Economic Growth Centre
Economics, School of Social Sciences
Nanyang Technological University
14 Nanyang Drive
Singapore 637332

BIG DATA TAX ENFORCEMENT AND CORPORATE TAX DIGITAL TRANSFORMATION: EVIDENCE FROM CHINA

Qi Shao
Danhua Deng
Xinyang Li
Tianyu Bai

February 2025

EGC Report No: 2025/07

HSS-04-90A
Tel: +65 67906073
Email: D-EGC@ntu.edu.sg

Economic Growth Centre Working Paper Series

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

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Big Data Tax Enforcement and Corporate Tax Digital Transformation: Evidence from China

Qi Shao [a, b], Danhua Deng [a, *], Xinyang Li [c], Tianyu Bai [d]

[a] School of Public Finance and Taxation, Central University of Finance and Economics, Beijing, China

[b] Economic Growth Centre, School of Social Sciences, Nanyang Technological University, Singapore

[c] School of Economics and Management, Tsinghua University, Beijing, China

[d] School of Business, Sun Yat-sen University, Guangzhou, China

[*] Corresponding author.

E-mail addresses: shao_qi_cn@outlook.com (Q. Shao), dengdanhua2022@163.com (D. Deng), davis-li@163.com (X. Li), baity3@mail2.sysu.edu.cn (T. Bai).

Big Data Tax Enforcement and Corporate Tax Digital Transformation: Evidence from China

Abstract: This study uses the implementation of the Golden Tax Project Phase III (CTAIS-3) in China as a quasi-natural experiment to explore the impact of big data tax enforcement on the corporate tax digital transformation. By constructing the corporate tax digital transformation index, the findings reveal that CTAIS-3 significantly promotes corporate tax digital transformation through compliance and cost effects.

Keywords: Big Data Tax Enforcement; Corporate Tax Digital Transformation; Compliance Effect; Cost Effect

JEL classification: H25; M15; O33

1. Introduction

Emerging tax enforcement technologies, such as big data, cloud computing, and mobile technology, are reshaping interactions between tax authorities and taxpayers. Tax authorities in countries such as the United Kingdom, New Zealand and China are gradually exploring these innovative initiatives through pilot projects (OECD, 2017).[1] These new tax enforcement methods have significantly enhanced the effectiveness of tax enforcement. In response to this transformation, traditional labor-intensive approaches to corporate tax management can no longer meet the demands of the new era, and promoting the corporate tax digital transformation has become a key direction for corporate reform. Existing literature has extensively examined the impact of big data tax enforcement on corporate behaviors, such as tax compliance (Bø et al., 2015), ESG performance (Hai et al., 2024), and job creation (Cheng and Wei, 2024). However, research on whether and how big data tax enforcement drives corporate tax digital transformation remains limited.

This paper investigates the impact of big data tax enforcement on corporate tax digital transformation. To achieve this, we combine text analysis with machine learning to construct a measure for corporate tax digital transformation. Additionally, the phased implementation of CTAIS-3 across provinces in China since 2013 provides a quasi-natural experiment for our study. CTAIS-3 leverages technologies such as big data and cloud computing to centralize tax data, representing a major reform in advancing tax enforcement informatization in China. Our findings reveal that big data tax enforcement drives corporate tax digital transformation. The baseline results remain robust after a series of robustness checks. Mechanism analysis suggests that big data tax enforcement enhances the level of corporate tax digital transformation through compliance and cost effects.

The contributions of this study are threefold. First, our research extends the literature on corporate digital transformation. While there is abundant research on corporate digital transformation, the area of corporate tax digital transformation remains unexplored (Bai et al., 2024; Nguyen et al., 2024). We innovatively construct an index to measure the degree of corporate tax digital transformation, providing valuable reference for future studies in this field. Second, the findings enrich the literature on corporate tax management (Minnick and Noga, 2010). We qualitatively analyze the factors influencing corporate tax digital transformation and find that it is shaped not only by firm-specific factors but also by advancements in tax enforcement technologies.

[1] https://www.iras.gov.sg/media/docs/default-source/uploadedfiles/pdf/technological-disruption-in-tax-administration---an-interview-with-mr-peter-green.pdf?sfvrsn=ff5ca1dd_3

Third, our study contributes to the literature on the impact of big data tax enforcement on corporate decision-making (Bellon et al., 2022; Hai et al, 2024). We systematically explore whether and how big data tax enforcement facilitates corporate tax digital transformation. This provides a new perspective on how emerging tax enforcement technologies influence corporate behavior, particularly in China's rapidly developing digital economy.

