxpayers "who forge, alter, conceal or destroy account books and accounting vouchers without authorisation, overstate expenditures or fail to list or under-list income in the account books, refuse to declare or make false tax declaration after being informed by the tax authorities"; taxpayers who "fail to pay or underpay more than 1 million yuan of tax payable"; and taxpayers whose "nonpayment or underpayment of the payable tax account for 10% of the total amount of tax payable in the current year".

Table 4 Excluding the Influence of Other Policies

This table presents the regression results of model (3) after excluding the influence of other policies. All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t-statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	(1) <i>DDBTD</i>	(2) <i>RATE</i>
<i>Treat</i> × <i>Post</i>	-0.005*** (-2.81)	-0.020*** (-2.73)
<i>Size</i>	-0.003** (-2.12)	-0.012** (-2.32)
<i>Lev</i>	0.007* (1.73)	-0.008 (-0.42)
<i>ROA</i>	0.256*** (12.16)	0.551*** (9.06)
<i>Capint</i>	0.004 (0.92)	0.035 (1.51)
<i>Intang</i>	-0.009 (-0.81)	-0.027 (-0.51)
<i>Invnt</i>	-0.003 (-0.63)	-0.033 (-1.27)
<i>Irta</i>	0.181*** (4.80)	0.692*** (5.58)
<i>MTB</i>	-0.001* (-1.67)	0.000 (0.07)
<i>Lloss</i>	-0.005 (-1.20)	-0.041 (-1.53)
<i>SOE</i>	0.002 (1.28)	0.002 (0.18)
Constant	0.050* (1.88)	0.228** (2.11)
Year Fixed Effect	Yes	Yes
Firm Fixed Effect	Yes	Yes
Observations	10,373	10,373
Adjusted R ²	0.109	0.044

To exclude the influences of policies aimed at tax avoidance published after 2014, we reconduct the main DID test in model (3) with observations after 2014 omitted. The results in Table 4 show that the coefficient on $Treat \times Post$ is still significantly negative (at the 1% level) in both column 1 (-0.005, t -statistics= -2.81) and column 2 (-0.020, t -statistics= -2.73), suggesting that our main findings are not caused by policies other than the ALP in 2010.

4.2.3 Alternative tax avoidance measures

We use two alternative tax avoidance measures to determine whether our main findings are sensitive to the way we measure tax avoidance. First, following Chen *et al.* (2016), we calculate effective tax rate (ETR) as current income tax expense divided by total profit before tax. A lower value of ETR implies less tax aggressive behaviour. Then, we estimate model (3)

Table 5 Alternative Measures of Tax Avoidance

This table presents the regression results of model (3) with alternative measures of tax avoidance. All the variables are defined in Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t -statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	(1) ETR	(2) $TA\ Gaap$
$Treat \times Post$	0.015** (2.07)	-0.018** (-2.251)
ATR	0.346*** (9.66)	-0.124*** (-3.115)
$Size$	-0.000 (-0.12)	0.009** (2.142)
Lev	0.013 (0.74)	0.029 (0.968)
ROA	-0.838*** (-14.02)	0.177*** (3.154)
$Capint$	-0.023 (-1.15)	-0.000 (-0.021)
$Intang$	-0.028 (-0.60)	0.023 (0.455)
$Invnt$	0.051** (2.24)	-0.069*** (-3.170)
Irt	-0.516*** (-4.54)	-0.020 (-0.130)
MTB	-0.002* (-1.74)	-0.000 (-0.257)
$Lloss$	0.072*** (2.73)	-0.145*** (-3.412)
SOE	0.005 (0.78)	-0.005 (-0.492)
Constant	0.187** (2.10)	-0.183* (-1.946)
Year Fixed Effect	Yes	Yes
Firm Fixed Effect	Yes	Yes
Observations	13,723	13,856
Adjusted R ²	0.078	0.009

with *ATR* controlled, and the results are presented in Table 5. Consistent with our main findings in Table 2, the coefficient on *Treat*×*Post* in column 1 is 0.015 (*t-statistics*= -2.07) and significant at the 5% level.

