

A Study on Algorithmic Oversight and the Protection of Rights in Tax Administration in the Age of Artificial Intelligence

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Abstract: As a core driver of industrial transformation and digital governance, artificial intelligence is propelling China's tax governance from digitalization toward intelligentization. Currently, algorithmic technologies have been widely applied in tax administration scenarios such as intelligent consultation, personalized services, and tax risk identification, playing a significant role in enhancing administrative efficiency, optimizing taxpayer services, and accurately preventing tax revenue leakage. However, issues inherent to algorithms—such as their “black-box” nature and data bias—present a series of challenges for tax governance. China's regulation of tax algorithms faces difficulties such as insufficient legislative provisions, a lack of end-to-end oversight, and unclear boundaries of responsibility; taxpayers' rights to information, privacy, and remedies are difficult to fully safeguard due to the opacity of algorithmic processes, data misuse, and difficulties in providing evidence. To address these issues, China can draw on the experiences of the European Union, Germany, the United States, and other countries in algorithm regulation and rights protection. This involves improving legislation related to digital tax collection, establishing full-lifecycle regulation of algorithms, clarifying the auxiliary role of algorithms in tax administration, and building a system to safeguard taxpayers' rights.

Keywords: Smart Taxation; Algorithm Governance; Rule of Law in Taxation; Taxpayer Rights

Introduction

As the core driving force behind a new wave of industrial transformation, artificial intelligence is profoundly reshaping the way human society produces and lives. The iterative upgrades in information and communication technologies are propelling a comprehensive leap in social productivity, and global tax administration is entering a new phase of digital and intelligent transformation. Tax authorities around the world are continuously pursuing digital transformation and intelligent upgrades. Leveraging massive amounts of tax big data and utilizing cutting-edge technologies such as artificial intelligence, machine learning, and algorithms, they are enhancing decision-making and enforcement in tax administration. Against this backdrop, China's tax governance is also undergoing a critical transition from digitization to intelligence, entering a new phase of tax administration centered on smart taxation.^[1] It has now advanced to a new stage where artificial intelligence technology serves as the core driving force.

In the field of taxation, leveraging the integration of artificial intelligence and big data enables the intelligent identification and accurate prediction of tax risks, drives improvements in the quality and efficiency of tax administration, provides market entities with round-the-clock, tailored tax-related services, and effectively reduces the costs of tax compliance. While artificial intelligence technology creates favorable conditions for the transformation and upgrading of tax administration, it also gives rise to a series of new governance challenges and practical difficulties. First, technical and ethical issues such as algorithmic black boxes and algorithmic bias are becoming increasingly prominent. How to effectively prevent problems arising from the application of technology and promote a profound transformation of the tax administration system toward intelligence and standardization has become a critical issue that urgently needs to be addressed. Second, the current tax system still suffers from a lack of adaptability. In the face of phenomena such as tax base erosion, tax burden imbalances, and regional disparities in tax distribution caused by the development of artificial intelligence, improvements must be made at the level of tax system design. This will properly address issues such as the infringement of taxpayer rights resulting from systemic shortcomings, thereby ensuring tax fairness and the stability of the tax order.

Research on strengthening algorithmic oversight and safeguarding taxpayer rights in the era of artificial intelligence (AI) will help advance the application of AI in tax administration from a process-oriented approach toward a data-driven one. This paper examines the practical scenarios of algorithm application in China's tax administration sector, as well as the legal and governance risks and challenges associated with algorithmic oversight and the protection of taxpayer rights. Drawing on relevant international experiences, it proposes a roadmap for improvement, with the aim of steadily advancing the development of smart taxation in China and enhancing the effectiveness of tax governance.

^[1] Mao, X. J. (2024). Functional Transformation and Legal Response of Tax Administration in the Era of Artificial Intelligence: Taking the EU's Tax AI Practice as the Entry Point. *Tax and Economic Research*, 29(03), 85.

