

Literature Review: The Impact of Core Tax System Modernization on the Efficiency of Tax Administration in Indonesia

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Published: February, 2026

ABSTRACT

Core Tax System (CTS) modernization is a strategic initiative undertaken by the Directorate General of Taxes (DGT) to enhance the efficiency and effectiveness of tax administration in Indonesia. This digital transformation aims to improve data integration, strengthen supervisory mechanisms, increase taxpayer compliance, and reduce administrative costs. The study purpose was to analyze the impact of Core Tax System (CTS) modernization on the efficiency of tax administration in Indonesia, with a particular focus on service delivery, supervisory mechanisms, and the quality of tax data. This study also aims to identify the opportunities and challenges arising from the implementation of CTS within the Directorate General of Taxes (DGT). Materials and methods. This research employs a literature review approach by analyzing academic journal articles with emphasis on 2024–2025 and supporting foundational references from earlier years, official policy documents issued by the Directorate General of Taxes, and relevant government publications. The selected literature was reviewed systematically to identify key findings related to the implementation and outcomes of CTS modernization. The findings indicate that the implementation of CTS has contributed positively to tax administration efficiency. Key improvements include faster administrative processes, enhanced data accuracy and validity, and increased automation in monitoring and compliance enforcement. CTS also supports better integration of taxpayer information, which facilitates more effective supervision and risk-based audits. However, several challenges persist, including limitations in technological infrastructure, disparities in human resource readiness, and the need for stronger system integration with other government agencies. Conclusions. Overall, CTS modernization has significant potential to improve tax administration efficiency and reduce the tax gap in Indonesia. Its successful implementation depends on continuous policy support, investment in technological capacity, and ongoing development of human resources to ensure system sustainability and optimal performance.

Keywords: Core Tax System, tax administration efficiency, digital transformation, Directorate General of Taxes, Indonesia.

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INTRODUCTION

The increasingly dynamic global economic environment and the rapid development of information technology have encouraged the Indonesian government to undertake comprehensive reforms across various sectors, including taxation. Tax reform has become a strategic agenda, as taxation plays a crucial role as the primary source of state revenue. In the Indonesian context, tax revenue contributes approximately 70% of total state revenue, making the effectiveness and efficiency of tax administration key factors in maintaining fiscal sustainability and supporting national development (Directorate General of Taxes, 2022). However, the growing complexity of economic activities and the increasing volume of tax-related data demand a more modern, integrated, and adaptive administrative system.

One of the strategic measures adopted by the government is the implementation of the Core Tax System (CTS), which has been gradually introduced since 2024. CTS was developed to replace the outdated and fragmented tax administration system that is no longer capable of managing

increasingly complex tax data. According to the Fiscal Policy Agency (2021), the utilization of digital technology in tax administration has significant potential to improve the efficiency and effectiveness of tax collection. Therefore, the modernization of the Core Tax System is expected to serve as a solution to various structural problems that have long been faced by Indonesia's tax administration.

CTS is designed as a core system that integrates all tax administration processes into a single, unified database. Through this integrated database, CTS aims to enhance administrative efficiency by digitizing business processes, automating reporting and payment systems, enabling cross-agency data matching, and improving the quality of services provided to taxpayers. In the digital economy era, efficient tax administration is a critical prerequisite for improving taxpayer compliance and optimizing state revenue. An efficient tax system also represents one of the main pillars supporting economic stability and growth within a country.

Nevertheless, tax administration in Indonesia continues to face a number of challenges. Persistent issues such as a high tax gap, suboptimal data integration, and uneven service quality remain significant concerns. A high tax gap indicates the existence of untapped tax revenue potential, resulting either from taxpayer non-compliance or limitations in supervisory mechanisms. This condition underscores the importance of modernizing the core tax system as a key instrument for comprehensively improving the efficiency of tax administration.

Conceptually, the modernization of tax information systems constitutes a strategic step toward enhancing tax administration performance. Information technology enables data processing to be conducted more rapidly, accurately, and reliably. Research conducted by Setiawan and Handayani (2020) demonstrates that the implementation of information technology in tax systems can reduce data processing time by up to 50%. This finding confirms that system modernization not only accelerates administrative processes but also minimizes the potential for errors arising from manual data processing.