2. Policy background and hypothesis development

2.1 Policy background

China launched CTAIS-3 in 2013. This initiative leverages big data analytics, mobile intelligent services, and information sharing to significantly transform the tax collection methods of China's tax authorities. It integrates business processes, technology, and the national tax system, thereby advancing the digital transformation of tax enforcement in China. In 2013, Chongqing, Shanxi, and Shandong were the first provinces to pilot the CTAIS-3, which was subsequently rolled out nationwide. The specific implementation timeline is shown in Fig. 1. This phased pilot implementation provides a quasi-natural experiment for constructing a multi-period difference-in-differences model to study the impact of the CTAIS-3.

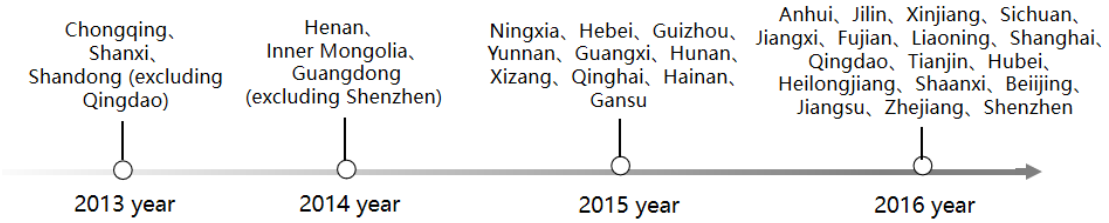

Fig. 1. Implementation Time of CTAIS-3 in Each Pilot Area

2.2 Hypothesis development

Big data tax enforcement could promote corporate tax digital transformation. On the one hand, it strengthens tax oversight on firms (Li et al., 2020). This reform places higher demands on corporate tax compliance (Slemrod, 2019). Firms with better corporate governance and higher management quality have stronger compliance preferences (Desai et al., 2007). As a result, these firms are more motivated to adopt tax digital transformation (Chen and Srinivasan, 2024). Therefore, we argue that firms with higher levels of corporate governance are more strongly driven to digitalize their tax management after the implementation of big data tax enforcement.

On the other hand, big data tax enforcement typically requires taxpayers to transfer their tax-related data to the tax authority's online reporting system. This process not only increases costs but also raises the likelihood of errors (OECD, 2020).[2] By adopting tax digitalized, firms can securely and efficiently integrate tax-related data into their own digital systems and devices to automate the calculation, reporting, and payment of taxes. This enhances firms' organizational efficiency (Hamilton and Stekelberg, 2016; Schmitz and Leoni, 2019). Therefore, we argue that firms with higher tax burdens are more motivated to carry out tax digital transformation after the implementation of big data tax enforcement. This shift helps them reduce overall tax-related costs and improve tax compliance efficiency (Bresnahan et al., 2002).

In summary, we propose the following hypotheses:

H1: Big data tax enforcement effectively promotes corporate tax digital transformation.

H2: Big data tax enforcement drives corporate tax digital transformation through compliance and cost effects.

[2] https://www.oecd.org/en/topics/digital-transformation-of-tax-administration.html

3. Research design

3.1. Data

Our initial sample consists of A-share listed companies in China from 2010 to 2021. We exclude financial firms, ST (special treatment) firms, firms with an effective tax rate less than 0 or greater than 1, and firms with missing key variables.[3] Ultimately, we obtain a final sample comprising 2,914 firms with 23,016 observations.

The data on the corporate tax digital transformation are sourced from firms' annual financial reports, while other variables are obtained from the China Stock Market & Accounting Research Database. To mitigate the impact of outliers, all continuous variables are winsorized at the 1% level.

3.2. Measurement of Corporate Tax Digital Transformation

Corporate tax digital transformation focuses on the integration of business, finance, tax, and invoicing processes. It leverages digital technologies to enhance related production and management activities, aiming to achieve "data-driven tax management" and "invoice-based tax management", thereby helping firms mitigate tax risks (Hamilton and Stekelberg, 2016).

