

Research on the Construction of International Tax Compliance Systems and Tax Risk Control Strategies for Multinational Enterprises

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Abstract: With the parallel development of the global minimum tax, country-by-country reporting, anti-tax avoidance information exchange and digital tax supervision, multinational corporations' tax governance has moved away from the old model of reporting compliance to a system characterised by "data transparency, rule linkage, proactive risk management and traceable evidence". This paper will study the construction of an international tax compliance system and tax risk control for multinational corporations. According to reports from international organisations and research by scholars in the past three years, an all-encompassing system of data governance, rule identification, risk quantification, control loop, and governance accountability has been established. Research has shown that the main sources of corporate tax risk have expanded from differences in tax rates to complex situations such as transfer pricing deviations, Pillar Two tax gaps, permanent establishment identification, controlled foreign company rules, tax treaty application, and profit attribution for R&D and intangible assets. This paper also proposes models for international tax compliance risk indices, effective tax rates by jurisdiction, tax gaps, related-party transaction price deviations and expected loss optimisation, providing methodological support for multinational enterprises to build quantifiable, auditable and iterative tax risk control systems.

1. Introduction

Economic globalisation and digital business models have altered the traditional distribution system of value creation, profits and taxes for multinational enterprises (MNEs). Cloud services, platform transactions, intangible asset licensing, centralised procurement and cross-border financing allow companies to distribute contracts, assets and risks across many areas, and at the same time, tax authorities have begun to focus more on whether profits have economic substance. In its study of foreign corporate tax reform policies, the IMF has pointed out that the two-pillar system aims to address problems in the allocation of taxing rights and tax competition under the digital economy, and expects an increase in global corporate income tax revenue [1]. Therefore, at all times during the course of their business operations and decision-making and transactions, multinational

enterprises should engage in foreign tax compliance proactively, rather than only reporting and auditing after the fact.

At the same time, the tax authorities have started to use a risk-based approach in their compliance supervision, *automatised* the verification process, and conducted data matching and tiered supervision of large enterprises. According to OECD's Tax Administration 2024, tax authorities are now using a more formal risk management approach to focus on the correctness of tax returns and employ electronic verification and taxpayer behaviour analysis [2]. OECD's Corporate Tax Statistics 2024 reports on country-by-country information disclosure list 52 headquarter jurisdictions and 8,030 multinational enterprise groups; thus, the CCPS has been used as a data basis for identifying BEPS risks and analyzing profit-substance mismatch [3]. Therefore, the construction of the compliance system for multinational enterprises needs to change from "document archiving" to "real-time identification" and "risk warning".

Build an overseas tax compliance system framework for multinational enterprises and propose feasible risk control strategies in this paper. The three contributions of this paper are as follows: First, a unified compliance system for CbCR, Pillar Two, transfer pricing, tax treaties and data governance has been established; Second, five editable mathematical models to quantify tax risks at various levels have been proposed; and Third, by presenting public statistical charts and tables, changes in the international tax regulatory environment are shown to provide a path for enterprises to implement digital transformation in tax compliance. The organization of this paper is as follows: Part II introduces the present situation of research on the topic; Part III puts forward research problems; Part IV presents the system construction and control measures; Part V considers the safety precautions for implementation; and finally, it provides a conclusion.

2. Current Status Analysis of the Research Topic

In recent years, the three types of foreign tax authorities have changed. First, the tax authorities have changed from sample audits to data-driven supervision. According to the OECD's Tax Administration 2025, in 2023, 69% of the tax authorities had employed artificial intelligence, and an additional 24% were in the process of deployment. Therefore, algorithm recognition, automated workflows and case screening have started to change the model of tax audits [4]. Second, corporate income tax and the proportion of large multinational enterprises in China have drawn more attention. According to the 2025 Corporate Tax Statistics by the OECD, in 2022, the average contribution of large multinational corporations to corporate income tax revenue had risen from 44.4% in 2017 to 47.1%, and the number of covered multinational corporation groups exceeded 8,700 [5]. Thirdly, although there has been an increase in the openness of foreign tax authorities, differences in profit distribution by low-tax jurisdictions, tax incentives and economic substance still exist. According to the 2024 Global Tax Evasion Report by the EU Tax Observatory, although countries have enhanced cooperation in the field of anti-tax avoidance over the past decade, cross-border profit shifting and tax avoidance by high-net-worth individuals have still occurred [6].

