Tax enforcement and corporate donations: evidence from Chinese ‘Golden Tax Phase III’

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ABSTRACT
Using the implementation of “Golden Tax Phase III” as a quasi-natural experiment, we take the difference-in-differences (DID) method to examine how changes in taxation technology affect firm donations. Specifically, “Golden Tax Phase III” has reduced the donation level of private enterprises (−21.6%). Moreover, the treatment effect is particularly pronounced in regions with low taxation capacity and enterprises with high tax avoidance. Additional tests show that enhanced tax enforcement decreases rent-seeking donations rather than squeezes out market-oriented donations, and the reduction of donations is not due to the deterioration of cash flow capacity. Overall, these results suggest that the improvement of taxation technology will restrict rent-seeking behaviour and regulate the corporate social responsibility activities of the enterprises. This study not only enriches the relevant research on tax enforcement and corporate social responsibility but also emphasises the significant impact of information infrastructure construction.

KEYWORDS
Tax enforcement; corporate donation; “Golden Tax Phase III” project; corporate social responsibility; implicit contract

1. Introduction

Corporate donation is a voluntary corporate social responsibility behaviour, while tax payment is a mandatory social responsibility imposed by law on corporations. It has been controversial in the existing literature whether corporate social responsibility and tax payment act as complements or substitutes. Based on altruism theory, Lanis and Richardson (2012, 2015) and Hoi et al. (2013) suggested that corporate social responsibility and tax payment are complementary. The logic behind this complement relationship is that more corporate donations indicate a stronger sense of corporate social responsibility. This sense of responsibility will also be reflected in their fulfilment of tax responsibility. In contrast, Davis et al. (2016) and Col and Patel (2019) found a substituted relationship between CSR and tax payment means socially responsible firms are more likely to conduct tax avoidance activities. From the perspective of institutional rent-seeking, Li et al. (2016) also found that donated enterprises undertake less tax payment. The more corporate donation, the more tax avoidance. They describe this phenomenon as “Donation in exchange for Tax”.

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The above literature examines the relationship between voluntary corporate social responsibility and mandatory tax payment in respect of corporate culture, legal environment, and institutional corruption. These studies documented the relationship between corporate social responsibility and tax payment varies depending on those soft environments. Nevertheless, how soft culture and institutions work depends on the hardware environment. The tax administration information system is the most important hardware facility for government tax enforcement. Extant literature overlooks the impact of tax administration information technology, which directly affects government incentives to collect tax and corporate incentives to avoid tax, and thus influences the way companies decide to fulfill their social responsibility. The implicit contract of “Donation in exchange for Tax” between enterprises and the government is probably derived from tax administration information technology deficiency. If our paper examines how tax administration information technology changes affect corporate donation, it will provide a clearer understanding of the relationship between corporate donation and tax avoidance. The “Golden Tax III” project implemented in China in recent years provides a natural experiment to examine this issue.

In recent years, with the development of big data, cloud computing, and other information technologies, Chinese taxation authorities have widely applied these latest technologies to the “Golden Tax III” project, which has significantly improved the ability to supervise tax-related information of enterprises and theoretically increased the cost and risk of tax avoidance for enterprises. The government gradually implemented this new tax administration system in various provinces, which provides a natural experiment for this paper to test how changes in tax administration information technology affect corporate donations and explore the underlying motivation. The complicated motives of corporate donations easily mislead socially responsible investors, undermine business ethics and morality, and ruin the business culture environment. Using “Golden Tax III” as an experiment to study this issue has some advantages. On the one hand, it can better identify the true motives of corporate donations and regulate CSR behaviours; On the other hand, the quasi-natural experiment of exogenous shocks can solve the endogenous problems and thus obtain more robust and reliable conclusions.

Chinese enterprises have a strong incentive to avoid taxes (Fan & Tian, 2013; Liu et al., 2017). The anti-tax avoidance work of the State Administration of Taxation alone contributed up to 53.2 billion yuan for Chineses government in 2014.1 Enterprises will cover their tax avoidance behaviours through various methods to reduce the possibility of tax inspection. The donation has been proved to be a useful tool for enterprises to rationalise their tax avoidance behaviours (Li et al., 2016). From the government’s perspective, taxation is to fund the provision of public goods in society, while corporate donations can also provide support for the provision of public goods in society. Since the government can achieve the same public finance objectives through both taxation and corporate donations, the government has an incentive to use its discretionary taxation power to enter into an implicit contract with enterprises to “Donation in exchange for Tax” when corporate tax avoidance is severe, and tax inspection is costly. This implicit contract represented the local governments lower tax enforcement and inspection efforts in exchange for corporate donations. However, the implementation of “Golden Tax Phase

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1 General Administration of Taxation: Anti-avoidance work in 2014 http://www.chinatax.gov.cn/n810219/n810724/c1507274/content.html.
III”, through the application of big data and information technology, has significantly improved the ability of tax collection and administration and limited the discretionary power of tax enforcement and inspection. This change will break the implicit contract between enterprises and local governments and prompt them to reduce donations. Therefore, theoretically, implementing the “Golden Tax III” project will discourage corporate donations by strengthening tax enforcement and administration.

This paper uses the difference-in-difference method to analyse Chinese private listed companies from 2010–2018. We find that with the implementing the “Golden Tax III” project, the improvement of tax administration information technology breaks the implicit contract of “Donation in exchange for Tax” between enterprises and the government. Moreover, in regions with low taxation capacity and enterprises with high tax avoidance, “Golden Tax III” is more likely to inhibit corporate tax avoidance and thus reduce corporate donations pronouncedly. These results indicate that improving tax administration information technology can strengthen the government’s public governance capacity and regulate corporate social responsibility behavior. Due to the complex motivation of corporate donations, this paper further explores the impact of “Golden Tax III” on the types of donations and finds that the improvement of tax information technology mainly decreases rent-seeking donations rather than squeezes out market-oriented donations. In addition, we use the mediation test to exclude the alternative interpretation that “the increase of tax burden reduces the free cash flow of enterprises, which leads to the reduction of corporate donations”. Overall, the results of this paper indicate that the “Golden Tax III” has improved the technology of tax administration, curbed corporate rent-seeking behaviour, regulated corporate social responsibility, and enhanced public governance in taxation.

The main contributions of this study are as follows: First, this paper uses the implementation of the “Golden Tax III” project as an exogenous shock to examine the strategic donation motivation of private enterprises to “Donation in exchange for Tax” and indirectly verifies the substitution relationship between tax payment and corporate donation. In addition, compared with the existing literature that understands the motives of tax enforcement and administration from the perspectives of tax competition, investment attraction, and institution corruption, this paper emphasises the importance of tax administration information technology, which both deepens the understanding of tax enforcement and enriches the literature related to tax governance.

Second, Chen et al. (2008), Du (2015) and Hu et al. (2020) show that strategic donations by Chinese enterprises not only disguise their inadequate fulfilment of social responsibility but also may mislead public attention and harm the overall welfare of society, which is a pseudo-socially responsible behaviour. From the perspective of information technology, our paper reveals that improving public governance can restrain the rent-seeking donation behaviour of enterprises, which provides factual evidence for more significant investment in information technology infrastructure to enhance the informatization of society. This study enables us to deepen our understanding of corporate donation in China. It also enriches the existing literature on corporate social responsibility and the impact of information technology on corporate microeconomic behaviour.