Existing literature has not yet developed a measurement for corporate tax digital transformation. Drawing on methods for measuring corporate digital transformation (Bai et al., 2024), we construct an index for corporate tax digital transformation. First, we integrate the indicator dimensions provided by ztaxcloud and PwC, and refer to recent policy documents and trend reports on paperless financial and tax processes as well as digital taxation to identify keywords that characterize the level of corporate tax digital transformation.[4] Second, to avoid biases caused by manually selected keywords, we combine text analysis with machine learning. Referring to the method proposed by Mikolov et al. (2013), we use the Continuous Bag-of-Words (CBOW) model to semantically expand the constructed keywords. This process results in a corporate tax digital transformation dictionary tailored to China's context, which is presented in Appendix A. Finally, using Python, we calculate the number of keywords from the tax digital transformation dictionary appearing in firms' annual reports. We then take the natural logarithm of the keyword count plus one (*lnTaxWords*) as the index value for tax digital transformation.

3.3. Empirical model

To examine the impact of big data tax enforcement on corporate tax digital transformation, we construct the following DID model:

$$Taxdigital_{i,p,t} = \alpha + \beta GTP_{p,t} + \gamma Controls_{i,p,t} + \delta_i + \mu_t + \varepsilon_{i,p,t} \quad (1)$$

Where Taxdigital represents the degree of corporate tax digital transformation, with the construction method detailed in Section 3.2. *GTP* is the key explanatory variable, taking the value of 1 if CTAIS-3 has been implemented in province *p* in year *t*, and 0 otherwise. Controls denotes a set of control variables, with detailed definitions provided in Table 1. Subscripts *i*, *p* and *t* represent firm, province, and year, respectively. In addition, we control for firm and year fixed effects. Considering the staggered pilot implementation of CTAIS-3 across provinces, we use robust standard errors clustered at the provincial level.

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[3] Effective Tax Rate = Taxes and Surcharges / Total Profit. It measures the actual tax burden borne by firms over a specific period.

[4] https://www.pwccn.com/zh/blog/state-owned-enterprise-soe/tax-digital-maturity-evaluation-system-jan2023.html; http://business.china.com.cn/2022-04/14/content_41939301.html; "Notice on Standardizing the Reimbursement, Accounting, and Archiving of Electronic Accounting Vouchers" (CaiKuai [2020] No. 6); "Opinions on Further Deepening the Reform of Tax Administration" (ZhongBanFa [2021] No. 12); iResearch, *2022 China Financial and Tax Digitalization Industry Research Report;* EO Intelligence, *2022 Research Report on the Digitalization of Financial and Tax Development in SMEs.*

Table 1
Variable definitions.

Variable	Definition
lnTaxWords	The natural logarithm of one plus the number of keywords related to corporate tax digital transformation in a firm's annual report.
GTP	A dummy variable that equals 1 if the province where the firm is located has implemented CTAIS-3 in that year, and 0 otherwise.
PPE	The ratio of net fixed assets to total assets.
Invt	The ratio of investment expenditure to total expenditure.
SOE	A dummy variable that equals 1 if the firm is a state-owned enterprise, and 0 otherwise.
SBal	The ratio of the combined shareholding of the 2nd to 5th largest shareholders to the shareholding of the largest shareholder.
HOFS	A dummy variable that equals 1 if the firm holds shares in other financial institutions, and 0 otherwise.
CoPos	A dummy variable that equals 1 if the chairman and the general manager are the same person, and 0 otherwise.

4. Empirical result

4.1 Descriptive statistics

The descriptive statistics of the main variables are presented in Table 2. The standard deviation of *lnTaxWords* is 2.603, which is greater than the mean. This indicates a significant variation in the degree of tax digital transformation across firms.

Table 2
Descriptive statistics.

VarName	Obs	Mean	SD	Min	Max
lnTaxWords	23016	2.093	2.603	0.000	7.171
GTP	23016	0.610	0.488	0.000	1.000
PPE	23015	0.223	0.165	0.001	0.762
Invt	22969	0.051	0.047	0.000	0.270
SOE	23016	0.415	0.493	0.000	1.000
SBal	23014	0.689	0.583	0.017	2.896
HOFS	23016	0.069	0.254	0.000	1.000
CoPos	22473	0.253	0.434	0.000	1.000

4.2 Baseline results

Table 3 reports the baseline regression results. Column (1) includes only firm fixed effects, Column (2) adds year fixed effects, and Column (3) incorporates control variables. Across Columns (1) to (3), the coefficient of *GTP* is consistently positive and statistically significant. This indicates that the implementation of CTAIS-3 significantly promotes corporate tax digital transformation.