Second, we follow Balakrishnan *et al.* (2019) to define tax avoidance as the difference between firm *ETR* (*TA_Gaap*) and mean *ETR* within the same industry and size portfolio to eliminate the impacts of industry-specific characteristics and firm complexity. A smaller value of *TA_Gaap* reflects a lower level of tax avoidance. We replace the dependent variable in the DID model with *TA_Gaap* and find a significantly negative coefficient on *Treat*×*Post* (-0.018, *t-statistics*= -2.25). Overall, the findings in Table 5 indicate that the negative relation between increased creditor protection and decreased tax avoidance shown in Table 2 is robust to the use of alternative tax avoidance proxies.

V. Further Test: Cross-sectional Analysis

5.1 Cross-sectional Effect of Credit Default Risk

Our prediction on the negative relation between the implementation of the ALP and tax avoidance is based on the premise that ALP implementation enhances creditor protection and thus increases the marginal cost of tax avoidance to borrowing firms. Under this premise, we expect that the impact of the ALP on decreasing tax avoidance is more pronounced when the debtor-creditor relationship is characterised by a higher credit default risk prior to the implementation of the ALP. Firms with a higher credit default risk are more likely to default and thus are more vulnerable to increased default cost and creditor monitoring. As a result, these firms are more likely to become creditor oriented and lower their level of tax avoidance after the implementation of the ALP. To this end, we use firm leverage and profit volatility as proxies for borrowing firms' default risk to test the cross-sectional effect of credit default risk.

5.1.1 Credit default risk captured by firm leverage

The higher a firm's financial leverage, the higher its credit default risk (Delianedis and Geske, 1998; Cheng and Ren, 2007). Thus, we expect that firms with higher leverage are more likely to default and to decrease their tax avoidance after the implementation of the ALP. To test this conjecture, we divide our sample into two subsamples on the basis of firm leverage and estimate model (3) for each subsample. Table 6 shows that the coefficient on *Treat*×*Post* is significantly negative (at the 1% level) in both column 1 (-0.006, *t-statistics*= -4.18) and column 3 (-0.029, *t-statistics*= -4.13) for firms with high leverage. For low leverage firms, however, the coefficient is not significant in either column 2 or column 4. The differences between the estimated coefficients in two subsamples are statistically significant (at the 10% level). These results suggest that the effect of ALP implementation on decreasing tax avoidance is more pronounced for firms with a higher default risk measured by debt leverage.

Table 6 Financial Leverage, Creditor Protection, and Tax Avoidance

This table presents the regression results of model (3) in the subsamples divided by financial leverage. All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t-statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	DDBTD		RATE	
	(1) <i>High Lev</i>	(2) <i>Low Lev</i>	(3) <i>High Lev</i>	(4) <i>Low Lev</i>
<i>Treat</i> × <i>Post</i>	-0.006*** (-4.18)	-0.000 (-0.29)	-0.029*** (-4.13)	-0.007 (-1.13)
<i>Size</i>	-0.000 (-0.24)	-0.001 (-1.20)	-0.007* (-1.80)	-0.003 (-0.78)
<i>ROA</i>	0.297*** (26.78)	0.224*** (21.31)	0.640*** (11.35)	0.385*** (8.72)
<i>Capint</i>	0.004 (0.98)	0.008** (2.01)	0.024 (1.20)	0.042** (2.50)
<i>Intang</i>	-0.011 (-1.11)	-0.008 (-0.83)	0.009 (0.18)	-0.049 (-1.21)
<i>Invtnt</i>	-0.011*** (-2.58)	-0.005 (-0.99)	-0.046** (-2.14)	-0.069*** (-3.58)
<i>Irta</i>	0.116*** (4.89)	0.195*** (7.95)	0.652*** (5.39)	0.579*** (5.61)
<i>MTB</i>	-0.000* (-1.83)	-0.000 (-1.43)	-0.000 (-0.14)	0.000 (0.48)
<i>Lloss</i>	-0.001 (-0.16)	-0.004 (-0.73)	-0.072*** (-3.09)	-0.006 (-0.28)
<i>SOE</i>	-0.001 (-0.56)	0.001 (0.84)	-0.000 (-0.03)	0.005 (0.93)
Constant	0.002 (0.12)	0.016 (0.98)	0.129 (1.48)	0.038 (0.54)
Year Fixed Effect	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes
Observations	6,715	6,888	6,715	6,888
Adjusted R ²	0.143	0.111	0.051	0.037
<i>P value</i>	0.0786*		0.0977*	