As shown in Figure 1, based on OECD corporate tax data for 2024 and 2025, the scope of the CbCR regulation has been expanding from FY2021 to FY2022. It can be seen from the above data that the number of jurisdictions in mandatory country reporting has increased from 101 to 106, the number of jurisdictions submitting statistics to the OECD has risen from 52 to 54, and the number of multinational corporations covered has increased from 8030 to more than 8700. Although the increase was not substantial, the continuous expansion of coverage indicates that multinational corporation headquarters, member entities and transaction chains are becoming increasingly difficult to evade the regulatory data network. Consistency in the CbCR data, financial consolidation data and transfer pricing documents of a company will directly affect its risk level.

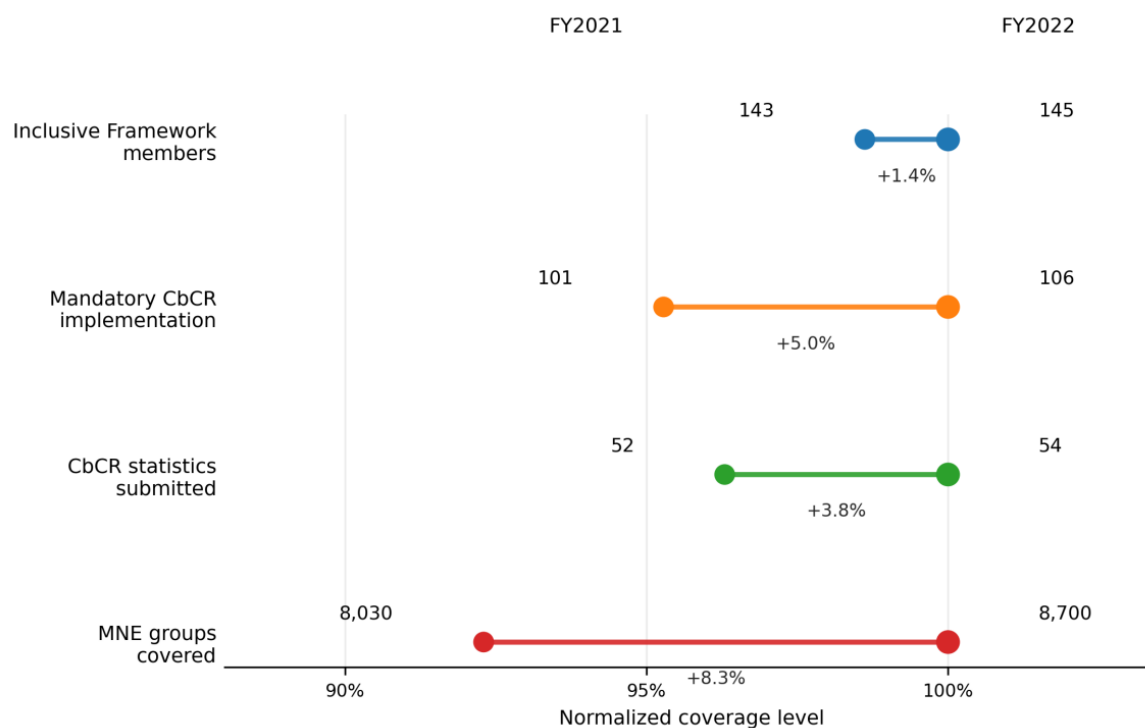


Fig.1. Statistics on Changes in the Coverage of OECD Country Reports

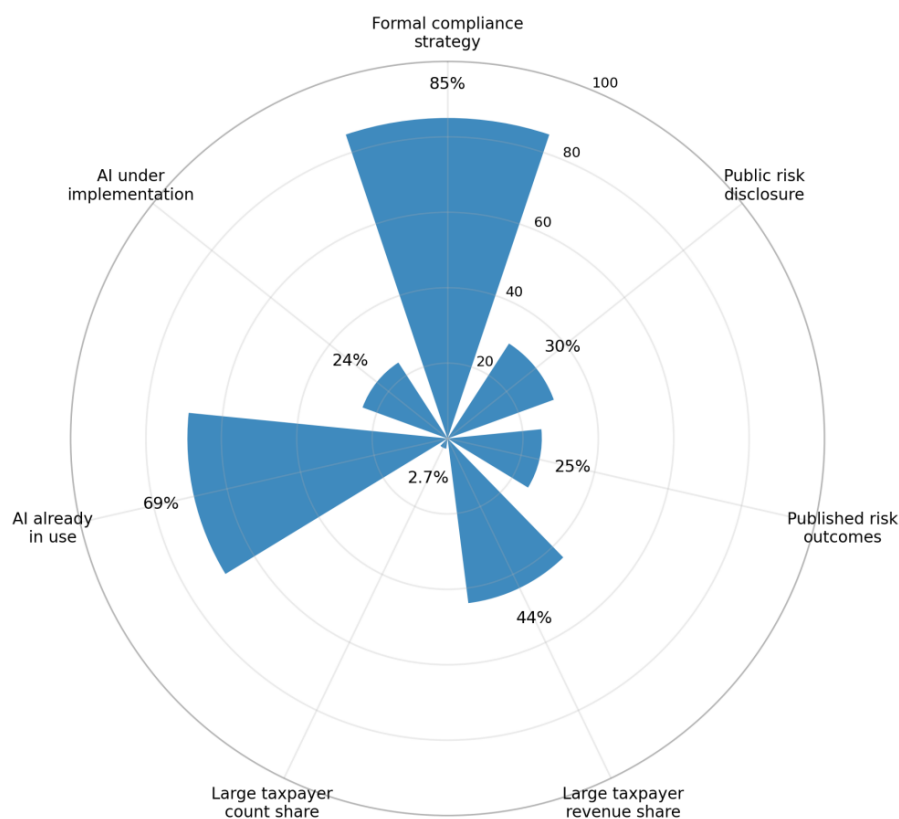


Fig.2. Statistics on Compliance Governance Indicators for Tax Authorities

As shown in Figure 2, the primary indicators of compliance risk governance by tax authorities are drawn from OECD tax administration reports. A large proportion of formal compliance risk strategies indicates that the regulatory authorities have established an all-encompassing risk identification system; large taxpayer offices managing only a few companies that account for a significant portion of the net income show that multinational enterprises are under strict regulatory scrutiny; and a combined use and deployment rate of artificial intelligence exceeding 90% demonstrate that the risk identification capabilities of tax authorities have shifted from manual experience to data models. If the company continues to use dispersed reports and responds to problems belatedly, it will be unable to meet the demands for regulatory openness and timely monitoring.

Table 1. Methods, Results and Limitations of English Literature Research in the Past Three Years

Source	Method	Main finding	Limitation