Third, Davis et al. (2016) and Col and Patel (2019) explain the substituted relationship between tax payments and corporate social responsibility from the resource constraint and risk management perspectives, respectively. Resource constraint perspective stress that tax expenditures will reduce the resources available for corporate social
responsible. The risk management perspective suggested that enterprises balance the risk of tax avoidance with under-performance corporate social responsibility. Based on the Chinese institutional context, this paper explores the critical impact of tax administration information technology on the substitution relationship between taxation and donation. This paper provides Chinese evidence for understanding the substitution relationship between taxation and donation and inspires tax lawmakers to consider the substitution of donation when designing tax rates. It provides practical guidance for further guiding and regulating corporate social responsibility behaviours as well as designing China’s future tax administration information systems.

The rest of our paper is structured as follows. Section 2 introduces the institutional background and develops a theoretical analysis. Section 3 details the sample selection and research design. Section 4 discusses the main results. Section 5 concludes our paper and gives policy implications.

2. Institutional background and theoretical analysis

2.1. Institutional background

According to preliminary estimates from the State Administration of Taxation’s investigation, Chinese enterprises avoided taxing nearly 52.3 billion in 2014 alone. Tax avoidance by enterprises has seriously affected the country’s economic growth as well as the well-being of society. At the same time, the taxation authorities have been continuously increasing their investment in both human capital and information technology to improve the efficiency of tax enforcement and administration. In terms of investment in human capital, from 1994 to 2013, China’s tax staff increased from 725,800 to 871,900, while the number of legal entities increased from 4,002,200 to 10,825,600, among which the number of enterprises increased from 3,040,100 to 8,208,300. These statistics show that the increase in human investment is far less than the increase in enterprises. In terms of information technology investment, the Chinese government began to promote the “Golden Tax Project” in 1994 to realise the informatization of the taxation system gradually. The “Golden Tax Phase I” project was implemented in 50 cities from 1994 to 1998. After that, the State Administration of Taxation updated the system and implemented “Golden Tax Phase II” to fix the defects and shortcomings of “Golden Tax Phase I”.

These two phases of the “Golden Tax Project” mainly focus on value-added tax enforcement and administration. With the increasing number of taxable objects and the rising complexity of tax-related information, the difficulty of tax administration and inspection has gone up significantly. Faced with the complex and numerous types of tax and the rapidly growing number of entities, the governmental departments gradually realized that the number of tax staff was actually quite large. It became evident that increasing human tax capacity would not enhance the efficiency of tax enforcement and administration. Therefore, the tax authorities decide to strengthen the informationization of the tax administration system and continue to launch the “Golden Tax Phase III” project to improve the efficiency of tax enforcement and administration.

Compared with the previous two phases of the Golden Tax Project, the “Golden Tax III” project makes full use of big data, cloud computing, and other technical tools to significantly improve the collection, processing, and anti-forgery capability of tax-related
information, which is embodied as follows: First, the “Golden Tax III” project realizes “one platform and two levels of processing”, which builds a unified technology platform and allows tax-related information to flow smoothly in various tax authorities and other governmental departments, realizing not only the cross-checking and process monitoring of tax-related data, but also the centralized processing of tax-related information. The new tax administration information system substantially reduces the discretionary power of local taxation authorities and effectively curbs corruption in tax enforcement and administration. Secondly, the “Golden Tax III” project realises “three coverings, and four subsystems”, comprehensively covers all kinds of taxes, monitors all transaction links, and is not bound by geography. Third, based on the Internet, the National Tax Authority collects and analyzes tax-related information with the help of big data and cloud computing technology, which greatly improves the timeliness, accuracy, and extensiveness of information and makes tax enforcement and administration efficiency leap forward. “Golden Tax III” has greatly increased the difficulty of tax avoidance and curbed the tax avoidance motive of enterprises.

2.2. Theoretical analysis: hypotheses development

The logical basis of this paper is that the government has discretionary power for tax enforcement and administration. At the same time, enterprises have the option to donate. In line with the “resource exchange theory”, we will expect a reciprocal transaction between government tax intensity and enterprise donation willingness. However, the implementation of the “Golden Tax III” project has improved the information technology capability of tax administration and limited the discretionary power of tax administration and inspection. Thus, this new tax administration information system will break the implicit contract between enterprises and local governments to “Donation in exchange for Tax”, further reducing corporate donations. Next, we will analyze in detail how the government and enterprises reach the implicit contract of “Donation in exchange for Tax”, and how the “Golden Tax Phase III” project inhibits “Donation in exchange for Tax” by improving the information technology capability of tax administration, thus prompting enterprises to reduce donation.

Taxation is the primary source of public finance funds for the government. The government will adopt various means to strengthen the efficiency of tax collection and administration to prevent tax avoidance by enterprises and protect fiscal revenue. For enterprises, tax payment is one of the main expenses of enterprises. The larger the tax expense, the lower the company’s net profit. Chinese enterprises usually take various tools to avoid tax (Zhang et al., 2018). Nevertheless, whether and to what extent enterprises can successfully avoid taxes depends on the efficiency of tax collection and administration, which depends on the improvement of tax administration information systems. Based on the above institutional background, it is evident that the construction and improvement of a tax administration information system are dependent not only on updated internet information technology but also on information sharing among multiple departments (Banking, Trade and Industry Bureau, Social Security, Securities Regulation and so on). The poor state of tax collection technologies allows enterprises to avoid taxes in many ways, and tax authorities impose higher costs to inspect enterprises’ tax avoidance. In terms of the economic efficiency of government revenue, it is not the optimal economic decision for tax authorities to implement strict tax administration. To some extent, relaxing tax collection and administration to exchange other forms of income
is more beneficial to government financial revenue. Government tax collection and corporate tax avoidance is a long-term repeated game process. In this repeated game process, a reciprocal implicit contract between government and enterprises will evolve spontaneously with the information technology as the constraint condition.

Reciprocal exchange is the most prevalent social activity. There are extensive reciprocal exchanges between enterprises and the government, especially in the market where the government directly intervenes in the economic system and plays a critical role in the economy. In such circumstances, enterprises and the government maintain reciprocal behaviours through various implicit contracts (Faccio, 2006; Fan et al., 2007; Luo & Liu, 2009). From the perspective of private enterprises, local governments control vital resources, and it is crucial for private enterprises to establish a harmonious relationship with local governments (Li et al., 2015; Zhang et al., 2013). As for the donation, it is a flexible tool to construct political connections and can reduce the political risk and rent-seeking risk of enterprises by expanding the scope of donation (Zhong, 2007). Private enterprises are motivated to help the government share the task of people’s livelihood through charitable donations while establishing a reciprocal political-enterprise relationship with the local government. A harmonious government-enterprise relationship not only brings resources to enterprises (Chan & Feng, 2019; Chen et al., 2015; Dai et al., 2014) but also may allow enterprises to obtain more lenient tax regulation and a higher degree of corporate tax avoidance (Li et al., 2016; Wu et al., 2009). From the perspective of local governments, taxation is the financial guarantee for the provision of public goods to society. However, the local government cannot fully cover the expenditure of local public goods, which needs local enterprises to participate in social welfare activities together. Since corporate donation can also release the public expenditure burden for local governments, local governments may take advantage of their discretionary power in tax inspection and administration when corporate tax avoidance is severe and tax inspection costs are high (Guo & Li, 2009; Tian et al., 2020; Yu et al., 2018). Consequently, the enterprise and the government entered into an implicit contract of “Donation in exchange for Tax” (Li et al., 2016).

