Does Big Data Tax Collection and Management Matter to Corporate Social Responsibility?

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Abstract— This paper examines the impact of big data tax collection and management on the corporate social responsibility performance of Chinese A-share listed enterprises from 2018 to 2022. The study finds a significant positive correlation between the two factors. The research not only adds to the existing literature on corporate social responsibility and the effects of big data tax policies, but also offers valuable insights into the modernization of tax collection and administration, as well as the improvement of corporate social responsibility performance.

Keywords— Big data tax collection and administration policies; Corporate social responsibility.

I. INTRODUCTION

China's economy has now shifted towards high-quality development, which prioritizes effective improvement in quality over rapid growth in quantity. Enterprises are expected to take up the responsibility of promoting this development by meeting the interests and needs of stakeholders, achieving harmonious development of economy, society, and environment, and fulfilling their social responsibilities while seeking economic benefits. However, some enterprises focus solely on maximizing their economic benefits, which not only hinders high-quality economic development but also poses hidden dangers to it. Corporate social responsibility (CSR) entails large investment, high risk, and strong externality, which necessitates external governance mechanisms to improve its performance.

Desai, Dyck, and Zingales (2007) suggest that taxation power gives the government a stake in enterprises, making it one of the shareholders. As an external governance mechanism, tax collection and management can effectively supervise and restrain enterprise management behavior to ensure the proper fulfillment of CSR. With the widespread use of big data in various fields, tax authorities have completed the big data construction of tax collection and management using the "Golden Tax Phase III" platform.

The big data tax collection and management can compare and confirm each other based on massive data sources such as the tax system, the sharing of data between government departments, and the Internet tax-related information collection system. It can accurately predict and guide tax-related risks, providing supervision and assurance for enterprises to actively fulfill their social responsibilities (Wang, 2023).

The existing literature shows that the current studies on external factors affecting CSR from the perspective of government intervention mainly focus on government audit, environmental constraints, etc. However, very few scholars have explored the impact of tax collection and management on CSR. Therefore, this paper aims to investigate government intervention through the entry point of tax collection and management.

To expand the perspective of CSR research, this paper utilizes the "quasi-natural experiment" implemented in batches of the "Golden Tax Phase III" project in China. The study aims to explore the effect of big data tax collection and internal control on corporate social responsibility. Through this study, we can gain a better understanding of the impact of tax collection and management on CSR, thereby broadening the scope of CSR research.

II. HYPOTHESIS DEVELOPMENT

The implementation of the "Golden Tax Phase III" project can lead to better information transparency, reduced information asymmetry, and improved corporate social responsibility. Specifically, this project promotes mutual confirmation and sharing of information using big data and other technologies, bringing about integration and sharing of data from various sources. This integration enables different sets of data to complement each other, thus presenting a complete picture of the transaction, while mutual confirmation of data enhances the authenticity of enterprise information, thus narrowing the information gap between internal and external enterprises (Laguir, Staglianò, & Baz, 2015; Guo, Wang, Wang, & Zhang, 2024).

Sharing of data inhibits the opportunistic behavior of management in providing different information to different objects, thereby increasing the cost of such behavior and the transparency of information disclosure. The project also promotes the improvement of accounting information quality, with extensive data tax collection and management enabling the tax department to evaluate the reasonability of various financial data through relevant analysis of the massive data of the upstream and downstream industrial chain (Ouyang & Fang, 2022; Chouaibi, Rossi, & Abdessamed, 2021).

The big data tax collection and management system facilitates the comparison of data between enterprises with transaction relationships and enables the identification of abnormal profit data, thereby significantly reducing the whitewashing space of enterprises' accounting information and further alleviating the problem of information asymmetry between enterprises and their stakeholders (Neuman & Sheu, 2021). This improvement in the information environment

restrains the opportunistic behavior of management, provides a guarantee for the rights protection of stakeholders, and helps to improve the enthusiasm of enterprises to fulfill their social responsibilities.

Based on these findings, this paper proposes H1:

H1: The implementation of big data tax collection has improved corporate social responsibility performance.

III. MATERIALS AND METHODS

A. Sample and Data

This research paper focuses on Chinese A-share listed enterprises from 2018 to 2022. The initial sample data was screened as follows:

1) Enterprises with ST, *ST and PT added to their names are excluded from the sample due to their current business difficulties, which might affect the accuracy of the results.

2) Financial and insurance industry enterprises were excluded from the sample as their business model, report structure and data are different from those of other industries, and this could impact the comparability of data.

3) Enterprises with missing original data were also eliminated from the sample.

After the above screening, 870 annual observations were obtained and subjected to double-tailed treatment at a 1% level for all continuous variables.

B. Main Variables

This paper uses Hexun.com CSR evaluation data to determine the level of CSR performance. A higher score indicates better CSR performance. Additionally, the virtual variable DT, established by the "Golden Tax Phase III" project, is utilized to describe the big data tax collection and management. If the office area (a) where enterprise (i) is located implements the "Golden Tax Phase III" project in year (t), region (a) will take a value of 1 in year (t) and following years. Otherwise, it will take a value of 0. The definitions of control variables can be found in Table 1. *roa* as all capital earnings rate, *lev* as asset-liability ratio, *err* as sustainable growth rate, *age* as business year, *rear* as retained-earnings-to-asset ratio

TABLE 1. Definition of variables.