5.1.2 Credit default risk captured by profit volatility

The dispersion degree of a company's financial performance reflects the deviation between the company's operating performance and normal performance level (Li *et al.*, 2009). Firms with higher profit volatility are often accompanied by higher operational risk (Adams *et al.*, 2005), which leads to a higher credit default risk. As a result, we expect that firms with higher profit volatility are more likely to decrease their tax avoidance after the implementation of the ALP.

To test this conjecture, we divide our sample into two subsamples on the basis of profit volatility. Observations with a standard deviation of ROA prior to ALP implementation above the median make up the high profit volatility subsample, and the other observations make up the low profit volatility subsample. The results in Table 7 show that the coefficient on

$Treat \times Post$ is significant at the 1% level in both column 1 (-0.006, t -statistics = -3.38) and column 3 (-0.025, t -statistics = -3.56) for high volatility firms. The coefficients on $Treat \times Post$ are not significant in the low profit volatility group (column 3 and column 4). The difference between the estimated coefficients on $Treat \times Post$ in columns 1 (3) and 2 (4) is statistically significant at the 5% (10%) level. The results in Table 8 suggest that firms with a greater credit default risk captured by profit volatility are more vulnerable to increased creditor protection and reduce their tax avoidance more significantly after the implementation of the ALP.

Table 7 Profit Volatility, Creditor Protection, and Tax Avoidance

This table presents the regression results of model (3) in the subsamples divided by profit volatility. All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t -statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	DDBTD		RATE	
	(1) High Volatility	(2) Low Volatility	(3) High Volatility	(4) Low Volatility
$Treat \times Post$	-0.006*** (-3.38)	0.001 (0.95)	-0.025*** (-3.56)	0.000 (0.02)
Size	-0.004*** (-3.71)	-0.002** (-2.10)	-0.004 (-0.97)	-0.000 (-0.09)
Lev	0.011** (2.04)	0.001 (0.21)	-0.030 (-1.57)	-0.020 (-0.92)
ROA	0.245*** (17.77)	0.263*** (16.90)	0.353*** (7.05)	0.730*** (8.39)
Capint	0.010* (1.87)	-0.003 (-0.63)	0.036* (1.76)	-0.010 (-0.41)
Intang	-0.032** (-2.33)	0.010 (0.95)	-0.118** (-2.37)	-0.023 (-0.40)
Invtnt	-0.011* (-1.66)	0.002 (0.35)	-0.073*** (-3.11)	-0.022 (-0.89)
Irtat	0.128*** (4.00)	0.131*** (4.91)	0.236** (2.03)	0.883*** (5.90)
MTB	-0.001** (-2.14)	-0.000 (-1.15)	0.004*** (2.72)	0.001 (0.37)
Lloss	-0.001 (-0.16)	-0.007 (-1.57)	0.002 (0.07)	-0.071*** (-2.77)
SOE	0.001 (0.47)	0.002 (1.17)	0.012* (1.66)	0.003 (0.45)
Constant	0.087*** (3.43)	0.039** (2.01)	0.087 (0.95)	-0.023 (-0.21)
Year Fixed Effect	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes
Observations	4,451	4,562	4,451	4,562
Adjusted R ²	0.129	0.106	0.055	0.053
P _value	0.0255**		0.0853*	