Since tax administration information technology can be expensive for corporate tax avoidance inspections, private enterprises can achieve “Donation in exchange for Tax” by collaborating with governments to accomplish certain social welfare goals. It also means enterprises use the donations to gain the government’s tolerance for their tax avoidance behaviour. On the contrary, the advancement of tax administration information technology will improve the ability of tax administration and enforcement, which will not only effectively combat corporate tax avoidance (Casaburi & Troiano, 2016; Gordon & Li, 2009), but also greatly curb the discretionary power of local government. Combining the institutional background of “Golden Tax III” and the analysis of social exchange theory, After the implementation of “Golden Tax III”, on the one hand, the improvement of tax administration information technology limits the discretionary power of local tax authorities. On the other hand, the improvement of tax administration information technology enables tax authorities to grasp timely and accurate tax-related information of enterprises, which greatly increases the difficulty of corporate tax avoidance and inhibits the motivation of enterprises to avoid tax by donation. Therefore, this paper proposes the hypothesis:

H1: If all else is equal, the implementation of “Golden Tax Phase III” significantly decreases donations by private enterprises.
3. Research design

3.1. Sample selection and data sources

The samples in this paper are private listed companies on the Shanghai and Shenzhen stock markets from 2010 to 2018. We collected the specific time when each province launched “Golden Tax III” from the website of each provincial tax authority and related tax administration news. We collected data on private enterprises’ donations from the non-operating expense items in companies’ annual reports. The data on corporate income tax rates are obtained from WIND, the data on affiliated transactions are obtained from CNRDS, and the other control variables are obtained from CSMAR. To prevent the impact from outliers, we winsorize the data at 1% and 99% level. After excluding the financial and insurance industries and the missing observations of the main variables, we obtained a total of 13,026 “firm-year” observations of private enterprises.

3.2. Regression model

The timing of the implementation of the “Golden Tax III” system varies widely across provinces and cities, from Chongqing, Shandong (except Qingdao), and Shanxi in 2013 to Guangdong (except Shenzhen), Neimenggu, and Henan in 2014, and so on. It provides a natural experiment for us to study how tax administration information technology affects corporate donations using “Golden Tax III” as an exogenous shock. Following Imbens and Wooldridge (2009) and Atanassov (2013), we use a staggered difference-in-differences design and set up model (1) for regression analysis.

\[
Donation_{i,t} = \beta_0 + \beta_1 GTP_{i,t} + \beta_2 \text{Size}_{i,t} + \beta_3 \text{Lev}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{Growth}_{i,t} + \beta_6 \text{CFO}_{i,t} + \beta_7 \text{SalesFee}_{i,t} + \beta_8 \text{TAT}_{i,t} + \beta_9 \text{ListAge}_{i,t} + \beta_{10} \text{Board}_{i,t} + \beta_{11} \text{Top1}_{i,t} + \beta_{12} \text{GDP}_G_{i,t} + \beta_{13} \text{Second}_{i,t} + \beta_{14} \text{TE}_D\text{UM}_{i,t} + \sum \text{Firm} + \sum \text{Year} + \epsilon_{i,t}
\]

Where the dependent variable, Donation, is equal to the corporate donation divided by total operating income and multiplied by 1000. We also use Donation as a robust variable for corporate donations, which is calculated as the corporate donation divided by total asset and multiplied by 1000. The main variable of interest (independent variable), GTP, is an indicator variable that takes the value of 1 in the current year and subsequent years when “Golden Tax Phase III” is implemented in the place where the company is located, and 0 otherwise. Following Pan et al. (2017) and Hu et al. (2020), this paper also includes these control variables: enterprise size (Size), financial leverage (Lev), profitability (ROA), growth ability (Growth), and cash flow capacity (CFO). Xu and Li (2016) suggest that advertising is an essential purpose of the corporate donation, so this paper adds SalesFee to control donation for advertising purposes. In addition, the paper also controls the total asset turnover (TAT), firm age (ListAge), board size (Board) and, the

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2013: Chongqing, Shandong (except Qingdao), Shanxi; 2014: Guangdong (except Shenzhen), Neimenggu, Henan; 2015: Ningxia, Hebei, Guizhou, Guangxi, Yunnan, Hunan, Qinghai, Hainan, Tibet, Gansu, Anhui, Sichuan, Xinjiang, Jilin; 2016: Liaoning, Jiangxi, Fujian, Beijing, Tianjin, Heilongjiang, Shaanxi, Hubei, Shanghai, Jiangsu, Zhejiang. Among them, Qingdao City in Shandong Province and Shenzhen City in Guangdong Province alone implemented the Golden Tax III system in 2016.

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\[2\] Imbens, G., & Wooldridge, J. (2009). Identification and Estimation of Dynamic Treatment Effects using Propensity Scores. Journal of the American Statistical Association, 104(485), 2009-2017.

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\[3\] Atanassov, A. K. (2013). Do Financial Aid Programs Affect Private Contributions to Charity? Evidence from a Staggered Adoption of an Electronic Donations System. Journal of Public Economics, 103, 20-32.
shareholding ratio of the largest shareholder (Top1). Following, Zhang et al. (2020) and Ye and Liu (2011), the province-level control variables, such as economic growth rate (GDP_G), industrial structure (Second), and regional tax enforcement intensity (TE_DUM), are added in this article. The firm fixed effect is included to control for any unobserved time-invariant difference and the year fixed effect for any time-varying heterogeneity. All key variables are as defined in Table 1.

### 3.3. Descriptive statistics

Table 2 shows the descriptive statistical results of the main variables in this paper. The mean value of Donation_S is 0.408, indicating that for every 10,000 yuan of revenue created by the sample enterprises, 4.08 yuan is used for corporate donation. The median value of 0.075 is greater than 0, indicating that more than half of the enterprises in the sample have made corporate donations to some extent. The mean value of the “Golden Tax Phase III” variable (GTP) is 0.520, indicating that 52% of the samples in this paper are in the post-implementation period. The distribution of other control variables is basically consistent with the existing literature of Xu and Li (2016) and Pan et al. (2017).