In addition to improving speed and accuracy, the modernization of tax information systems also facilitates data integration across government institutions. Such integration is essential for strengthening tax supervision and law enforcement. Synergy between the Directorate General of Taxes (DGT) and other institutions, such as Statistics Indonesia (BPS) and the Ministry of Finance, enables earlier detection of taxpayer non-compliance. According to the OECD (2023), global tax administration modernization aims to promote process automation, enhance data integration, and expand analytical capabilities to support risk-based decision-making.

In Indonesia, tax modernization efforts have been carried out progressively since the early 2000s through the implementation of electronic systems such as e-Filing, e-Billing, and e-Invoice. The development of the Core Tax System represents a continuation of these efforts, with a focus on establishing an end-to-end integrated tax administration system. A report by the Directorate General of Taxes (2023) indicates that the use of e-Filing and e-Payment systems has increased significantly, with more than 80% of taxpayers now utilizing digital platforms to fulfill their tax obligations. This increase reflects a shift in taxpayer behavior toward greater adaptability to technology-based tax services.

According to the Directorate General of Taxes (2024), the implementation of CTS is part of the Tax Administration System Reform, which emphasizes the digitalization of tax business processes, ranging from registration and reporting to payment, audit, and collection. CTS is expected to improve service quality, reduce direct interaction between tax officers and taxpayers, and minimize administrative errors and fraudulent practices. Experiences from several countries also suggest that modernizing core tax systems can positively affect supervisory effectiveness and compliance cost efficiency. A study conducted by Sharma (2024) found that core tax system modernization significantly enhances tax supervision effectiveness and reduces taxpayer compliance costs.

From a technical perspective, the Core Tax System is designed to replace legacy systems that are fragmented and operate independently. Rahman and Wibowo (2025) argue that CTS enables the DGT to maintain a single integrated database, or a “single source of truth,” thereby simplifying data validation, risk analysis, and decision-making processes. According to the DGT (2024), CTS is built on an end-to-end tax administration concept that supports automated data processing, technology-based risk analysis, and more effective supervisory functions.

Improving tax administration efficiency is the primary objective of CTS implementation. The OECD (2022) defines tax administration efficiency as the ability of tax authorities to optimize resource utilization in carrying out administrative functions quickly, accurately, and at minimal cost. Putri and Sinaga (2024) note that efficient tax administration not only increases taxpayer compliance but also reduces compliance costs and narrows opportunities for irregularities and fraud. The OECD (2023) further emphasizes that tax digitalization significantly enhances efficiency through process automation, data integration, and the reduction of manual activities.

Beyond internal efficiency indicators, taxpayer satisfaction is also an important measure of successful tax administration modernization. A survey conducted by the Indonesian Survey Institute (2023) revealed that approximately 75% of taxpayers expressed satisfaction with the services provided by the DGT following the implementation of modern systems. This finding suggests that core tax system modernization affects not only operational efficiency but also the overall quality of public services.

Research conducted by Nugroho (2024) shows that tax refund processing time decreased by up to 50% after the adoption of modern information technology. This result strengthens the argument that tax system modernization plays a significant role in enhancing overall tax administration efficiency. Such efficiency includes reductions in time, costs, and labor required for tax administration processes. According to Huda and Ningsih (2024), improving administrative efficiency is essential for increasing taxpayer compliance and reducing the tax gap, which remains a major issue in Indonesia.

Several other studies also confirm the positive impact of tax system modernization. Rahardjo (2023) found that the application of big data technology in tax supervision improves both accuracy and efficiency in tax collection. Nevertheless, various studies highlight ongoing challenges in modernization efforts, particularly related to technological infrastructure readiness, human resource capacity, and inter-agency system integration. Therefore, research on the impact of Core Tax System modernization on tax administration efficiency in Indonesia is essential to provide a comprehensive understanding of the benefits and challenges of CTS implementation, while also addressing existing research gaps within the national context.