Table 3
Baseline results.

	(1) *lnTaxWords*	(2) *lnTaxWords*	(3) *lnTaxWords*
GTP	0.716***	0.151**	0.175**
	(13.07)	(2.13)	(2.38)

PPE			-0.962***
			(-4.63)
Invt			0.277
			(0.72)
SOE			-0.315*
			(-1.84)
SBal			0.093
			(1.38)
HOFS			-0.019
			(-0.28)
CoPos			0.152**
			(2.59)
Constant	1.657***	1.535***	1.789***
	(49.58)	(21.53)	(13.95)
Year FE	N	Y	Y
Firm FE	Y	Y	Y
N	23016	23016	22427
Adj. R^2	0.027	0.043	0.045

Note: T-statistics are shown in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

4.3 Robustness tests

4.3.1 Parallel trend test

We employ an event study approach to conduct a parallel trend test for the multi-period DID, using the following model:

$$Taxdigital_{i,p,t} = \alpha + \sum_{k\geq -m}^{n} \beta_k GTP_{p,t-k} + \gamma Controls_{i,p,t} + \delta_i + \mu_t + \varepsilon_{i,p,t} \quad (2)$$

Where $GTP_{p,t-k}$ equals 1 if firm *i*'s location implemented CTAIS-3 in year *t-k*, and 0 otherwise (*m* and *n* represent the number of periods before and after the implementation, respectively). Fig. 2. illustrates the results of the parallel trend test. Before the implementation of CTAIS-3, the coefficients are not statistically significant, indicating no significant difference in the degree of tax digital transformation between the treatment and control groups. This validates the parallel trend assumption.

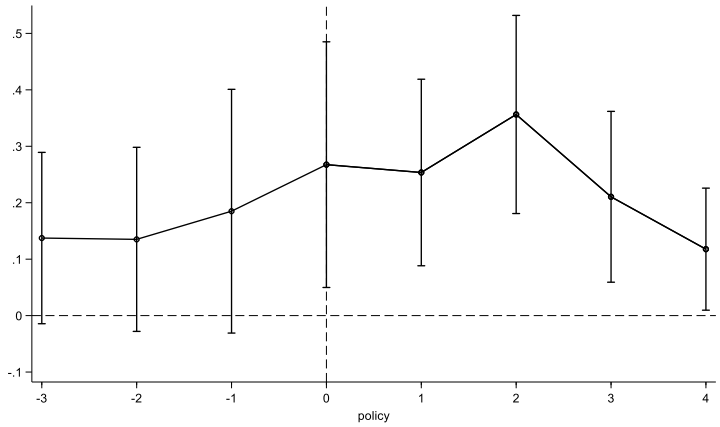

Fig. 2. Parallel trend test

4.3.2 Placebo tests

We set the year prior to the actual implementation of CTAIS-3 as a false implementation time point and construct a dummy variable, *GTP1*, as a placebo. We then test this using Equation (1). The regression results are shown in Column (1) of Table 4. The coefficient of *GTP1* is not statistically significant. Additionally, for each sample firm, we randomly assign values to *GTP* and perform regressions based on Equation (1), repeating this process 500 times. The distribution of the false coefficients for *GTP* is shown in Fig. 3. Most of the false coefficients are concentrated near zero and are not significant at the 10% level, showing a clear difference from the true coefficient. These findings indicate that the baseline regression results are not driven by unobservable factors.

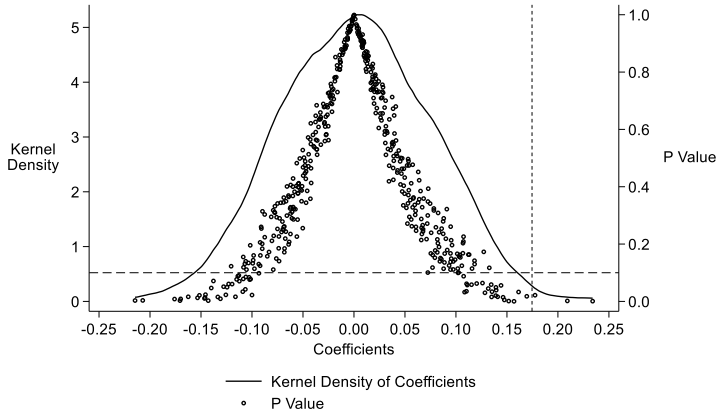

Fig. 3. Placebo test

4.3.3 Change the clustering level

Although CTAIS-3 is implemented at the provincial level, considering the temporal correlation in the level of corporate tax digital transformation, we cluster the robust standard errors at the firm level. The estimation results are presented in Column (2) of Table 4, where the coefficient of *GTP* remains significantly positive.