### 3.4. Correlation analysis

Table 3 presents the correlation analysis of the main variables. There is a significant negative correlation between “Golden Tax Phase III” (GTP) and corporate donations (Donation_S or Donatin_A), which tentatively indicates that the strengthening of tax enforcement and administration has a significant inhibitory effect on private enterprises’ donations. However, since the correlation coefficient test does not consider the effects of other control variables, the specific results need to be further regression analysed. All control variables except firm size (Size) were significantly correlated with corporate donation (Donation_S or
Table 2. Descriptive statistics.

| Variable   | Obs  | Mean  | SD   | Min   | Median | Max   |
|------------|------|-------|------|-------|--------|-------|
| Donation_S | 13,026 | 0.408 | 0.873 | 0.000 | 0.075  | 5.332 |
| Donation_A | 13,026 | 0.194 | 0.394 | 0.000 | 0.040  | 2.412 |
| GTP        | 13,026 | 0.520 | 0.500 | 0.000 | 1.000  | 0.000 |
| Size       | 13,026 | 21.751 | 1.082 | 19.557 | 21.645 | 25.961 |
| Lev        | 13,026 | 0.379 | 0.199 | 0.054 | 0.363  | 0.892 |
| ROA        | 13,026 | 0.049 | 0.057 | −0.158 | 0.045  | 0.213 |
| Growth     | 13,026 | 0.237 | 0.489 | −0.564 | 0.149  | 3.099 |
| CFO        | 13,026 | 0.039 | 0.073 | −0.203 | 0.039  | 0.246 |
| SalesFee   | 13,026 | 0.083 | 0.093 | 0.000 | 0.051  | 0.494 |
| TAT        | 13,026 | 0.586 | 0.391 | 0.062 | 0.496  | 2.373 |
| ListAge    | 13,026 | 1.849 | 0.801 | 0.000 | 1.946  | 3.219 |
| Board      | 13,026 | 2.098 | 0.189 | 1.609 | 2.197  | 2.708 |
| Top1       | 13,026 | 0.323 | 0.141 | 0.085 | 0.300  | 0.716 |
| GDP_G      | 13,026 | 0.100 | 0.041 | 0.006 | 0.094  | 0.232 |
| Second     | 13,026 | 43.539 | 8.549 | 18.630 | 45.355 | 55.500 |
| TE_DUM     | 13,026 | 0.354 | 0.478 | 0.000 | 0.000  | 1.000 |

Donation_A, indicating the rationality of the selection of control variables. The correlation coefficients between the variables are mostly below 0.40, indicating that the model does not suffer from serious multicollinearity problems.

4. Empirical analysis and discussion of results

4.1. “Golden Tax Phase III” and corporate donation

Table 4 reports the staggered DID results for “Golden Tax III” and corporate donations. In regression (1), we use Donation_S as a proxy variable for the corporate donations. When only the firm and year fixed effect are controlled, it is found that the coefficient of “Golden Tax III” (GTP) is −0.089 and significant at 1% level. Regression (2) adds the control variables defined in the model (1) and also controls for firm and year fixed effects, the coefficient of GTP is −0.088, which is still significant at the 1% level. This effect is both statistically and economically significant. The coefficient of GTP in regression (2) implies that the average donation of private enterprises decreased by 21.57% since the implementation of “Golden Tax III”. In regressions (3) and (4), we use Donation_A for robustness testing, and the coefficients of GTP are both significantly negative at the 1% level. In summary, the regression results in Table 4 robustly validate the research hypothesis of this paper that “Golden Tax III” significantly reduces the donations of private enterprises by improving tax administration information technology and thus strengthening tax enforcement capacity.

In terms of control variables, financial leverage (Lev) and growth ability(Growth) are significantly negatively correlated with Donation_S, suggesting that enterprises with greater debt repayment pressure or in the growth stage will donate less. Profitability (ROA) is significantly positively correlated with corporate donation (Donation_S), indicating that the more profitable a firm is, the more likely it is to donate. These results are consistent with previous studies of Xu and Li (2016) and Pan et al. (2017). In addition, we find that areas with higher economic growth rates have higher levels of corporate donation; However, in areas with higher intensity of tax enforcement, the level of corporate donation is lower.

The regression coefficient of GTP in column (2) of Table 4 is −0.088/mean value of Donation_S (0.408) = −21.57%.

\[\text{The regression coefficient of GTP in column (2) of Table 4 is } -0.088/\text{mean value of Donation_S (0.408)} = -21.57%.\]
Table 3. Correlation matrix.

|       | 1.  | 2.  | 3.  | 4.  | 5.  | 6.  | 7.  | 8.  | 9.  | 10. | 11. | 12. | 13. | 14. | 15. | 16. |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Donation_S | 1.000 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2. Donation_A  | 0.876*** | 1.000 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 3. GTP         | -0.026*** | -0.037*** | 1.000 |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 4. Size        | 0.004 | 0.004 | 0.200*** | 1.000 |     |     |     |     |     |     |     |     |     |     |     |     |
| 5. Lev         | -0.095*** | -0.084*** | 0.016* | 0.477*** | 1.000 |     |     |     |     |     |     |     |     |     |     |     |
| 6. ROA         | 0.085*** | 0.171*** | -0.042*** | 0.008 | -0.317*** | 1.000 |     |     |     |     |     |     |     |     |     |     |
| 7. Growth      | -0.028*** | -0.004 | 0.027*** | 0.092*** | 0.080*** | 0.215*** | 1.000 |     |     |     |     |     |     |     |     |     |
| 8. CFO         | 0.034*** | 0.118*** | 0.028*** | 0.025*** | -0.165*** | 0.377*** | -0.026*** | 1.000 |     |     |     |     |     |     |     |     |
| 9. SalesFee    | 0.137*** | 0.147*** | 0.035*** | -0.109*** | -0.225*** | 0.091*** | -0.061*** | 0.096*** | 1.000 |     |     |     |     |     |     |     |
| 10.TAT        | -0.125*** | 0.071*** | -0.046*** | 0.055*** | 0.169*** | 0.159*** | 0.072*** | 0.160** | -0.096*** | 1.000 |     |     |     |     |     |     |
| 11.ListAge     | -0.031*** | -0.057*** | 0.095*** | 0.365*** | 0.367*** | -0.207*** | 0.024*** | 0.001 | -0.039*** | 0.001 | 1.000 |     |     |     |     |
| 12.Board       | 0.029*** | 0.056*** | -0.066*** | 0.187*** | 0.102*** | 0.037*** | -0.001 | 0.031*** | -0.011 | 0.049*** | 0.062*** | 1.000 |     |     |     |
| 13.Top1        | 0.022**  | 0.041*** | -0.070*** | 0.059*** | -0.001 | 0.147*** | 0.015*  | 0.070*** | 0.006 | 0.086*** | -0.219*** | -0.068*** | 1.000 |     |     |
| 14.GDP_G       | 0.054*** | 0.071*** | -0.309*** | -0.136*** | 0.017*  | 0.076*** | 0.053*** | -0.060*** | -0.020** | 0.053*** | -0.074*** | 0.052*** | 0.016* | 1.000 |     |
| 15.Second      | 0.031*** | 0.066*** | -0.284*** | -0.065*** | 0.071*** | 0.002 | -0.022*** | 0.020**  | -0.086*** | 0.108*** | 0.002 | 0.052*** | 0.059*** | 0.231*** | 1.000 |     |
| 16.TE_DUM      | -0.017*  | -0.031*** | 0.135*** | 0.051*** | -0.010 | 0.005 | 0.008 | 0.015*  | 0.044*** | -0.044*** | 0.057*** | 0.013 | -0.045*** | -0.006 | -0.351*** | 1.000 |     |

Pearson’s correlation coefficients, ***p < 0.01, **p < 0.05, *p < 0.1.
which further supports the underlying logic of this paper. When the government has a lower intensity of tax enforcement and administration (with greater discretionary power), enterprises will donate more and are more likely to reach an “implicit contract”.