IMF 2023	Policy simulation	Two-pillar reform strengthens resilience of international corporate tax rules	Aggregate revenue effect differs across jurisdictions
OECD 2024 TAS	ISORA survey	Formal risk management and digital checks are becoming standard	Enterprise-level behavioral response is not measured
OECD 2024 CTS	Aggregated CbCR statistics	CbCR supports BEPS and transfer-pricing risk assessment	Data are anonymised and labeled
OECD 2025 TAS	Comparative administration data	AI use in tax administration expands rapidly	AI performance metrics are not fully comparable
OECD 2025 CTS	Corporate tax database	Large MNEs contribute rising CIT shares	CbCR data still reflect post-pandemic distortions
EU Tax Observatory 2023	Global research synthesis	Profit shifting and tax evasion remain material	Some estimates depend on macro assumptions
Bajgar et al. 2025	Difference-in-differences	Stronger compliance can reduce market concentration	EU setting may limit external validity
Chen 2024	Formal tax competition model	GMT reshapes investment and profit-shifting incentives	Model assumptions simplify real firm structures
Haufler and Kato 2024	Theoretical calibration	Size thresholds influence tax competition responses	Focuses on tax-rate competition
UNCTAD 2025	Investment trend analysis	FDI decline increases need for predictable tax governance	Tax risk is treated as part of broader investment policy

As shown in Table 1, the main contents of English literature in the past three years are divided into three parts: first, macro-level reform of the tax system and its impact on tax revenue; second, construction of digital regulatory capabilities for tax authorities; and third, behavioral response and compliance costs of multinational corporations. The strengths of the existing research are authoritative data sources and strong explanatory power of the models; however, there are deficiencies such as insufficient discussion on the design of internal corporate compliance systems,

and especially a lack of research on building executable solutions from the perspectives of data architecture, control nodes and division of responsibilities.