4.3.4 Include industry-year interaction effects

To eliminate the influence of industry-level characteristics that vary over time, we further control for industry-year interaction effects. The regression results, shown in Column (3) of Table 4, indicate that the coefficient of *GTP* remains significantly positive.

Table 4

Robustness tests.

	(1) *lnTaxWords*	(2) *lnTaxWords*	(3) *lnTaxWords*
GTP		0.175**	0.175**
		(2.00)	(2.42)
GTP1	0.118		
	(1.43)		
PPE	-0.955***	-0.962***	-0.934***
	(-4.58)	(-3.53)	(-4.41)
Invt	0.278	0.277	0.286
	(0.73)	(0.55)	(0.76)
SOE	-0.313*	-0.315**	-0.322*
	(-1.83)	(-1.98)	(-1.94)

SBal	0.091	0.093	0.092
	(1.35)	(1.27)	(1.38)
HOFS	-0.018	-0.019	-0.022
	(-0.25)	(-0.20)	(-0.33)
CoPos	0.152**	0.152**	0.153**
	(2.59)	(2.08)	(2.58)
GTP		0.175**	0.175**
		(2.00)	(2.42)
Constant	1.787***	1.789***	1.635***
	(13.93)	(14.17)	(10.93)
Year FE	Y	Y	Y
Firm FE	Y	Y	Y
Industry - Year	N	N	Y
N	22427	22427	22427
Adj. R^2	0.045	0.045	0.046

4.4 Potential mechanism

4.4.1 Compliance Effect

The CTAIS-3 strengthens tax oversight on firms and imposes higher compliance requirements. As a result, firms with higher governance levels and stronger compliance preferences are more motivated to achieve compliance through tax digital transformation (Boone and White, 2015). We use the proportion of company shares held by institutional investors (*InsHold*) as a proxy for corporate governance level. Additionally, we define a dummy variable, *DInsHold*, which equals 1 if the institutional ownership ratio is above the median, and 0 otherwise. We incorporate *DInsHold* and its interaction with *GTP* into Equation (1) for regression analysis. The estimation results are presented in Columns (1) and (2) of Table 5. The coefficient of the interaction term between *GTP* and *DInsHold* is significantly positive, indicating that the positive effect of CTAIS-3 on tax digital transformation is more pronounced in firms with higher institutional ownership.

4.4.2 Cost Effect

The CTAIS-3 imposes stricter requirements for firms to report tax-related data, increasing their tax compliance costs. Therefore, firms with higher effective tax rates and greater tax burdens are more motivated to adopt tax digital transformation to reduce costs and improve efficiency (Bresnahan et al., 2002). We measure the effective tax rate (*Taxrate*) as the ratio of the sum of taxes and surcharges to total profit. Additionally, we define a dummy variable, *DTaxrate*, which equals 1 if the firm's effective tax rate is above the median, and 0 otherwise. We include *DTaxrate* and its interaction with *GTP* in Equation (1) for regression analysis. The estimation results, shown in Columns (3) and (4) of Table 5, indicate that the coefficient of the interaction term between *GTP* and *DTaxrate* is significantly positive. This suggests that firms with higher effective tax rates experience a greater increase in tax digital transformation following the implementation of CTAIS-3.

Table 5

Potential mechanism.