1. The Current Status and Primary Applications of Algorithms in Tax Administration

1.1 The Current Status of Algorithm Applications in Tax Administration

In recent years, many countries—as well as certain regions within China—have been actively exploring applications of artificial intelligence in tax enforcement, services, and supervision. As part of its efforts to advance the development of smart taxation, China has already begun exploring the integration of artificial intelligence with tax administration, which has significantly improved operational efficiency and provided taxpayers and fee payers with a superior experience in handling tax and fee matters.

Internationally, more than 20 EU member states have already adopted intelligent tax administration systems. Overall, with the exception of Germany and France—which have established specific legal regulations—most EU member states lack a unified and clear legal framework for the application of AI in taxation. Instead, they primarily rely on internal controls within tax authorities to ensure the proper operation of systems and prevent the misuse of taxpayer data. Based on their direct relevance to tax enforcement, tax AI can be divided into two main categories: mandatory systems, represented by risk management, risk scoring, and risk monitoring systems, which directly support enforcement and supervision; and non-mandatory systems, primarily comprising tax guidance and tax assistance tools, which focus on service provision and compliance guidance. In actual tax administration, mandatory AI systems play a central role.

1.2 Key Applications of Algorithms in Tax Administration

Currently, artificial intelligence (AI) technology holds significant value for application in modern tax governance. Specific application scenarios primarily encompass the following four areas: First, establishing an intelligent tax consultation system. Tax authorities leverage core AI technologies to build an intelligent Q&A service system, providing round-the-clock tax consultation services to relevant parties. Taxpayers can use human-machine interaction to look up tax policies, resolve tax-related queries, and complete simple tax filing procedures, thereby effectively reducing the communication costs associated with tax compliance. Second, implementing targeted tax-related services. Tax authorities integrate multi-dimensional information—such as taxpayers' historical financial data and tax filing records—and leverage AI's data analysis capabilities to precisely match entities' operational characteristics, thereby customizing personalized tax guidance plans. Taking an intelligent service robot developed abroad as an example, this tool can not only respond to taxpayers' policy inquiries but also, by considering their actual business conditions, provide references for enforcement activities such as tax inspections and audit supervision, thereby enhancing the precision and efficiency of tax administration. Third, establish a unified intelligent processing mechanism. Relying on intelligent algorithms, basic tax operations with fixed procedures and high repetition rates are processed in batches through automation, streamlining redundant steps and improving the efficiency of basic tax-related services.^[2]

^[2] Zhu, Z. G. (2026). Theoretical Foundations and Practical Pathways for AI-Enabled Tax and Fee Administration. *International Taxation in China*, (02), 76.

2. Practical Challenges in Algorithm Regulation and Institutional Improvements

2.1 The Practical Challenges of Algorithm Regulation

2.1.1 Algorithmic Black Boxes and Lack of Transparency

The core dilemma of algorithmic decision-making lies in the technological black box and the lack of transparency in rules. Tax authorities use models such as machine learning and neural networks to create taxpayer profiles, issue risk alerts, and carry out automated actions; however, the algorithmic logic, parameter weights, data sources, and decision-making rules remain closed off. As a result, taxpayers find it difficult to understand how they are assessed, why they receive alerts, and on what basis decisions regarding their treatment are made. This algorithmic black box renders the tax decision-making process unobservable and inexplicable, substantially eroding taxpayers' right to information. Procedural rights—such as the right to make representations and defend one's case, and the right to a hearing—are difficult to exercise effectively due to information asymmetry.^[3] In practice, most tax algorithms simply output results without disclosing the reasoning behind them, and even tax officials find it difficult to fully explain how the algorithms work.^[4] Under the data-driven tax administration model, automated tax collection and administration integrates all tax-related elements into the system, thereby blurring the boundaries of tax administration procedures and making it more difficult to ensure procedural transparency.^[5] Furthermore, there is an inherent tension between legal and technological values; technological rationality tends to deviate from the values of tax law, leading to a conflict between algorithmic power and the principles of the rule of law.^[6] The lack of transparency in algorithms not only exacerbates the conflict between taxpayers and tax authorities but also enables tax authorities to evade their obligation to provide justification, thereby circumventing the principle of due process through technical means.