METHOD

This study adopts a descriptive qualitative approach with an explanatory research design. This methodological approach is selected to provide an in-depth explanation of the impact of Core Tax System (CTS) modernization on the efficiency of tax administration within the Directorate General of Taxes (DGT) of Indonesia. The descriptive qualitative approach allows the study to explore and interpret complex administrative and institutional changes, while the explanatory design is used to clarify the relationship between tax system modernization and changes in administrative efficiency without employing direct statistical hypothesis testing.

The focus of this study is on understanding how the implementation of CTS influences key aspects of tax administration efficiency, including service delivery processes, data management, supervisory mechanisms, and administrative workflows. By emphasizing explanation rather than measurement, this approach enables a comprehensive assessment of the mechanisms through which digital transformation affects tax administration practices.

The data used in this study consist of secondary data obtained from multiple credible sources. These sources include national and international academic journals, official reports published by the Directorate General of Taxes, government publications, and policy documents related to the design and implementation of the Core Tax System. In addition, the study draws upon empirical research that examines the effects of digitalization and tax system modernization on administrative efficiency, taxpayer compliance, and the quality of public services. The use of diverse data sources is intended to ensure a broad and balanced perspective on CTS implementation and its outcomes.

Data collection was conducted through documentary research, involving a systematic review and critical examination of official documents, institutional reports, and relevant academic literature. The documents reviewed were selected based on their relevance to the objectives of the study and their contribution to understanding the functional characteristics, policy objectives, and operational mechanisms of the Core Tax System. This process also involved identifying documented outcomes and challenges associated with CTS implementation in Indonesia.

Data analysis was carried out using descriptive qualitative analysis. This analytical technique was applied to organize, interpret, and synthesize information obtained from various data sources. The analysis links empirical findings with theoretical frameworks in public administration and digital government, allowing for a structured interpretation of how information technology adoption through CTS affects tax administration efficiency. The analysis considers both the internal perspective of the DGT, such as organizational processes and supervisory capacity, and the external perspective of taxpayers as users of tax services.

The results of the analysis are presented in a narrative and thematic form to provide a comprehensive overview of the impact of Core Tax System modernization on tax administration efficiency in Indonesia. Through this approach, the study aims to identify key benefits, ongoing challenges, and policy implications of CTS implementation. Ultimately, the methodological framework of this study is expected to contribute conceptually to the discussion on tax administration reform and digital transformation in the public sector, particularly within developing country contexts.

FINDINGS AND DISCUSSION

Findings

The findings of this study indicate that the modernization of the Core Tax System (CTS) has evidence suggests improvements in the efficiency of tax administration in Indonesia. One of the most prominent outcomes observed is the reduction in the time required to complete tax administrative processes. The introduction of a more integrated and digitalized information system has enabled faster tax filing, processing, and administrative handling compared to the legacy system, which relied heavily on fragmented applications and manual procedures. This improvement in processing speed reflects the effectiveness of CTS in streamlining administrative workflows and reducing procedural bottlenecks.

Empirical evidence from previous studies further supports this finding. Prasetyo (2023) reports that following the implementation of CTS, the time required for tax submission decreased by up to 30%. This reduction demonstrates that system integration and process automation can significantly enhance operational efficiency, particularly in high-volume administrative activities such as tax reporting and payment processing.

In addition to accelerating administrative processes, CTS modernization has contributed to improved data accuracy and consistency. The integration of tax data into a unified database reduces dependence on manual data entry and repetitive verification processes, thereby minimizing the risk of human error. As a result, taxpayer information becomes more reliable and easier to validate.

Improved data quality enhances the ability of tax authorities to conduct monitoring, compliance assessment, and policy evaluation based on accurate and up-to-date information.

The findings also indicate that CTS strengthens tax administration oversight functions. By integrating taxpayer registration, reporting, payment, audit, and collection processes into a single platform, the Directorate General of Taxes (DGT) is better positioned to implement risk-based supervision. Automated data matching and monitoring tools enable early detection of anomalies and potential non-compliance. Moreover, the increased use of automation reduces administrative costs in the long term by lowering operational workloads and decreasing the need for direct interaction between tax officers and taxpayers, particularly for routine administrative tasks.