5.2 The Influence of Executives' Credit Default Cost

The ALP increases borrowing firms' credit default cost by punishing both *laolai* firms and the related natural persons (enterprise's legal representative, principal person in charge, person directly responsible for affecting debt performance, and controlling shareholder). In non-SOEs, the related natural persons are usually also *laolai* firms' major shareholders, who share the benefits from tax saving. However, in SOEs, the related natural persons are mostly pure agents, who have less claim on benefits from tax saving but still suffer from the high consumption restrictions when companies are defined as *laolai*. Therefore, from the aspect of cost benefit analysis, we expect that SOEs are more affected by the increased creditor protection caused by the ALP and reduce their tax avoidance.

Table 8 Ownership, Creditor Protection, and Tax Avoidance

This table presents the regression results of model (3) in the subsamples divided by ownership. All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t-statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	DDBTD		RATE	
	(1) SOEs	(2) Non-SOEs	(3) SOEs	(4) Non-SOEs
<i>Treat</i> × <i>Post</i>	-0.004*** (-3.30)	-0.003 (-1.62)	-0.022*** (-3.89)	-0.013 (-1.54)
<i>Size</i>	-0.002** (-2.01)	-0.000 (-0.24)	-0.003 (-0.94)	-0.004 (-1.02)
<i>Lev</i>	0.005 (1.43)	0.015*** (3.73)	-0.001 (-0.04)	0.005 (0.26)
<i>ROA</i>	0.209*** (20.73)	0.326*** (25.61)	0.515*** (10.54)	0.453*** (8.28)
<i>Capint</i>	0.002 (0.67)	0.013** (2.29)	0.012 (0.76)	0.068*** (2.81)
<i>Intang</i>	-0.009 (-1.15)	-0.006 (-0.42)	-0.050 (-1.27)	0.053 (0.90)
<i>Invnt</i>	-0.001 (-0.34)	-0.013** (-2.57)	-0.050** (-2.40)	-0.072*** (-3.24)
<i>Irta</i>	0.257*** (11.43)	0.057** (2.11)	0.869*** (7.99)	0.359*** (3.08)
<i>MTB</i>	-0.000 (-0.94)	-0.000 (-1.58)	-0.001 (-0.62)	0.001 (0.78)
<i>Lloss</i>	-0.000 (-0.03)	-0.005 (-0.76)	-0.040** (-2.09)	-0.031 (-1.07)
Constant	0.029* (1.80)	-0.005 (-0.24)	0.061 (0.78)	0.078 (0.86)
Year Fixed Effect	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes
Observations	8,614	5,094	8,614	5,094
Adjusted R ²	0.105	0.164	0.047	0.037
<i>P_value</i>		0.8331		0.5340

To test this conjecture, we divide our sample into SOEs and non-SOEs on the basis of ownership. In Table 8, the coefficient on $Treat \times Post$ is -0.004 (t -statistics = -3.30) in column 1 and -0.022 (t -statistics = -3.89) in column 3, both significant at the 1% level in the SOE group. However, in the non-SOE group (columns 2 and 4), the coefficients on $Treat \times Post$ are not significant. These results show that the pure agent status of SOE executives makes them more sensitive to the high consumption restrictions and more likely to reduce tax avoidance.

5.3 The Influence of Tax Collection Intensity

Desai *et al.* (2007) state that a strong tax authority can provide additional supervision to corporate insiders to reduce the level of tax avoidance. In provinces with stronger tax collection intensity, corporations face a higher risk of being detected and punished for tax avoidance behaviour, which would make tax avoidance even less favourable to creditors.