Experience from countries such as the Netherlands and Germany shows that even nations with relatively mature legal frameworks for artificial intelligence have faced serious rights violations due to algorithmic opacity. The Dutch tax authorities used the SYRI software to screen for fraud in areas such as social welfare and taxation; however, because the algorithmic rules were not transparent, taxpayers were unable to verify the correctness of the decisions, leading the court to rule that this violated Article 8 of the European Convention on Human Rights regarding the protection of the right to privacy;^[7] In the well-known Dutch child benefit case, the tax authorities used a discriminatory algorithm to erroneously flag a large number of compliant non-Dutch applicants as fraudulent and refused to disclose the basis for their decisions, ultimately resulting in systematic rights violations against non-Dutch taxpayers and a crisis of government accountability.^[8] Although the Fiscal Code of Germany

^[3] Yang & Wang, (2023). Tax power equilibrium: The impact and response of algorithmic decision-making on taxpayer rights. *Law and Economy*, (01), 37.

^[4] Rich, M. L. (2016). Machine learning, automated suspicion algorithms, and the Fourth Amendment. *University of Pennsylvania Law Review*, (4), 871 – 930.

^[5] Li & Li, (2022). Reshaping Taxpayer Rights: the Underlying Logic in the Era of "Data-based Taxation". *Journal of Huazhong University of Science and Technology (Social Science Edition)*, 36(6), 81 – 82.

^[6] Xu & Dong, (2025). On the Value Alignment between Law and Technology In Smart Taxation. *Wuhan University Journal (Philosophy & Social Sciences)*, 78(3), 29.

^[7] Yang & Wang, (2023). Tax power equilibrium: The impact and response of algorithmic decision-making on taxpayer rights. *Law and Economy*, (01), 34-35.

^[8] Yang & Wang, (2023). Tax power equilibrium: The impact and response of algorithmic decision-making on

acknowledges taxpayers' right to information regarding automated decisions, it establishes broad exceptions on the grounds of "jeopardizing the performance of tax functions," resulting in a significant erosion of this right in practice.

2.1.2 Data Bias and Algorithmic Bias

Generative AI relies heavily on massive amounts of data to operate, which creates risks of excessive data collection, improper storage, and misuse, directly undermining the data security baseline of tax governance.^[9] Since tax algorithms are trained on vast datasets, defects in data quality and structural biases can be amplified and entrenched through the algorithms. On the one hand, data sources are diverse and heterogeneous, with inconsistent definitions; third-party data scraping and cross-departmental data sharing lack verification mechanisms, and erroneous, redundant, or outdated data directly lead to algorithmic misjudgments. On the other hand, training data inherently carries historical biases; for example, the uneven distribution of past penalty records and risk flags for taxpayers in specific industries, of certain sizes, or in particular regions causes algorithms to replicate and reinforce such inequalities, resulting in systemic discrimination against vulnerable groups or emerging business models.

The U.S. IRS risk assessment algorithm has been shown to result in a significantly higher probability of audits for Black taxpayers compared to other groups,^[10] a phenomenon rooted in historical biases within the training data.^[11] In China, in some regions, algorithmic models set risk thresholds too high for small and micro enterprises and new economy entities, leading to abnormally high frequencies of alerts and audits, while failing to adequately identify complex tax avoidance schemes employed by large enterprises. At its core, this constitutes indirect discrimination stemming from data sample imbalance and feature selection bias. Since algorithms predict risk based on correlations rather than the causal reasoning of traditional law enforcement, they tend to overlook special circumstances that are lawful and compliant, leading to "one-size-fits-all" automated dispositions that undermine case-by-case fairness.