	(1) *lnTaxWords*	(2) *lnTaxWords*	(3) *lnTaxWords*	(4) *lnTaxWords*
GTP	0.061	0.094	0.045	0.070

	(0.76)	(1.20)	(0.64)	(0.98)
DInsHold	-0.028	-0.035		
	(-0.41)	(-0.48)		
GTP×DInsHold	0.180*	0.161*		
	(1.96)	(1.71)		
DTaxrate			-0.189***	-0.167***
			(-3.33)	(-2.86)
GTP×DTaxrate			0.202***	0.198***
			(3.36)	(3.26)
PPE		-0.965***		-0.927***
		(-4.77)		(-4.47)
Invt		0.259		0.233
		(0.67)		(0.61)
SOE		-0.310*		-0.303*
		(-1.82)		(-1.77)
SBal		0.088		0.089
		(1.35)		(1.33)
HOFS		-0.006		-0.004
		(-0.09)		(-0.05)
CoPos		0.151**		0.150**
		(2.60)		(2.55)
Constant	1.553***	1.812***	1.620***	1.855***
	(20.00)	(14.90)	(21.92)	(14.26)
Year FE	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
N	23016	22427	23016	22427
Adj. R^2	0.044	0.045	0.044	0.046

5. Conclusion

Using a sample of A-share listed companies in China from 2010 to 2021, we examine the impact of big data tax enforcement on corporate tax digital transformation. Leveraging CTAIS-3 as a quasi-natural experiment and constructing an innovative measure of corporate tax digital transformation, we find that big data tax enforcement effectively promotes the corporate tax digital transformation process. This finding remains consistent across various robustness checks. Mechanism analysis reveals that big data tax enforcement facilitates corporate tax digital transformation through two channels: strengthening tax oversight and increasing tax compliance costs. Our study demonstrates that the advancement of tax digital transformation by firms depends not only on their own characteristics but also on the technological progress of tax enforcement. This research deepens the understanding of how new tax enforcement technologies influence corporate behavior and lays a foundation for future studies on corporate tax digital transformation.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

Bai, Y., Song, Y., Cui, S., 2024. Professions need professional talents: executives with internet experience and digital transformation of manufacturing companies. Financ. Res. Lett. 70, 106264. https://doi.org/10.1016/j.frl.2024.106264.

Bellon, M., Dabla-Norris, E., Khalid, S., Lima, F., 2022. Digitalization to improve tax compliance: evidence from VAT e-invoicing in Peru. J. Public Econ. 210, 104661. https://doi.org/10.1016/j.jpubeco.2022.104661.

Bø, E. E., Slemrod, J., Thoresen, T. O., 2015. Taxes on the internet: deterrence effects of public disclosure. Am. Econ. J. Econ. Policy. 7 (1), 36–62. https://doi.org/10.1257/pol.20130330.

Boone, A., White, J., 2015. The effect of institutional ownership on firm transparency and information production. J. Financ. Econ. 117 (3), 508–533. https://doi.org/10.1016/j.jfineco.2015.05.008.

Bresnahan, T. F., Brynjolfsson, E., Hitt, L. M., 2002. Information technology, workplace organization, and the demand for skilled labor: firm-level evidence. Q. J. Econ. 117 (1), 339–376. https://doi.org/10.1162/003355302753399526.

Chen, W., Srinivasan, S., 2024. Going digital: implications for firm value and performance. Rev. Account. Stud. 29, 1619–1665. https://doi.org/10.1007/s11142-023-09753-0.

Cheng, J., Wei, H., 2024. Digital tax collection and corporate job creation: an analysis based on the quasi-natural experiment of golden tax phase III. Financ. Res. Lett. 105687. https://doi.org/10.1016/j.frl.2024.105687.

Desai, M. A., Dyck, A., Zingales, L., 2007. Theft and taxes. J. Financ. Econ. 84 (3), 591–623. https://doi.org/10.1016/j.jfineco.2006.05.005.

Hai, B., Shi, H., Piao, T., Dou, Z., 2024. Digitalization of tax administration and its impact on corporate ESG performance. Financ. Res. Lett. 68, 105791. https://doi.org/10.1016/j.frl.2024.105791.

Hamilton, R., Stekelberg, J., 2016. The effect of high-quality information technology on corporate tax avoidance and tax risk. J. Inf. Syst. 31 (2), 83–106. https://doi.org/10.2139/ssrn.2635873.

Li, J., Wang, X., Wu, Y., 2020. Can government improve tax compliance by adopting advanced information technology? Evidence from the golden tax project III in China. Econ. Model. 93, 384–397. https://doi.org/10.1016/j.econmod.2020.08.009.

Mikolov, T., Sutskever, L., Chen, K., Corrado, G., Dean, J., 2013. Distributed representations of words and phrases and their compositionality. Adv. Neural Inf. Process. Syst. 26, 3111–3119. https://doi.org/10.48550/arXiv.1310.4546.