3. Core Issues in Tax Risk Control for Multinational Enterprises

Multinational enterprises are subject to cross-jurisdictional, cross-regulatory, cross-system and cross-departmental international tax risks. First, due to the complexity of the transaction structure, the risk has been recognised late. Headquarters, regional centres, shared-service centres, R&D centres and sales subsidiaries are all involved in various transactions of goods, services, finance, licences and cost sharing. Deviations in the contract provisions, functional risk analysis or selection of comparable companies at any node may be transmitted to multiple jurisdictions. Second, Pillar Two has introduced a 15% global minimum tax rate, so companies can no longer rely on a single statutory tax rate and must now also consider effective tax rates, exclusions, deferred taxes and substantial income exclusions by jurisdiction. Third, the tax data is distributed in multiple places: ERP, shared financial systems, contract management, customs, HR and legal systems, etc. Without a common master data and transaction tag, the company will not know how the tax result relates to economic activity in time.

Bajgar and others took the reform of the EU country reporting as a natural experiment and found that stronger multinational corporate tax compliance would reduce corporate sales and industry concentration; therefore, it was suggested that tax compliance should not be seen as a cost but also provide a competitive advantage for enterprises [7]. Chen's model study on the global minimum tax showed that the minimum tax would affect profit-shifting costs, real investment incentives and small-country tax revenue, and thus companies needed to re-evaluate the connection between tax incentives and real investment [8]. Haufler and Kato further indicated that if the global minimum tax only covers large enterprises, it will result in a threshold effect and differentiated tax rate competition; thus, companies will need to carry out long-term compliance assessments concerning the size of the group, division boundaries and transaction arrangements [9]. Based on the UNCTAD World Investment Report 2025, given the reduction in global FDI, an open and predictable policy environment needs to be created to encourage investment [10]. Therefore, tax risk control should not be viewed as a reduction in tax amount, but rather as a reduction in penalties, disputes, back taxes, reputational damage and management failure under the uncertainty of rules.

4. Construction of International Tax Compliance System and Tax Risk Control Strategies

The five levels of the international tax compliance system put forward in this paper are: the data collection stage, the rule mapping stage, the risk quantification stage, the control execution stage and the governance feedback stage. The Data Acquisition Layer collects data for various entities and transactions, including contracts, tax returns, cBCRs, GloBE, transfer pricing documents, etc.; the Rule Mapping Layer organises tax laws, treaties, Pillar Two, CFC rules, interest deduction limits, mismatch rules, and permanent establishment rules in different jurisdictions; the Risk Quantification Layer assigns a risk score according to an indicator system; the Control Execution Layer implements contract review, price adjustments, return verification and dispute resolution; and the Governance Feedback Layer ensures that the board, audit committee, tax office, regional finance department and business departments are in a closed-loop system of responsibility.

Table 2 shows the five levels of the implementation of the compliance system. The core of this architecture is not a database; rather, it is the integration of transaction facts, legal rules and control evidence. The Data Acquisition Layer answers "Where is the data?"; the Rule Mapping Layer determines "Which rules apply?"; the Risk Quantification Layer determines "How severe is the risk?"; the Control Execution Layer designates "Who is responsible for handling it?"; and the

Governance Feedback Layer presents "How to continuously improve?".