2.1.3 Lack of Regulatory Rules and Ambiguity of Responsibility

China has yet to establish a regulatory framework specifically targeting tax algorithms. Existing regulations are fragmented, lack authority, and are difficult to implement, leaving the entire process—from development and testing to deployment and iteration—subject to weak oversight and a lack of accountability. The "Provisions on the Administration of Algorithm-generated Recommendations for Internet Information Services" focuses on commercial algorithms and cannot be directly applied to tax algorithms, which involve the exercise of public authority; the "Principles for the Governance of New Generation Artificial Intelligence" are merely aspirational guidelines and lack binding force; and the "Tax Collection Administration Law" does not contain specific provisions regarding automated decision-making, algorithm regulation, or remedies for rights violations, creating a significant institutional gap. In the current process of modernizing tax administration, the lack of robust cross-departmental data-sharing mechanisms and inconsistent standards directly undermine the regulatory effectiveness and precision of data-driven tax

taxpayer rights. *Law and Economy*, (01), 36.

^[9] Xiang & Zhang, (2023). Research on generative artificial intelligence empowering the modernization of tax governance. *Taxation Research*, (12), 69.

^[10] MILLER K. IRS disproportionately audits black taxpayers[EB/OL]. (2023-01-31)

[2024-01-25].<https://law.stanford.edu/press/irs-disproportionately-audits-black-taxpayers/>.

^[11] Chen & Zhao, (2024). Tax Collection and Management against the Background of Digitalization of Tax Governance: Algorithmization Trends and Risk Prevention. *Taxation Research*, (4), 72-73.

governance.^[12]

Overseas jurisdictions generally implement full-lifecycle regulation of algorithms through dedicated legislation. The EU's GDPR explicitly stipulates transparency, the right to explanation, and the right to human intervention regarding automated decision-making. The Fiscal Code of Germany devotes an entire chapter to establishing standards for automated tax decision-making, oversight mechanisms, and safeguards for rights. In France, the National Commission for Information Technology and Liberties (CNIL) specifically oversees tax algorithms and conducts algorithmic impact assessments and fairness reviews. In contrast, China lacks specialized regulatory mechanisms such as algorithm review committees or algorithm audits, as well as mandatory requirements for periodic testing, bias detection, and vulnerability remediation. Consequently, algorithms are routinely deployed with inherent flaws, leading to the continuous accumulation of risks.

2.2 Improving the Regulatory Framework for Algorithms

2.2.1 Improve the legislative framework

Efforts should be accelerated to improve legislation related to the digitalization of tax administration, providing a clear legal basis for algorithm-based tax administration, filling institutional gaps, and bringing the use of algorithms in tax administration fully under the rule of law. Articles 32a, 32b, and 155 of the Fiscal Code of Germany systematically stipulate disclosure obligations, requirements for human intervention, and review mechanisms regarding automated tax decision-making. France has incorporated algorithmic transparency and fairness reviews into its administrative legal framework, while Article 22 of the EU's GDPR establishes the baseline rule that “no significant decision may be made solely on the basis of automated decision-making.” These all provide mature models for China to follow.

It is recommended that the Tax Collection Administration Law be amended to include a dedicated chapter on “Smart Taxation and Algorithmic Decision-Making,” clarifying four core principles: First, the statutory application of algorithms, which defines the boundaries of algorithmic use and distinguishes between scenarios where their use is prohibited, restricted, or prioritized. In matters that may significantly impact taxpayers' rights—such as administrative penalties, assessed taxation, and tax audits—algorithms may only be used as auxiliary tools, and fully automated decision-making is prohibited; Second, the obligation of algorithmic transparency: establish a standard of “appropriate transparency.” Tax treatment decisions made by artificial intelligence must be explainable and transparent.^[13] Tax authorities must disclose to taxpayers, in plain language, the purpose of the algorithm, data sources, core logic, risk indicators, and decision outcomes; they may not refuse to provide explanations by merely citing state secrets or trade secrets; Third, a comprehensive system of taxpayer algorithmic rights should be established, including but not limited to the statutory right to information, the right to request an explanation, the right to data correction, the right to request manual intervention, and the right to object to algorithms; Fourth, regarding the attribution of algorithmic liability, it should be clearly stipulated that tax authorities are the primary liable parties for algorithmic decisions; responsibility shall not be transferred due to algorithm outsourcing;

^[12] Yin & Ni, (2023). The era requirements and path orientation of tax administration modernization from the perspective of tax governance. *International Taxation in China*, (03), 27-28.