Discussion

The findings of this study highlight that the modernization of the Core Tax System (CTS) represents a concrete and strategic manifestation of digital transformation within Indonesia's tax administration. CTS, often referred to as Coretax or CTAS, was designed to establish a *single source of truth* by integrating all core tax administration processes including registration, reporting, payment, audit, collection, and supervision into a unified and centralized digital platform. This level of system integration constitutes a fundamental driver of administrative efficiency, as it enables seamless data flows, enhances data integrity, and improves coordination across different functional units within the tax authority. By reducing fragmentation and duplication in administrative processes, CTS addresses long-standing structural inefficiencies that characterized the previous tax administration system.

From the perspective of modern public administration theory, digitalization is widely regarded as a key mechanism for improving efficiency, transparency, and accountability in the public sector. Digital government initiatives aim to streamline bureaucratic processes, enhance service delivery, and strengthen institutional capacity through the strategic use of information and communication technologies. Osborne (2022) emphasizes that digital-based government modernization can significantly enhance organizational productivity and improve the quality of public services by enabling more responsive, data-driven, and citizen-centered governance. The findings of this study align closely with this theoretical perspective, as CTS implementation has demonstrably accelerated service delivery, improved the quality and consistency of tax data, and strengthened supervisory capacity within Indonesia's tax administration system.

The acceleration of service delivery observed following CTS implementation reflects the benefits of process automation and system integration. Routine administrative tasks that previously required manual intervention and multiple system interfaces can now be completed more efficiently through a single platform. This not only reduces processing time but also minimizes procedural bottlenecks that often hinder service performance. Improved data quality, resulting from centralized data management and automated validation processes, further supports effective administrative decision-making and policy implementation. In this sense, CTS functions not merely as a technological upgrade but as an enabler of organizational transformation within the Directorate General of Taxes (DGT).

However, the discussion also reveals that efficiency gains in tax administration are not generated by technological innovation alone. While CTS provides the technical infrastructure necessary for modernization, the extent to which its benefits are realized depends heavily on user adoption and institutional readiness. Both internal users, such as DGT employees, and external users, including individual taxpayers and businesses, must be adequately prepared to adapt to new systems and procedures. Without sufficient user acceptance and capability, even the most advanced technological systems may fail to deliver their intended outcomes.

Comprehensive training programs for tax officials are therefore essential to ensure that CTS functionalities are fully understood and effectively utilized. Training initiatives should not only focus

on technical system operation but also emphasize changes in work processes, decision-making practices, and service-oriented mindsets. In addition, business process redesign is necessary to align organizational workflows with the capabilities of the new system. Simply digitalizing existing procedures without rethinking underlying processes may limit the potential efficiency gains of CTS. Effective change management strategies are also required to address resistance to change, build institutional commitment, and foster a culture of continuous improvement within the tax administration.

From the taxpayer perspective, extensive outreach and socialization efforts are crucial to facilitate adaptation to CTS-based services. Small and medium-sized enterprises (SMEs), in particular, may face greater challenges in adopting digital tax systems due to limited technological capacity and lower levels of tax literacy. Targeted education programs, user-friendly system interfaces, and accessible support services can help mitigate these challenges and promote broader participation in the modernized tax system. Ensuring inclusive access to digital tax services is critical for achieving equitable efficiency gains and avoiding the exclusion of vulnerable taxpayer groups.

Evidence from the early phases of CTS implementation suggests that limited user readiness can delay the realization of efficiency benefits. This challenge is often reflected in increased demand for helpdesk support, temporary declines in staff productivity, and resistance to new administrative procedures. Such transitional issues are common in large-scale digital transformation initiatives and should be anticipated as part of the implementation process. These conditions underscore the importance of aligning technological deployment with sustained investment in human resource development. Continuous capacity building, supported by clear communication and leadership commitment, should therefore proceed in parallel with system enhancement to ensure long-term efficiency improvements.

Beyond internal organizational factors, structural challenges within Indonesia's tax administration environment also play a significant role in shaping efficiency outcomes. One of the most critical challenges remains the relatively low level of taxpayer compliance. Data from the Audit Board of Indonesia (BPK) (2023) indicate that taxpayer compliance rates remain below 70%, suggesting persistent weaknesses in administrative enforcement and taxpayer engagement. This condition implies that inefficiencies in tax administration are not solely attributable to system limitations but are also influenced by broader behavioral and institutional factors, including taxpayer awareness, trust, and perceptions of fairness within the tax system.