Table 2. Layered Architecture of International Tax Compliance Systems

Layer	Function	Key data	Output
Data ingestion	Consolidate tax-relevant data	ERP, CbCR, GIR, contracts, invoices	Standard tax data mart
Rule mapping	Encode jurisdictional obligations	CIT, VAT, WHT, treaty, Pillar Two	Rule library and alerts
Risk scoring	Quantify exposure	ETR, TP margin, PE signals, tax disputes	Risk score and priority
Control execution	Trigger preventive actions	Workflow logs, approval evidence	Control records
Governance feedback	Allocate accountability	KPIs, audit findings, remediation plan	Board-level tax risk report

First, establish an international tax compliance risk index. Assuming a company i faces risk indicators K during a period t , including deviations from the effective tax rate, deviations from related-party transaction profit margins, a higher proportion of profits from low-tax jurisdictions, reliance on tax incentives, pending tax disputes, exposure to permanent establishments, and reporting delays, the comprehensive risk index can be expressed as:

$$R_{i,t} = \sum_{k=1}^K w_k z_{i,t,k}, \quad \sum_{k=1}^K w_k = 1, \quad w_k \geq 0 \quad (1)$$

In the formula, represents $R_{i,t}$ the comprehensive tax risk index of $z_{i,t,k}$ the multinational enterprise during the period t , $z_{i,t,k}$ is the standardized risk indicator, w_k and is the indicator weight. Enterprises can determine the weight using expert weighting, the analytic hierarchy process, or machine learning weighting based on historical audit results w_k . When $R_{i,t}$ the preset threshold is exceeded, the system automatically triggers the tax review process.

Second, calculate the Pillar Two effective tax rate by jurisdiction. For both jurisdiction j and period t , the effective tax rate should be calculated based on accounting profits, with adjustments made to income and tax amounts according to the GloBE rules:

$$ETR_{j,t} = \frac{ACT_{j,t}}{GI_{j,t}} \quad (2)$$

In the formula, $ETR_{j,t}$ represents j the effective tax rate of the jurisdiction, $ACT_{j,t}$ represents the adjusted tax coverage, and $GI_{j,t}$ represents GloBE income. The management significance of this formula lies in shifting tax risks from the overall group perspective down to the jurisdictional perspective, preventing a low-tax jurisdiction from being masked by the group's average tax rate.

Third, calculate the supplementary tax exposure. If the minimum tax rate is denoted as τ_{min} and the substantive income exclusion is denoted as $SBIE_{j,t}$, then the supplementary tax exposure can be expressed as:

$$TUT_{j,t} = \max(0, \tau_{min} - ETR_{j,t}) \times \max(0, GI_{j,t} - SBIE_{j,t}) \quad (3)$$

In this formula, $TUT_{j,t}$ the tax gap is supplemented for the jurisdiction. This model requires companies not only to calculate the tax rate difference but also to determine whether the profit falls under the low-tax income category and whether the exclusion of substantial income can reduce the

supplementary tax base. For entities enjoying tax holidays, R&D incentives, and investment credits, this indicator should be used as an important input for annual budgeting and investment decisions.

Fourth, establish a related-party transaction price deviation model. Let m the actual price of the related-party transaction be $P_{m,t}$, and the comparable independent transaction price or median of the range be $P_{m,t}^{arm}$, then the deviation is:

$$D_{m,t} = \frac{|P_{m,t} - P_{m,t}^{arm}|}{P_{m,t}^{arm}} \quad (4)$$

In the formula, $D_{m,t}$ the higher the value, the greater the deviation of the transaction price from the arm's length principle. For high-frequency transactions such as service fees, royalties, procurement markups, and financing rates, different tolerance ranges should be set; transactions exceeding the threshold must be supplemented with comparable analysis, functional risk statements, and business justifications.

Fifth, implement controls to minimize expected losses. Tax risk control should comprehensively consider the probability of occurrence, the degree of impact, and the control cost, and should not pursue unlimited compliance. Let i the probability of a risk event be $p_i(c)$, the amount of impact be I_i , the control intensity be c_i , and the control cost be C_i , then the control optimization objective is:

$$\min L = \sum_{i=1}^n p_i(c) I_i + \lambda \sum_{i=1}^n C_i, \quad 0 \leq c_i \leq 1 \quad (5)$$

In the formula, L is the weighted objective function of expected tax risk loss and control costs, and λ represents the management's sensitivity coefficient to compliance costs. This model suggests that companies should prioritize allocating limited resources to high-probability, high-impact, and highly controllable risk events, rather than evenly distributing tax personnel and external consulting budgets.