In this paper, we use model (2) to test the parallel trend. Before1 in model (2) is a dummy variable, which takes the value of 1 in the one year before the implementation of “Golden Tax III” and 0 in the rest of the years. Before2 is a dummy variable, which takes the value of 1 in the two years before the implementation of “Golden Tax III” and 0 in the rest of the years. Gt sets the value of 1 in the year of “Golden Tax III” project implementation, and 0 in other years. In regressions (1)–(4) of Table 5, the regression coefficients of Before2 and Before1 are insignificant, while After1 and After2 are both significantly negative, indicating that before the implementation of “Golden Tax Phase III”, there is no significant difference in corporate donation between the treatment group and the control group. However, with the implementation of the “Golden Tax III”, corporate donations decreased significantly. The coefficient dynamics map out the treatment effects only in the post-treatment period and our estimations satisfy the pre-treatment trend assumption.

Table 4. “Golden Tax Phase III” and corporate donation.

|       | (1)          | (2)          | (3)          | (4)          |
|-------|--------------|--------------|--------------|--------------|
|       | Donation_S   | Donation_S   | Donation_A   | Donation_A   |
| GTP   | −0.089***    | −0.088***    | −0.043***    | −0.037***    |
|       | (−2.82)      | (−2.75)      | (−3.07)      | (−2.67)      |
| Size  | −0.017       | −0.033***    | −0.082**     | (−2.11)      |
| Lev   | −0.233**     | (−2.54)      | −0.051***    | −0.005       |
| ROA   | 0.416**      | (2.11)       | 0.388***     | (4.15)       |
| Growth| −0.051***    | (−2.80)      |              | (−0.66)      |
| CFO   | −0.201       | (−1.57)      | 0.045        | (0.81)       |
| SalesFee | 0.432       | (1.45)       | 0.070        | (0.70)       |
| TAT   | −0.194***    | (−4.68)      | 0.055**      | (2.50)       |
| ListAge| −0.045      | (−1.00)      | −0.014       | (−0.71)      |
| Board | 0.083        | (0.98)       | 0.028        | (0.78)       |
| Top1  | −0.226       | (−1.27)      | −0.123*      | (−1.69)      |
| GDP_G | 0.740        | (1.50)       | 0.393*       | (1.87)       |
| Second| 0.007        | (1.04)       | 0.004        | (1.22)       |
| TE_DUM| −0.081***    | (−2.65)      | −0.039***    | (−2.78)      |
| Constant | 0.633***    | 0.656        | 0.325***     | 0.728***     |
|       | (16.54)      | (0.89)       | (18.27)      | (2.26)       |
| Firm  | Yes          | Yes          | Yes          | Yes          |
| Year  | Yes          | Yes          | Yes          | Yes          |
| Adj. R² | 0.010       | 0.019        | 0.019        | 0.029        |
| N     | 13,026       | 13,026       | 13,026       | 13,026       |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
**Donation** \(_{S\_i,t}\) / **Donation** \(_{A\_i,t}\) = \(\beta_0 + \beta_1Before2_{i,t} + \beta_2Before1_{i,t} + \beta_3Gt_{i,t} + \beta_4After1_{i,t}
+ \beta_5After2_{i,t}\beta_6Size_{i,t} + \beta_7Lev_{i,t} + \beta_8ROA_{i,t} + \beta_9Growth_{i,t}
+ \beta_{10}CFO_{i,t} + \beta_{11}SalesFee_{i,t} + \beta_{12}TAT_{i,t} + \beta_{13}ListAge_{i,t} + \beta_{14}Board_{1,t} + \beta_{15}Top1_{i,t} + \beta_{16}GDP_{G\_i,t} + \beta_{17}Second_{i,t} + \beta_{18}TE\_DUM_{i,t} + \sum Firm + \sum Year + \varepsilon_{i,t}

(2)

Following Xu and Li (2016) and Pan et al. (2017), we also conduct a permutation analysis as a placebo test. Specifically, by randomly assigning the “Golden tax Phase III” to each observation, we conduct 1,000 permutations of the data, and each time we repeat our

|                      | (1)           | (2)           | (3)           | (4)           |
|----------------------|---------------|---------------|---------------|---------------|
| **Donation** \(_{S\_i,t}\) | 0.024         | 0.034         | 0.010         | 0.014         |
|                      | (0.79)        | (1.12)        | (0.81)        | (1.09)        |
| **Before2**         | −0.004        | 0.006         | 0.000         | 0.005         |
|                      | (−0.13)       | (0.19)        | (0.01)        | (0.35)        |
| **Gt**              | −0.047        | −0.034        | −0.021        | −0.013        |
|                      | (−1.41)       | (−0.98)       | (−1.44)       | (−0.84)       |
| **After1**          | −0.079**      | −0.070**      | −0.038***     | −0.031**      |
|                      | (−2.37)       | (−2.09)       | (−2.54)       | (−2.01)       |
| **After2**          | −0.060**      | −0.046        | −0.036***     | −0.026*       |
|                      | (−2.01)       | (−1.49)       | (−2.64)       | (−1.91)       |
| **Size**            | −0.017        | −0.017        | −0.032***     | −0.032***     |
|                      | (−0.59)       | (−0.59)       | (−2.64)       | (−2.64)       |
| **Lev**             | −0.231**      | −0.231**      | −0.081**      | −0.081**      |
|                      | (−2.52)       | (−2.52)       | (−2.10)       | (−2.10)       |
| **ROA**             | 0.413**       | 0.386***      | 0.386***      | 0.386***      |
|                      | (2.09)        | (4.12)        | (4.12)        | (4.12)        |
| **Growth**          | −0.052***     | −0.052***     | −0.005        | −0.005        |
|                      | (−2.82)       | (−2.68)       | (−0.68)       | (−0.68)       |
| **CFO**             | −0.200        | 0.046         | 0.046         | 0.046         |
|                      | (−1.56)       | (0.82)        | (0.82)        | (0.82)        |
| **SalesFee**        | 0.428         | 0.428         | 0.069         | 0.069         |
|                      | (1.43)        | (0.69)        | (0.69)        | (0.69)        |
| **TAT**             | −0.195***     | −0.195***     | 0.055**       | 0.055**       |
|                      | (−4.68)       | (2.49)        | (2.49)        | (2.49)        |
| **ListAge**         | −0.045        | −0.045        | 0.004         | 0.004         |
|                      | (−1.00)       | (−0.71)       | (−0.71)       | (−0.71)       |
| **Board**           | 0.083         | 0.083         | 0.027         | 0.027         |
|                      | (0.07)        | (0.77)        | (0.77)        | (0.77)        |
| **Top1**            | −0.228        | −0.228        | −0.124*       | −0.124*       |
|                      | (−1.28)       | (−1.70)       | (−1.70)       | (−1.70)       |
| **GDP\_G**          | 0.725         | 0.725         | 0.378*        | 0.378*        |
|                      | (1.47)        | (1.79)        | (1.79)        | (1.79)        |
| **Second**          | 0.007         | 0.007         | 0.004         | 0.004         |
|                      | (1.08)        | (1.26)        | (1.26)        | (1.26)        |
| **TE\_DUM**         | −0.076**      | −0.076**      | −0.036**      | −0.036**      |
|                      | (−2.45)       | (−2.51)       | (−2.51)       | (−2.51)       |
| **Constant**        | 0.633***      | 0.638         | 0.326***      | 0.723***      |
|                      | (16.55)       | (0.87)        | (18.27)       | (2.24)        |
| **Firm**            | Yes           | Yes           | Yes           | Yes           |
| **Year**            | Yes           | Yes           | Yes           | Yes           |
| **Adj. R\(^2\)**   | 0.010         | 0.019         | 0.019         | 0.029         |
| **N**               | 13,026        | 13,026        | 13,026        | 13,026        |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
regression specifications in columns (2) and (4) of Table 4 and record the coefficients. The first row of Table 6 reports the distribution of the regression coefficients for the GTP_Random and Donation_S. The regression coefficient obtained by random simulation is distributed around 0, with a maximum value of 0.044 and a minimum value of −0.043, and the mean value is not significantly different from 0. It is worth mentioning that the coefficient of our baseline regression is −0.088, which is entirely independent of the coefficient distribution. The second row of Table 6 shows the results of 1000 repeated regressions between GTP_Random and Donation_A, the results consistent with the former test.