Table 9 Intensity of Tax Collection, Creditor Protection, and Tax Avoidance

This table presents the regression results of model (3) in the subsamples divided by intensity of tax collection. All the variables are defined in the Appendix. Year and firm fixed effects are included in all the regressions. Numbers in parentheses are t -statistics based on standard errors clustered by firm. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	DDBTD		RATE	
	(1) High Intensity	(2) Low Intensity	(3) High Intensity	(4) Low Intensity
<i>Treat</i> × <i>Post</i>	-0.006*** (-3.64)	-0.002 (-1.36)	-0.035*** (-5.29)	-0.008 (-1.27)
<i>Size</i>	-0.002** (-2.51)	0.000 (0.19)	-0.003 (-0.74)	-0.004 (-1.03)
<i>Lev</i>	0.012*** (2.99)	0.007** (2.17)	0.037** (2.10)	-0.031* (-1.89)
<i>ROA</i>	0.257*** (20.33)	0.267*** (25.77)	0.557*** (10.18)	0.485*** (9.55)
<i>Capint</i>	0.002 (0.54)	0.007** (1.98)	0.032* (1.67)	0.035** (2.02)
<i>Intang</i>	-0.003 (-0.30)	-0.013 (-1.51)	-0.062 (-1.24)	0.004 (0.10)
<i>Invtnt</i>	-0.011** (-2.20)	-0.006 (-1.42)	-0.062*** (-2.92)	-0.050** (-2.55)
<i>Irta</i>	0.123*** (4.32)	0.185*** (8.44)	0.709*** (5.77)	0.620*** (5.77)
<i>MTB</i>	0.000 (0.44)	-0.001** (-2.50)	0.002* (1.84)	0.000 (0.21)
<i>Lloss</i>	0.003 (0.58)	-0.007 (-1.46)	-0.012 (-0.56)	-0.062*** (-2.72)
<i>SOE</i>	0.002 (1.04)	-0.000 (-0.18)	0.012* (1.91)	-0.004 (-0.60)
Constant	0.042** (2.14)	-0.009 (-0.55)	0.021 (0.24)	0.071 (0.91)
Year Fixed Effect	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes
Observations	5,956	7,767	5,956	7,767
Adjusted R ²	0.109	0.134	0.053	0.041
<i>P value</i>		0.2315		0.0551

Therefore, we expect that firms located in provinces with a strong tax authority would reduce their tax avoidance more significantly after creditor protection is increased.

To test this conjecture, we follow Mertens (2003) and Jiang (2013) to calculate the intensity of tax collection and divide our sample on the basis of this factor. The results in Table 9 show that the coefficient on $Treat \times Post$ is significant at the 1% level in both column 1 (-0.006, t -statistics = -3.64) and column 3 (-0.035, t -statistics = -5.29) for firms facing a higher intensity of tax collection. The coefficient on $Treat \times Post$ is insignificant in both column 2 (-0.002, t -statistics = -1.36) and column 4 (-0.008, t -statistics = -1.27) for firms facing a lower intensity of tax collection. The difference between the coefficients in column 3 and column 4 is statistically significant at the 10% level. The results in Table 9 prove that the impact of increased creditor protection on decreasing tax avoidance is more pronounced when there is higher audit risk for borrowing firms' tax avoidance.

VI. Conclusion

Prior studies have examined how the benefits for shareholders from tax saving and shareholder-manager conflicts affect corporations' tax avoidance decisions. With increasing attention being paid to corporate stakeholders, especially creditors, there is call for research on the interaction between the debtor-creditor relationship and tax planning. However, this strand of tax studies mainly focuses on tax avoidance's credit market consequences, and to date only a little is known about how the debtor-creditor relationship affects tax avoidance due to the potential reverse causality problem.