Symbol	computational method
roa	Net income / Total assets
lev	The value is 1 when the state holding is held, otherwise it is 0
err	Yield on equity capital (1-dividend payout ratio)
age	Current statistical deadline-time of enterprise establishment (year)
rear	(Surplus reserve + undistributed profit) / total assets

C. Model

To test H1, the following OLS model was established:

$$\text{CSR}_{i,t} = \alpha_0 + \alpha_1 \text{DT}_{i,t} + \alpha_2 \sum \text{Control}_{i,t} + \mu_i + \varphi_t + \varepsilon_{i,t}$$

Control is the set of control variables; μ_i and φ_t are the industry fixed effect and time fixed effect respectively. If the coefficients of DT is significant, hypothesis 1 is valid.

D. Descriptive Statistics

As indicated in Table 2, there are significant variations in the corporate social responsibility (CSR) performance among different enterprises, with the maximum value being 68.632 and the minimum value being -1.84. During the sample period, the average value of big data tax collection and administration (DT) was 0.337, which means that 33.7% of the fulfillment level of CSR among corporations was influenced by big data tax collection and administration.

TABLE 2. Descriptive statistics

Variable	Obs	Mean	Std.	Min	Max
CSR	870	23.502	16.284	-1.840	68.632
DT	870	0.337	0.423	0	1
roa	870	.041	.056	-.427	.219
lev	870	.375	.201	.029	.975
err	870	.044	.096	-.744	.47
age	870	16.342	5.229	4	31
cer	870	2.019	2.415	1.03	39.45
rear	870	.206	.141	-.489	.693

IV. RESULTS

As indicated in Table 3, the coefficient of big data tax collection and management (DT) is 6.792, which is significant at a 1% level, after gradually adding the fixed effect and control variables. This confirms the significant positive impact of big data tax collection and management on enhancing the level of corporate social responsibility performance. Supposing H1 holds true.

TABLE 3. Baseline regression analysis

	(1)	(2)	(8)
	CSR	CSR	CSR
GT	8.357***	9.916***	6.792***
	(0.000)	(0.000)	(0.000)
roa			2.416**
			(0.001)
lev			2.940***
			(0.000)
err			0.240
			(0.540)
age			0.010*
			(0.014)
cer			-0.044***
			(0.000)
rear			1.712***
			(0.000)
Ind	No	Yes	Yes
Year	No	Yes	Yes
_cons	8.670***	9.576***	7.491***
	(0.000)	(0.000)	(0.000)
N	870	870	870
adj.R2	0.130	0.348	0.576

*** $p<0.01$, ** $p<0.05$, * $p<0.1$; The value in brackets is t value

V. DISCUSSION

This paper employs both literature research and empirical analysis methods to investigate the impact of big data tax collection and management on corporate social responsibility. Through the implementation of the "Golden Tax Phase III" project, big data tax collection and management has been made possible, and this has led to significant improvements in the quality of enterprise information disclosure, information transparency, and active social responsibility. In addition, it has also increased the risk of tax avoidance and difficulty, standardized tax collection and management behaviors, and

reduced the space for opportunistic behavior, leading to a higher level of governance, a reduction in agency problems, and the protection of stakeholders' rights and interests.

Therefore, we recommend that tax authorities continue to deepen the modernization of tax collection and management by leveraging big data and other emerging technologies to enhance their tax governance capabilities. The "Golden Tax Phase III" project is a prime example of this modernization effort, and its implementation has had positive spillover effects on both enterprises and society.

Therefore, it is imperative that tax authorities further strengthen tax collection and administration modernization and narrow regional differences to fully realize the modernization of tax management ability. By doing so, they can better address social responsibility issues and empower themselves to solve them more effectively.

REFERENCES

[1] Chouaibi, J., Rossi, M., & Abdessamed, N. (2021). The effect of corporate social responsibility practices on tax avoidance: an empirical study in the French context. Competitiveness Review, 32(3), 326–349. https://doi.org/10.1108/cr-04-2021-0062

[2] Desai, M. A., Dyck, I. J. A., & Zingales, L. (2007). Theft and taxes☆. Journal of Financial Economics, 84(3), 591–623. https://doi.org/10.1016/j.jfineco.2006.05.005

[3] Guo, Y., Wang, J., Wang, H., & Zhang, F. (2024). The impact of big data tax collection and management on inefficient investment of enterprises — A quasi-natural experiment based on the golden tax project III. International Review of Economics & Finance. https://doi.org/10.1016/j.iref.2024.02.012

[4] Laguir, I., Staglianò, R., & Baz, J. E. (2015). Does corporate social responsibility affect corporate tax aggressiveness? Journal of Cleaner Production, 107, 662–675. https://doi.org/10.1016/j.jclepro.2015.05.059

[5] Neuman, E. L., & Sheu, R. (2021). Big data analytics in IRS audit procedures and its effects on tax Compliance: A Moderated mediation analysis. Journal of the American Taxation Association, 44(2), 97–113. https://doi.org/10.2308/jata-2020-038

[6] Ouyang, S., & Fang, Y. (2022). Enterprise Financial and Tax Risk Management Methods under the Background of Big Data. Mathematical Problems in Engineering, 2022, 1–13. https://doi.org/10.1155/2022/5831866

[7] Wang, Y. (2023). Application of big data technology platform based on deep learning in smart tax evaluation system. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-2699236/v1