Figure 1 depicts the distribution of the regression coefficients of the GTP_Random with Donation_S. The dashed line represents the true treatment effect of the “Golden Tax Phase III” (GTP) in the baseline regression, with the coefficient of −0.088 which is far from the coefficient distribution of the random experiment. The results of the placebo test reinforce our assertion that “Golden Tax III” has a significant impact on corporate donation and the treatment effect is not a statistical artefact.

4.2. Potential mechanisms of “Golden Tax Phase III” on corporate donation

4.2.1. Analysis based on local tax administration capacity

The information infrastructure foundation and tax talents can significantly affect the tax enforcement and administration capacity of the tax authorities, and thus influence the effectiveness of public governance. China released the “Broadband China” strategy in August 2013 and identified 39 cities as “Broadband China” pilot cities (city groups) in September 2014.3 These pilot cities are ahead of the national broadband construction level, and their broadband penetration rate and information sharing capacity are better than other cities. For these cities, the tax authorities could monitor the tax activities of enterprises more effectively before the implementation of “Golden Tax Phase III”, and the tax authorities’ tax enforcement and administration efficiency are already at a high level. Therefore, compared with these pilot cities, those regions with less developed network infrastructure should find the effect of “Golden Tax III” more prominent. Regression (1) and regression (2) in Table 7 find that “Golden tax Phase III” plays a more significant role in cities with poor information infrastructure previously, and these cities with more obvious informatization improvement after the implementation of the “Golden tax Phase III”.

In addition, according to Sun et al. (2021), the proportion of certified public accountants or certified tax agents in tax authorities is used to measure the tax administration capacity of the local tax authority. According to data of tax talents from 36 provinces, autonomous regions, municipalities, and separately listed cities included in the 2013 Tax

Table 6. “Golden Tax Phase III” and corporate donations: placebo test.

| Coefficients for random setting | Obs | Mean | SD  | Min  | P25 | Median | P75 | Max  |
|--------------------------------|-----|------|-----|------|-----|--------|-----|------|
| GTP_Random                    | 1000| 0.001| 0.014| −0.043| −0.009| 0.000  | 0.010| 0.044|
| GTP_Random_Donation_S         | 1000| 0.000| 0.006| −0.018| −0.004| 0.000  | 0.004| 0.020|

1. The regression coefficient of “Golden Tax III” (GTP) and Donation_S is −0.088, which is totally different from the distribution interval [−0.043,0.044] of GTP_Random and Donation_S. The regression coefficient of “Golden Tax III” (GTP) and Donation_A is −0.037, which is independent of the distribution interval [−0.018,0.020].

3https://www.isc.org.cn/zxzx/zfxx/listinfo-30488.html. 2014 “Broadband China” demonstration cities (city groups) list.
Inspection Yearbook. We identify the top 1/3 provinces (cities) as regions with high tax administration capacity. The regressions (3) and (4) in Table 7 show that the effect of “Golden Tax Phase III” on reducing donations occurs mainly in areas with poor tax talent abilities. To sum up, the results in Table 7 show that in areas with weak tax enforcement and administration capacity, “Golden Tax Phase III” plays a more prominent role.

4.2.2. Analysis based on corporate tax avoidance
After the implementation of “Golden Tax Phase III”, the progress of tax administration information technology has improved the government’s tax enforcement ability, and the tax avoidance behaviour of enterprises is severely restricted (Zhang et al., 2020). “Golden

Table 7. Analysis based on local tax administration capacity.

|                | (1)         | (2)         | (3)         | (4)         |
|----------------|-------------|-------------|-------------|-------------|
|                | Better network foundation | Poor network foundation | More Tax Talents | Fewer Tax Talents |
| Donation_S     | 0.024       | 0.120***    | 0.003       | 0.155***    |
|                | (−0.61)     | (−2.79)     | (−0.06)     | (−3.31)     |
| Difference between groups | −0.096*    | −0.152**   |             |             |
|                | (2.75)       | (5.53)      |             |             |
| Controls       | Yes          | Yes         | Yes         | Yes         |
| Firm           | Yes          | Yes         | Yes         | Yes         |
| Year           | Yes          | Yes         | Yes         | Yes         |
| Adj. R2        | 0.013        | 0.030       | 0.011       | 0.031       |
| N              | 6380         | 6646        | 6593        | 6433        |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
Tax Phase III” reduces the need for enterprises to “rationalise” tax avoidance through donations. Therefore, we expect that the effect of “Golden Tax III” to break the “tax avoidance by donation” should be more significant in the sample of enterprises with more tax avoidance. Huang et al. (2013) found that the more related party transactions, the greater the tax avoidance of enterprises. Regression (1) and regression (2) in Table 8 support our point that in the group with more related party transactions, “Golden tax Phase III” significantly reduces corporate donation.