To this end, our paper utilises a quasi-natural experiment which provides an exogenous shock to creditor protection in China. Specifically, in 2010, the SPC enforced the first ALP and prohibited *laolai* from engaging in high consumption behaviours. These restrictions seriously hurt the convenience and quality of life of *laolai*, thus significantly strengthening creditor protection and causing debtors to be more creditor oriented. Following Kim *et al.* (2019), we use a DID method to examine the impact of creditor protection on corporate tax avoidance. We expect that firms located in provinces with a severer dishonest environment are more affected because prior to the implementation of the ALP, the non-legal protection for creditors used to be weaker in those provinces. As a result, we identify firms in provinces with more (fewer) announced *laolai* as the treatment group (control group) and examine the heterogeneous treatment effects between these treatment and control groups.

Our results show that the increased creditor protection reduces corporate tax avoidance significantly. Cross-sectional tests show that only firms with a higher credit default risk (higher financial leverage or higher profit volatility) experienced a significant decrease in tax avoidance after creditor protection increased. Furthermore, increased creditor protection has significant downside effects on tax avoidance in SOEs rather than in non-SOEs because the pure agent status of SOE executives makes them more sensitive to constraints targeting *laolai*.

Additional tests also reveal that only firms located in provinces with strong tax collection enforcement are significantly affected by the ALP, proving the importance of law enforcement in creditor protection.

Our paper not only adds to the literature on the determinants of corporate tax planning but also provides new evidence on the economic consequences of creditor protection. Moreover, this paper sheds new light on the economic consequences of the ALP and the achievements in China's efforts to raise the honesty level of the whole of Chinese society.

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Appendix: Variable Definitions

Variable Name	Definition
<u>Dependent Variable</u>	
<i>DDBTD</i>	Following Desai and Dharmapala (2006), we first use model (1) to calculate the difference between the taxable profit and the accounting profit before tax (<i>BT</i> <i>D</i>). Then, we establish regression model (2), which includes the index of accounting accruals. <i>DDBTD</i> is the residual from regression model (2) which represents the component of <i>BT</i> <i>D</i> that cannot be explained by variations in total accruals.
<i>RATE</i>	Following Wang (2014), we compute the effective tax rate as income tax expense divided by profit before tax (<i>ET</i> <i>R</i>). <i>RATE</i> equals statutory tax rate (<i>AT</i> <i>R</i>) minus effective tax rate (<i>ET</i> <i>R</i>).
<u>ALP Variable</u>	
<i>Treat</i>	A dummy variable that equals 1 if <i>Laolai_ra</i> in a province is higher than the median value and 0 otherwise. <i>Laolai_ra</i> is measured as the number of <i>laolai</i> in each province published by the SPC divided by the number of registered enterprises in that province from 2013 to 2016.
<i>Post</i>	A dummy variable that takes the value of 1 for years after 2010 and 0 otherwise.
<u>Control Variables</u>	
<i>SOE</i>	A dummy variable that equals 1 if the firm is state owned and 0 otherwise
<i>LSize</i>	Natural logarithm of total assets of the company
<i>Lev</i>	Total debt divided by total assets
<i>ROA</i>	Ratio of net profit to average assets
<i>Capint</i>	Proportion of net fixed assets to total assets
<i>Intang</i>	Proportion of intangible assets to total assets
<i>Invtnt</i>	Proportion of inventory to total assets
<i>Irta</i>	Proportion of investment income to total assets
<i>MTB</i>	Market value divided by the book value
<i>Lloss</i>	A dummy variable that equals 1 if the net profit in the previous year is negative and 0 otherwise.
<u>All Other Variables</u>	
<i>ETR</i>	Measured as current income tax expense divided by total profit before tax
<i>TA_Gaap</i>	We follow Balakrishnan <i>et al.</i> (2019) and define tax avoidance as the difference between firm <i>ETR</i> and mean <i>ETR</i> within the same industry and size portfolio to eliminate the impacts of industry-specific characteristics and firm complexity.
<i>Profit Volatility</i>	The standard deviation of return on assets fluctuation 3 years prior to ALP implementation.
<i>Tax Collection Intensity</i>	Following Mertens (2003) and Jiang (2013), we use ordinary least squares estimation with several econometric specifications to determine predicted tax capacity.