^[13] HallP. Predictive modeling:striking a balance between accuracy and interpretability[EB/OL].(2016-02-11)[2022-12-17].<https://www.oreilly.com/ideas/predictive-modeling-striking-a-balance-between-accuracy-and-interpretability>.

third-party suppliers shall bear contractual and tort liability; and after assuming liability, tax authorities may seek recourse from third-party suppliers at fault. Concurrently, the “Regulations on the Supervision of Tax Algorithms” should be formulated to detail the full-process standards for algorithm development, testing, deployment, filing, auditing, and updating. An algorithm filing system and a mandatory algorithm impact assessment system should be established to prevent and control risks at the source. The rights framework should be reshaped through the algorithmization of taxpayer rights, granting taxpayers the right to reject algorithms, the right to request explanations, and the right to request corrections.^[14]

2.2.2 Strengthen end-to-end oversight

A two-tier regulatory system combining internal controls with external oversight ensures that algorithms remain under control throughout their entire lifecycle. Regarding internal controls, tax authorities should establish an internal algorithm control mechanism: First, a dedicated algorithm review body should be established to assess the fairness, legality, and reasonableness of algorithms, with a focus on identifying data biases, feature discrimination, and program vulnerabilities, and prohibiting the inclusion of non-statutory factors such as nationality, region, and industry in algorithmic metrics; Second, establish a mechanism for regular algorithm testing and dynamic optimization, randomly sampling decision outcomes to verify accuracy, promptly correcting errors and biases, and preventing algorithms from becoming rigid and inflexible; Third, implement algorithm audit trail management, fully documenting the entire process—including data input, parameter adjustments, decision outputs, and manual reviews—to ensure traceability, verifiability, and accountability. Article 88 of the Fiscal Code of Germany requires periodic audits of automated risk assessment systems, serving as a prime example of internal oversight. Regarding external supervision, independent third-party algorithm audits and public oversight should be introduced: First, authorize audit agencies, judicial administrative departments, or specialized institutions to conduct algorithm audits, focusing on transparency, fairness, data security, and rights protection, with audit results made public; Second, following the model of France’s CNIL, a data and algorithm oversight body should be established to specifically regulate tax algorithms, handle complaints and reports, and conduct compliance investigations and impose penalties; Third, the oversight rights of taxpayers and the general public should be safeguarded by ensuring unimpeded channels for raising objections to algorithms and encouraging the reporting and oversight of discriminatory or unlawful algorithms. Through internal and external coordination, the “algorithm black box” can be dismantled, preventing algorithms from becoming tools for the expansion of power.

2.2.3 Specify algorithm-assisted positioning

Establishing a mechanism for human-machine collaboration that balances technological efficiency with the protection of rights is key to leveraging artificial intelligence in tax governance.^[15] However, artificial intelligence should be positioned as a technical aid rather than a decision-maker; the ultimate decision-making authority of humans and the transparency of technology are fundamental principles.^[16] The essence of tax AI should be limited to that of a tool; it must not replace tax authorities

^[14] Liu, (2025). Justification and Implementation of Algorithmization of Taxpayer's Rights. *Journal of Human Rights Law*, 4(04), 121.

^[15] Yang & Yu, (2023). Opportunities and Challenges Brought by ChatGPT-based Generative AI to Tax Administration. *Taxation Research*, (6), 19.

^[16] Zhu, Z. G. (2026). Theoretical Foundations and Practical Pathways for AI-Enabled Tax and Fee Administration. *International Taxation in China*, (2), 78.

in exercising core enforcement powers.^[17] We must consistently uphold the principle that tax authorities take the lead in tax collection and payment procedures, with algorithms serving only as an auxiliary, and avoid allowing algorithms to exercise enforcement powers on behalf of tax authorities. Algorithms may only provide data support, risk alerts, and decision-making references; they must not replace human judgment and discretion. Major, complex, or contentious matters must undergo substantive review by tax officials and collective deliberation; algorithms are prohibited from making final decisions directly. At the same time, training in technical literacy for tax officials should be strengthened to enhance their ability to understand, review, and supervise algorithms, thereby avoiding overreliance on them. A mechanism for algorithm error tolerance and correction should be established to promptly rectify algorithmic errors, reduce misjudgments and unintended consequences, and achieve the unity of technical rationality, legal rationality, and case-specific justice.