5. Problem-solving implementation strategies and governance safeguards

First, establish an all-encompassing tax data platform for the entire group. The enterprise will build entity master data, transaction master data, tax type master data and jurisdictional rule master data, connect financial, contract, invoice, customs, personnel and declaration data using unified coding, etc. The foundation of the data should support three types of reconciliation: CbCR reconciliation with consolidated financial statements, GloBE reconciliation with local tax declarations, and transfer pricing documentation reconciliation with actual transaction flows. Second, set up a rule-change observation system. Pillar Two, rules for controlled foreign companies, interest deduction restrictions, anti-hybrid mismatch and digital services tax policies are all highly dynamic. The company will designate an individual responsible for updating the rule system and key foreign-invested enterprise regulations monthly, as well as conducting impact assessments. Third, establish graded early warning thresholds. Low-risk items will be handled by the regional tax team; medium-risk items will be forwarded to the group's tax manager for examination; and high-risk items will be added to the audit committee's or the board of directors' risk list.

As shown in Table 3, tax risk control needs a closed-loop mechanism for the three stages of indicators, thresholds and actions. Thresholds are not mechanical figures but rather the cumulative assessment by management of regulatory intensity, business scale, historical disputes and jurisdictional sensitivity. Given the high-impact nature of Pillar Two and CBDR consistency, preventative measures should be taken during the transaction design and budget-making stages of a company to avoid subsequent rectifications after the annual filing.

Table 3. Tax Risk Thresholds and Control Measures for Multinational Enterprises

Risk area	Indicator	Threshold	Control action
Pillar Two	Jurisdictional ETR	Below 15%	Top-up tax simulation
Transfer pricing	Arm's-length deviation	Above 10%	Benchmark refresh
CbCR consistency	Profit-employee mismatch	Top quartile	Substance review
Permanent establishment	Dependent agent signal	High frequency	Contract and activity review
Withholding tax	Treaty mismatch	Any exception	Beneficial ownership evidence
Tax controversy	Open audit exposure	Material amount	Reserve and defense file

Fourth, enhance the cooperation mechanism of tax, business, finance and legal departments. The tax authorities should participate in the design of the business model, the development of contract templates, profit-sharing policies, shared-service pricing, investment and financing structure, etc., to prevent the business department from independently creating transactions and then facing tax liabilities due to the passive intervention of the authorities. Fifth, build a tax evidence chain-of-custody management system. All major related-party transactions should keep the contracts, board resolutions, service delivery records, cost allocation basis, comparable analysis reports and local declaration materials; all tax incentives should retain qualification documents, R&D records, personnel compensation, asset usage and proof of economic substance. Sixth, promote the application of digital tools. Rule engines can be added to the ERP and tax management system of a company to automatically identify profits in low-tax jurisdictions, abnormal gross profit margins, abnormal service fees, treaty benefit risks, and overdue declaration risks, and generate auditable logs.

6. Conclusion

This paper will introduce an all-encompassing system for foreign tax compliance and tax risk management of multinational enterprises based on the pillars of the OECD/G20 Inclusive Framework, Pillar Two and transfer pricing. Based on the above analysis, the main issue in cross-border tax compliance is no longer whether a company files a tax return, but rather how to present consistent data and supporting materials that show the actual profit, tax liability and economic basis of the enterprise. Therefore, multinational enterprises must build an all-encompassing compliance system comprising six parts: governance structure, data foundation, rule base, quantitative model, control process and evidence chain. The risk index, effective tax rate, supplementary tax exposure, price deviation and expected loss models proposed in this paper can help the company establish an all-weather, quantifiable and traceable tax risk management system. A limitation of this paper is that it uses only publicly available statistical data and normative models, and has not conducted empirical tests on enterprise-level micro-tax data. In the future, some research may be conducted by combining real-world transaction data of multinational enterprises, tax-related dispute cases, and machine learning models to examine how various control mechanisms actually affect the amount of additional tax, the period of disputes, and compliance expenses.

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