Additionally, following Li et al. (2016) and Zhang et al. (2020), we obtain the effective tax burden of enterprises (ETR) by calculating the ratio of income tax expense to total pretax profit and measuring the difference between the nominal income tax rate and the effective tax burden of enterprises (Diff_Tax) as the tax avoidance variable (Chen et al., 2016). In regressions (3)-(4) of Table 8, the effect of “Golden Tax III” on reducing donations is significantly negative in the group with a high degree of tax avoidance, but not significant in the group with a low degree of tax avoidance. The results in Table 8 further demonstrate that the “Golden Tax III” reduces the expected benefits of enterprises to avoid tax by donation, restrains the rent-seeking behaviour of enterprises, and standardises corporate social responsibility by enhancing the government’s tax enforcement and administration capacity.

4.2.3. Analysis based on donation purpose
This paper attempts to deepen the understanding of the reduction of corporate donation by “Golden Tax III” from the purpose of corporate donation. The higher the sales expenditure, the stronger the marketing motivation, and the more likely the donation as a marketing tool. Market-oriented donations are in line with rational economic motives and belong to legitimate market behaviour, while “Donation in exchange for Tax” is a non-legitimate rent-seeking behaviour. Theoretically, the “Golden Tax III” should mainly curb the rent-seeking behavior of “Donation in exchange for Tax”, but not affect the market-oriented donations. Regressions (1) and (2) in Table 9 show that the “Golden Tax III” has no significant impact on corporate donations in the group with more sales expenses, while it significantly reduces corporate donations in the group with fewer sales expenses. This indicates that the “Golden Tax III” has effectively curbed rent-seeking donations and has not interfered with normal corporate donations.

Table 8. Analysis based on corporate tax avoidance.

|                      | (1)                      | (2)                      | (3)                      | (4)                      |
|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                      | More related party       | Fewer related party      | Higher degree of tax     | Lower degree of tax      |
|                      | transactions             | transactions             | avoidance                | avoidance                |
| Donation_S           | Donation_S               | Donation_S               | Donation_S               | Donation_S               |
| GTP                  | −0.117*** (−3.03)        | −0.007 (−1.4)            | −0.156*** (−3.16)        | −0.025 (−0.54)           |
| Difference between   |                          |                          |                          |                          |
| groups               |                          | −0.110* (3.25)           | −0.131** (3.86)          |                          |
| Controls             | Yes                      | Yes                      | Yes                      | Yes                      |
| Firm                 | Yes                      | Yes                      | Yes                      | Yes                      |
| Year                 | Yes                      | Yes                      | Yes                      | Yes                      |
| Adj. R2              | 0.025                    | 0.018                    | 0.028                    | 0.012                    |
| N                    | 6488                     | 6538                     | 6492                     | 6534                     |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
In addition, when the chairman and chief executive officer are the same person, the power of the CEO is too great to supervise (Lu et al., 2008), resulting in poor corporate governance. At this point, corporate donations are more likely to be used for the personal preference of the manager or for non-market purposes such as “Donation in exchange for Tax”. As an important step towards improving the government’s capacity for sound governance and improving the external oversight of enterprises, the “Golden Tax III” should significantly reduce such rent-seeking donations. In regressions (3) and (4) of Table 9, the effect of the “Golden Tax III” on reducing donations is mainly concentrated in the group with poor corporate governance, which further indirectly indicates that the “Golden Tax III” mainly decreases rent-seeking donations rather than squeezes out market-oriented donations.

4.3. Robustness test

4.3.1. Corporate donation and tax avoidance

The core hypothesis of this paper is that the implicit contract between enterprises and local governments of “Donation in exchange for Tax” will be broken with the launch of “Golden Tax III”. Therefore, there are two key potential assumptions: First, the phenomenon of “tax avoidance by donation” does exist in the sample period; Second, the relationship between donation and tax avoidance has weakened or disappeared after the launch of “Golden Tax Phase III”. In order to verify the above hypothesis, we regress the donation variable (Donation_S) with the tax avoidance variable (Diff_Tax) and tax burden variable (ETR) respectively.

As shown in regressions (1)–(3) of Table 10, in the full sample, corporate donation (Donation_S) is significantly positively correlated with tax avoidance (Diff_Tax) at the 10% level, and this significant positive relationship only exists before the implementation of the “Golden Tax III” (GTP = 0). After the implementation of the “Golden Tax III”, the coefficient between corporate donation and tax avoidance becomes insignificant. In addition, in regressions (4)–(6) of Table 10, we also find that corporate donation (Donation_S) and tax burden (ETR) are significantly negative in the whole sample. When dividing the samples according to the implementation of “Golden Tax III”, we only find a significantly negative relationship in the

| Table 9. Market-oriented donation VS rent-seeking donation. |
|-------------------------------------------------------------|
| (1) Higher selling expenses | (2) Lower selling expenses | (3) Poor corporate governance | (4) Better corporate governance |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Donation_S | Donation_S | Donation_S | Donation_S |
| GTP | −0.014 | −0.146*** | −0.165*** | −0.037 |
| (−0.37) | (−2.72) | (−2.77) | (−0.92) |
| Difference between groups | −0.132*** | −0.165*** | −0.128* |
| (3.97) | (3.15) | |
| Controls | Yes | Yes | Yes | Yes |
| Firm | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes |
| Adj. R2 | 0.018 | 0.017 | 0.016 | 0.022 |
| N | 6515 | 6511 | 4692 | 8334 |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
pre-treatment period. The regression results in Table 10 strongly support the basic logic of this paper, that is, before the implementation of “Golden Tax III”, there existed an implicit contract of “Donation in exchange for Tax”. With the enhancement of tax enforcement and administration capability, “Golden Tax III” broke the former implicit contract.

4.3.2. Exclude potential alternative interpretation

After the implementation of the “Golden Tax III” project, it has become much more difficult for private enterprises to avoid taxes and the actual tax burden has increased. Then, is the reduction in corporate donations caused by the deterioration of cash flow capacity? To exclude this potential alternative interpretation, in Table 11, we set two variables representing corporate discretionary cash flow, namely, pre-tax operating cash flow (PreTax_Cash) and corporate free cash flow (FreeCashFlow) and using the mediation model suggested by Wen et al. (2004) to verify our assertion.

The regression (1) in Table 11 is the baseline regression results, which shows that GTP significantly reduces corporate donation. However, in regression (2), the coefficient of GTP with pre-tax operating cash flow (PreTax_Cash) is not significant, which indicates that GTP does not have a substantial impact on the pre-tax operating cash flow of private enterprises. At this point, the mediating effect test can be terminated, implying that there is no path for the “Golden Tax III” to affect donation by influencing enterprises' discretionary cash flow. In regression (3), pre-tax operating cash flow was added as the control variable, and the coefficient of the main regression did not change at all, which further alleviated the concerns caused by alternative assumptions. Additionally, in regressions (4)–(6) of Table 11, “Golden Tax III” (GTP) still has no significant impact on the free cash flow of enterprises. The regression results in Table 11 alleviate the concern of the alternative interpretation with the findings of this paper and further demonstrate that the reduction of corporate donations by “Golden Tax III” is not due to the deterioration of corporate cash capacity.