3. Practical Challenges and Optimization Pathways for Safeguarding Taxpayers' Rights

3.1 Current Challenges in Safeguarding Taxpayers' Rights

3.1.1 Lack of Transparency in Algorithmic Procedures Infringes on Taxpayers' Right to Information

The right to information is the cornerstone of the taxpayer rights framework and a prerequisite for the realization of other rights. However, as “data-driven taxation” is comprehensively advanced, the coercive nature and opacity of tax algorithms have become increasingly prominent, severely eroding taxpayers’ right to information. First, during the collection of tax-related data, algorithms can conduct comprehensive mining of taxpayers’ business information. Coupled with the continuous improvement of cross-departmental and cross-system data-sharing mechanisms, the channels through which tax authorities obtain information are no longer limited to the internal tax system. The diversification of information sources has significantly expanded taxpayers’ information blind spots, making it difficult for them to predict tax administration actions and final outcomes, thereby substantially undermining their reasonable expectations regarding tax administration. Second, in the data processing and decision-making stages, the “algorithmic black box” further blurs the boundaries of traditional tax procedures. With the widespread use of automated algorithms, due process in tax administration has been undermined, and the entire processing workflow lacks traceability. Taxpayers are unable to know how their data is analyzed or understand the logic behind tax decisions, making it difficult to effectively safeguard their right to information.^[18]

3.1.2 Improper Handling of Tax-Related Data Infringes on Taxpayers' Right to Privacy

As a vital component of personal rights, the core of the right to privacy lies in safeguarding citizens’ personal information from unlawful collection, disclosure, and improper interference. In the context of “data-driven taxation” and digital tax administration, taxpayers’ privacy rights face multiple practical risks: First, when tax authorities use algorithms to collect tax-related data, they are prone to exceeding

^[17] Lv, C. G. (2021). China's progress of tax artificial intelligence: A framework discussion based on tax law theory. *Modern Economic Research*, (01), 125.

^[18] Xu, Y. Y. (2008). Optimization Pathways for Mechanisms to Safeguard Taxpayer Rights in the Context of “Data-Driven Tax Administration”. *Modern Commerce and Industry*, 45(16), 132-134.

necessary limits through excessive collection and deep mining, directly jeopardizing taxpayers' information security. Second, if algorithms cannot effectively distinguish between tax-related data and private information, the likelihood of leaks involving personal privacy and corporate trade secrets increases significantly; furthermore, when data processing errors occur in tax administration systems, the improper disclosure of relevant information may infringe upon taxpayers' privacy. Third, in a digital economy where the value of data is increasingly prominent, any leakage of sensitive information—such as identity, financial, and communication data—held by tax authorities can easily be exploited by criminals to create precise user profiles. This allows them to pry into individuals' lifestyle habits, consumption patterns, or corporate operational characteristics, and may even be used for criminal activities such as telecommunications fraud, posing significant security risks to taxpayers.

3.1.3 Lack of procedural transparency undermines taxpayers' right to redress

In current practice, a large number of disputes involving automated decision-making generally suffer from the failure to conduct substantive reviews of the parties' claims or to resolve them effectively. Although China's tax sector has not yet seen any typical tax administration disputes directly caused by "data-driven taxation," a review of relevant judicial practices abroad reveals that taxpayers have, in fact, fallen into a legal vacuum regarding remedies. This predicament manifests primarily on two levels: First, the scope of application of the right to remedy has been narrowed. From a legal perspective, taxpayers' rights to remedy should cover the entire tax administration process; however, under the intelligent tax administration model, the exercise of procedural rights—such as the right to information and the right to participate—is hindered, directly leading to a significant narrowing of the scope of these rights. Second, the burden of proof and the difficulty of asserting rights have increased significantly. Taxpayers typically have access only to the final conclusion, yet remain unaware of the internal logic underlying algorithm execution, data processing, and decision-making. Even when taxpayers dispute the outcome, they often struggle to obtain key supporting evidence and are unable to present a compelling case, thereby facing a higher risk of losing the case.^[19]