Minnick, K., Noga, T., 2010. Do corporate governance characteristics influence tax management? J. Corp. Financ. 16 (5), 703–718. https://doi.org/10.1016/j.jcorpfin.2010.08.005.

Nguyen, T., Song, G., Zhao, S., Zuo, C., 2024. Market competition and digital transformation in firms. Financ. Res. Lett. 106684. https://doi.org/10.1016/j.frl.2024.106684.

Schmitz, J., Leoni, G., 2019. Accounting and auditing at the time of blockchain technology: a research agenda. Aust. Account. Rev. 29 (3), 1–12. https://doi.org/10.1111/auar.12286.

Slemrod, J., 2019. Tax compliance and enforcement. J. Econ. Lit. 57 (4), 904–954. https://doi.org/10.1257/jel.20181437.

Appendix A Corporate tax digital transformation dictionary

Table A.1 presents the corporate tax digital transformation dictionary we develop. The dictionary is divided into five dimensions: top-level strategic design, tax teams, business and process design, data and technology support, as well as control, risk, and security.

Table A.1

Corporate tax digital transformation dictionary.

Categories	Keywords
Top-level strategic design	Financial and tax digital transformation, Tax digital transformation, Financial digital transformation, Tax systems, Integration of business, finance, and tax, Financial and tax integration, Tax integration, Digital tax management, Electronic finance and tax, The Golden Tax Project, Digital finance and tax, Electronic taxation, Electronic finance, Cloud-based accounting, Real-time finance, Electronic accounting, Digital taxation, Internet plus taxation, Digital financial management, Automated finance, Business and finance integration, Data-driven tax management, Digital tax, Tax informatization, Information-based tax enforcement, Internet taxation, Internet-based tax enforcement, and so on.
Tax teams	Tax officer, Tax manager, Tax consultant, Tax department, Tax team, and so on.
Business and process design	Corporate financial planning, Online financial planning, Financial sharing, Financial center, Tax sharing, Tax center, Business process automation, Cloud invoicing, Automated invoicing, Tax process automation, Automated tax filing, Electronic invoices, Electronic filing, Invoice verification, Fully electronic invoices, Automated bookkeeping, Automated reconciliation, Automated auditing, Internet tax services, Online tax filing, Digital auditing, Financial and tax consulting services, Electronic tax filing, Online financial management, Online tax services, Electronic invoicing, Electronic receipts, Electronic seals, Electronic vouchers, Automated filing, Intelligent filing, E-invoices, Automated tax payment, Automated tax processing, Automated invoice issuance, Automated tax calculation, Automated prepayment, Automated tax settlement, Tax calculation, Automated tax collection, Automated tax levy, Automated tax assessment, Automated tax refund, Tax analysis, Unified invoices, Automated tax deduction, and so on.
Data and technology support	Financial and tax cloud, Tax cloud, Cloud taxation, Financial cloud, Cloud financial management, Shared center, Shared service center, Cloud financial services, Electronic invoice system, Financial and tax cloud services, Financial cloud services, Business process informatization, Financial informatization, Expense control system, Invoice management system, Financial and tax robots, Financial data visualization, Tax information system, Accounting information system, Financial management system, Financial information system, Tax management system, Tax data analysis, Tax data management, Tax data applications, Tax data integration, Financial and tax software, Financial audit technology, Data-driven taxation, Financial data analysis, Financial intelligent analysis, Financial big data, Tax big data

	analysis, Automated accounting, Real-time financial data, Financial predictive analysis, Financial big data analysis, Financial planning tools, Tax cloud platform, Financial cloud solutions, Financial and tax cloud platform, ERP, Informatization management tools, CRM, Paperless, Office automation systems, RPA, Tax data, Tax information, Tax governance information, Electronic signature, Tax filing information, Tax processing information, Invoice issuance system, Invoice system, Invoice information, Invoice information system, Tax management system, Tax calculation information, Tax calculation data, Tax data, Tax-related data, Tax-related information, Original voucher system, Original voucher management, Data sharing, Data analysis, Tax database, Information flow, Public data, and so on.
Control, risk, and security	Tax big data, Financial and tax big data, Taxation big data, Financial risk management, Tax data analysis, Financial risk early warning, Data risk control, Data security, Data backup, and so on.