4.3.3. Replace the definition of corporate donations

The core variable of this paper is the proportion of donation amount to sales income (Donation_S). Although this variable has been widely used to measure the level of corporate donation, it still can only measure the relative size of donations. In order to alleviate the

| Table 10. Corporate donation and tax avoidance. |
|-----------------------------------------------|
| (1)   | (2)     | (3)     | (4)     | (5)     | (6)     |
|       | Tax Avoidance | Effective Tax Rate |
|-------|----------------|-------------------|
|       | Full sample   | Before implementation | After implementation | Full sample   | Before implementation | After implementation |
| Donation_S | 0.003* | 0.005** | 0.005 | 0.004** | 0.006** | 0.005 |
|       | (1.73) | (2.16) | (1.46) | (−2.04) | (−2.52) | (−1.51) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm   | Yes | Yes | Yes | Yes | Yes | Yes |
| Year   | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. R2 | 0.048 | 0.049 | 0.072 | 0.030 | 0.040 | 0.030 |
| N      | 13,026 | 6255 | 6771 | 13,026 | 6255 | 6771 |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
Table 11. Exclude potential alternative interpretation.

|                | Pre-tax operating cash flow | Corporate free cash flow |
|----------------|----------------------------|--------------------------|
|                | Donation_S | PreTax_Cash | Donation_S | Donation_S | FreeCashFlow | Donation_S |
| GTP            | −0.088***   | −0.009      | −0.088***  | −0.088***  | 0.399        | −0.088***  |
|                | (−2.75)     | (−0.03)     | (−2.75)    | (−2.75)    | (1.16)       | (−2.76)    |
| PreTax_Cash    | 0.001       | (0.81)      |            |            |              |            |
| FreeCashFlow   | 0.001       |             |            |            |              |            |
| Controls       | Yes         | Yes         | Yes        | Yes        | Yes          | Yes        |
| Firm           | Yes         | Yes         | Yes        | Yes        | Yes          | Yes        |
| Year           | Yes         | Yes         | Yes        | Yes        | Yes          | Yes        |
| Adj. R2        | 0.019       | 0.357       | 0.019      | 0.019      | 0.049        | 0.019      |
| N              | 13,026      | 13,026      | 13,026     | 13,026     | 13,026       | 13,026     |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

concern that the change in donation level is due to the change in the denominator, we use the absolute amount of donation (Donation_Money) as a robustness test. In regressions (1)-(2) of Table 12, we find that GTP is significantly negative with the amount of donation (Donation_Money) at least at the 5% level. In terms of economic significance, the amount of donations of private enterprises decreased by 480,000 yuan on average. Moreover, in regressions (3)-(6), we also used the proportion of donation amount in cash received from selling goods and providing services (Donation_SalesCash) and the proportion of donation amount in current assets (Donation_CurrentAsset) as robustness tests. We found that both the absolute amount of donations and the relative ratio of donations declined significantly after the implementation of the “Golden Tax III”.

5. Research conclusions and policy implications

Government tax enforcement and enterprise tax avoidance is a dynamic game process, which is constrained by taxation motivation and taxation technology. The existing researches mainly examine the tax behaviour of tax authorities from the perspective of tax motivation but ignore the change in tax technology. This paper takes the implementation of the “Golden Tax III” as an exogenous shock and uses the staggered DID method to investigate how the improvement of tax administration information technology affects the donation of Chinese private enterprises. The main findings of this paper are as follows:

First, when the government’s tax administration technology is less efficient, private enterprises have a strong incentive to “Donate in exchange for tax”. The implementation of the “Golden Tax III” is based on information sharing and big data analysis. “Golden Tax III” enhances the ability of tax enforcement and administration, inhibits the motivation of enterprise to “Donate in exchange for Tax”, thus significantly reducing the corporate donation level (−21%). In the parallel trend analysis, the estimated coefficients are insignificant during the pre-treatment period, but after the implementation of the “Golden Tax Phase III” project, corporate donation significantly decreases. The results of the parallel trend test prove the reliability of the staggered DID model. Additionally, placebo tests and other robustness analyses were conducted, and the results were consistent.
Table 12. Replace the definition of corporate donations.

|               | (1)          | (2)          | (3)          | (4)          | (5)          | (6)          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Absolute amount of donation (Millions of dollars) | Donation_Money | Donation_Money | Donation_SalesCash | Donation_SalesCash | Donation_CurrentAsset | Donation_CurrentAsset |
| GTP           | −0.444***    | −0.480**     | −0.099***    | −0.099***    | −0.079***    | −0.070***    |
|               | (−2.61)      | (−2.38)      | (−2.94)      | (−2.90)      | (−3.02)      | (−2.63)      |
| Controls      | Yes          | Yes          | Yes          | Yes          | Yes          | Yes          |
| Firm          | Yes          | Yes          | Yes          | Yes          | Yes          | Yes          |
| Year          | Yes          | Yes          | Yes          | Yes          | Yes          | Yes          |
| Adj. R2       | 0.007        | 0.015        | 0.010        | 0.019        | 0.011        | 0.019        |
| N             | 13,026       | 13,026       | 13,026       | 13,026       | 13,026       | 13,026       |

The reported t-statistics are based on robust standard errors adjusted for firm-level clustering. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
Second, in the analysis of the mechanisms. This paper investigates how differences in local tax administration capacity and corporate tax avoidance affect the “Golden Tax III” on corporate donations.

It is found that the effect of “Golden Tax III” on reducing corporate donations is stronger in regions with relatively backward information infrastructure and relatively fewer tax talents, which indicates that “Golden Tax III” plays a more prominent role in regions with weak administrative capacity. Then, this paper demonstrates that the effect of “Golden Tax III” in reducing donations is stronger in enterprises with more related party transactions and more serious tax avoidance. Moreover, this paper finds that the increase in tax administration information technology mainly decreases rent-seeking donations but has no impact on market-oriented donations. These results confirm that the improvement of tax administration information technology can strengthen the government’s public governance ability and regulate CSR behaviour.

Third, this paper uses the mediation model to exclude the alternative interpretation that “The increase of tax burden leads to the decrease of corporate cash capacity and then leads to the decrease of corporate donation”. We further examine the changes in the relationship between corporate donation and tax avoidance and find that the significant negative relationship between corporate donation and tax avoidance only exists in the pre-treatment period. Additionally, our main results remain significant when we replace the definition of corporate donation. All in all, the findings of this study consistently support that the implementation of “Golden Tax III” has effectively broken the implicit contract between private enterprises and the government.

The implications of this study are mainly in two aspects: First, the application of big data, blockchain, and other information technologies will not only enhance tax supervision by government authorities but also affect enterprises’ economic activities. Our paper inspires the regulatory department to improve information technology in the supervision process. Second, Chinese private enterprises prefer strategic donations (Dai et al., 2014; Li et al., 2012) such as using donations for rent-seeking. Based on the findings of this study, the “Golden Tax III” project has hindered the rent-seeking behaviour of enterprises, regulated corporate social responsibility, and enhanced the role of taxation in public governance. In conclusion, this study reveals that information technology will change the information environment of enterprises and will also significantly improve the information access ability of regulators, thus prompting them to make policies more rationally. Future researchers should pay may attention to information reform.

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