3.2 Pathways for Optimizing the Protection of Taxpayers' Rights

Regarding taxpayers' right to information, the first step is to establish a duty to provide prior notice regarding the processing of tax-related data. According to Article 35 of China's Personal Information Protection Law, when administrative agencies process personal information in the course of their statutory duties, they must fulfill their duty to inform. Safeguarding taxpayers' right to information is crucial in the current context of data-driven taxation, particularly when tax authorities obtain tax-related data from third-party platforms; prior notification must be established as a statutory prerequisite for data processing. During the tax administration process, taxpayers should also enjoy the right to access tax-related data in real time, allowing them to review tax file information relevant to themselves at any time.^[20] For example, the Colombian Tax Authority has provided a feasible pathway for implementing the right to information by granting taxpayers the right to access tax records at any time.^[21] After a tax decision is made, tax authorities must also fulfill their post-decision obligation to provide explanations and clarifications. Given the

^[19] Marta, P. A. (2019). The Polish Clearing House System: A Stirring Example of the Use of New Technologies in Ensuring VAT Compliance in Poland and Selected Legal Challenges. *EC Tax Review*, 28(1), 43-56.

^[20] Wan, F. (2021). The Application of the Algorithm Disclosure Obligation within the Right to Know Framework. *Forum on Politics and Law*, 39(06), 86.

^[21] Antonio et al. (2020). Use of Artificial Intelligence by Tax Administrations: An Analysis Regarding Taxpayers' Rights in Latin American Countries. *Computer Law & Security Review*, (38), 1-13.

highly specialized nature of algorithmic models, ordinary taxpayers often struggle to understand their underlying logic. Chilean tax law explicitly requires that, regardless of whether automated tax administration is employed, tax authorities must explain the factual basis, legal grounds, and reasoning process behind administrative actions. Algorithms are to be used solely as evidence during dispute resolution and need not be disclosed during routine procedures. This explanatory model avoids the disclosure of trade secrets while providing taxpayers with a clear basis for exercising their rights.

Regarding taxpayers' right to privacy, First, the collection of tax-related personal information must strictly adhere to the principle of purpose limitation, and information processing activities must align with the objectives of collection. Given that public authorities possess coercive power and have more convenient channels for data acquisition, the scope of tax data mining and the depth of analysis must both be confined to the statutory objectives of taxation. Second, limited retention rules for tax-related data should be established for tax authorities to regulate the excessive processing and improper use of personal information by administrative agencies. In this context, the principle of proportionality can serve as the core basis for defining data retention authority. In accordance with the applicable standards of this principle, tax authorities must satisfy three statutory requirements when retaining various types of tax-related personal information: the requirement of appropriateness, which stipulates that data retention must serve the realization of legitimate tax administration objectives; the requirement of necessity, which requires adopting the method that causes the least harm to taxpayers' data rights; otherwise, the retention action lacks legitimacy; and the requirement of proportionality, which demands a reasonable balance between retention measures and tax administration objectives, thereby ensuring the lawful and legitimate exercise of the right to retain data. On this basis, the full-process management of tax-related data should be further standardized. On the one hand, a tiered and categorized management system for tax-related data should be implemented, with differentiated storage and control measures applied according to levels such as sensitive data, confidential data, and general data, and the tax authorities' duty of prudent management at each stage should be clearly defined. On the other hand, an emergency response mechanism for data breaches should be established. Drawing on the approach of Australia's Privacy Amendment (Data Breach Notification) Act 2017^[22], it should be made clear that tax authorities must promptly fulfill their duty to notify regulatory authorities and affected taxpayers in the event of a data breach, thereby reducing the risk of further harm. Additionally, legal liability for infringements involving tax-related information must be clarified. China's current "Interim Measures for the Management of Taxpayers' Confidential Tax Information" contains rather general provisions regarding liability for infringement and does not specify concrete forms of accountability. In fact, non-material losses suffered by taxpayers—such as mental distress and damage to reputation—resulting from the leakage of personal tax information should also be included within the scope of compensable damages, thereby strengthening the comprehensive protection of taxpayers' information rights.