The complexity of tax regulations further constrains the effectiveness of tax administration. Complex and frequently changing regulations can increase compliance costs for taxpayers and complicate enforcement efforts for tax authorities. Limited levels of tax literacy among taxpayers exacerbate these challenges, as individuals and businesses may struggle to understand their obligations and navigate administrative procedures. In this context, CTS modernization is expected to play a dual role: improving internal administrative efficiency while simultaneously creating a tax system that is more accessible, transparent, and user-friendly for taxpayers. Simplified digital processes, clearer information delivery, and automated compliance tools can help reduce administrative burdens and improve voluntary compliance.

According to the Directorate General of Taxes (2024), CTS implementation is expected to reduce administrative time and costs while improving data accuracy and system reliability. This underscores the role of CTS as a strategic instrument for enhancing taxpayer compliance and strengthening system accountability. By increasing transparency and reducing discretionary interactions between tax officials and taxpayers, CTS may also contribute to reducing opportunities for rent-seeking behavior and improving public trust in the tax administration.

The integration of advanced technologies such as big data analytics within CTS further expands the potential benefits of modernization. Enhanced analytical capabilities enable the DGT to

adopt more sophisticated risk-based supervision approaches. By analyzing large volumes of taxpayer data, the tax authority can identify patterns of non-compliance, prioritize audit targets, and allocate enforcement resources more efficiently. This targeted approach improves the effectiveness of supervision while reducing unnecessary administrative burdens on compliant taxpayers. Over time, risk-based supervision supported by advanced analytics is expected to contribute to narrowing the tax gap and improving overall revenue performance.

Nevertheless, the successful application of advanced analytics depends on data quality, institutional capacity, and appropriate governance frameworks. Issues related to data privacy, system security, and inter-agency data sharing must be carefully managed to ensure that technological advancements do not introduce new risks. Clear regulatory frameworks and robust oversight mechanisms are therefore essential to support the responsible use of data-driven technologies in tax administration.

Overall, the expanded findings and discussion suggest that the modernization of the Core Tax System holds substantial potential to improve the efficiency of tax administration in Indonesia. CTS has demonstrated its ability to streamline processes, improve data quality, strengthen supervision, and enhance service delivery. However, the realization of these benefits depends on several interrelated factors, including technological infrastructure readiness, human resource quality, organizational adaptability, and consistent policy support.

Consequently, CTS modernization should be viewed not as a one-time technological project but as a continuous and adaptive reform process. Sustainable improvements in tax administration efficiency require ongoing system refinement, institutional learning, and stakeholder engagement. By addressing not only technical aspects but also institutional and behavioral dimensions of reform, CTS modernization can serve as a foundation for a more efficient, transparent, and accountable tax administration system that supports Indonesia's long-term fiscal sustainability and economic development.

CONCLUSIONS

Based on the analysis of the implementation of the Core Tax System (CTS) modernization, it can be concluded that the modernization of the core tax system has had a significant impact on improving the efficiency of tax administration in Indonesia. CTS has proven effective in accelerating service processes, simplifying administrative workflows, and enhancing taxpayer experience through the digitalization and automation of various procedures. In addition, stronger data integration under CTS has improved the validity, consistency, and accuracy of tax data, thereby facilitating more effective supervision and data-driven decision-making by the Directorate General of Taxes.

The effectiveness of tax supervision has also increased as a result of the utilization of analytical features, risk engines, and automated systems, which reduce reliance on manual processes. Furthermore, CTS modernization has the potential to lower long-term administrative costs for both the tax authority and taxpayers. Nevertheless, the implementation of CTS continues to face several challenges, including human resource readiness, uneven technological infrastructure, and the need for stronger system integration with related institutions.

Overall, CTS modernization holds substantial potential to narrow the tax gap, improve taxpayer compliance, and support the optimization of state revenue, provided that it is supported by consistent policies and strengthened technological capacity.

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