Regarding taxpayers' rights to redress, under the intelligent tax administration model of "data-driven taxation," it is necessary to establish a new redress system tailored to this approach. Specifically, improvements can be made in four areas: First, establish

^[22] Yuan et al. (2021) Pathways for Tax System Reform in the Digital Economy Era: Reflections Based on the Interaction Between Tax Systems and Tax Administration. *Tax Research*, (12), 30.

diversified channels for rights redress. Faced with the trend of increasing numbers and growing complexity of digital tax disputes, the value of non-litigation redress mechanisms is becoming increasingly prominent. Introducing diversified and collaborative regulatory pathways can balance the professionalism and efficiency of redress. China can also draw on this approach in advancing the development of smart taxation to provide taxpayers with more convenient and diverse channels for rights redress. Second, clarify taxpayers' right to object to automated tax administration and define the corresponding boundaries. According to Article 24 of the Personal Information Protection Law, individuals have the right to refuse automated decisions that have a significant impact, provided they receive an explanation. However, in tax administration scenarios, it is difficult to accurately predict the extent of such decisions in advance, and tax algorithm-based decisions are oriented toward the public interest, making them more likely to gain public trust compared to commercial algorithms. Therefore, the focus should be on granting taxpayers the right to challenge the results of automated tax administration and the right to request manual review, rather than simply applying a prior refusal rule.^[23] Third, optimize the allocation of the burden of proof in tax disputes. The technical nature and opacity of digital processes significantly increase the difficulty for taxpayers to provide evidence. To address this, the burden of proof should be reversed in tax disputes, with tax authorities bearing the primary burden of proving the legality and reasonableness of their administrative actions, while taxpayers need only fulfill a preliminary obligation to demonstrate a high degree of probability. Fourth, improve the state compensation mechanism related to automated tax administration. When tax administration errors result from deviations in the operation of intelligent systems, automated decision-making should not serve as a basis for exempting tax authorities from liability. Regardless of whether tax officials are directly at fault, as long as taxpayers suffer losses to their legitimate rights and interests due to errors in automated tax administration, the tax authorities should bear corresponding compensation liability, thereby clarifying the attribution of responsibility in digital tax administration.

4. Conclusion

The deep integration of artificial intelligence and algorithmic technologies into tax administration represents the inevitable direction for modernizing tax governance in the digital economy era, and serves as a crucial pillar for enhancing administrative efficiency and optimizing the business environment. While algorithms empower risk identification and service upgrades, their institutional shortcomings pose real challenges to tax rule of law, procedural justice, and taxpayer rights. To resolve the challenges of algorithmic governance, we must adhere to the fundamental principle of balancing technological empowerment with legal regulation, and coordinating efficiency improvements with rights protection. On the one hand, efforts should be accelerated to improve legislation on digital tax administration, establish a full-lifecycle regulatory system for tax algorithms, clarify the role of algorithm-assisted decision-making, and achieve human-machine collaboration, transparency, controllability, traceability, and accountability. On the other hand, with taxpayer rights at the core, emphasis should be placed on strengthening algorithm interpretation, data security, procedural transparency, and diverse remedies to resolve

^[23] Ding, X. D. (2022). Trust-Based Automated Decision-Making: A Reflection on the Principles of Algorithm Accountability and Institutional Reconstruction. *China Law Review*, (01), 108.

the challenges posed by algorithmic “black boxes” and the erosion of rights. Moving forward, we must continue to improve the coordination mechanism between algorithm regulation and rights protection. While mitigating algorithmic risks and upholding tax fairness, we should steadily advance the development of smart taxation, continuously optimize the tax governance system, and enhance the modernization of governance capabilities, thereby providing a solid tax foundation for the high-quality development of the digital economy.