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Economic and Institutional Drivers of Transfer Pricing: A Global Perspective

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Abstract

Transfer pricing is now one of the most important problems within the international taxation domain due to the strategic approach of multinational companies in manipulating the intra-group transactions in the business process to reduce these taxes, and how they try to redistribute the benefits away from the taxation jurisdictions and high tax platforms. This study focuses on the interlocutor variables of the transfer pricing decision and pays attention to the corporate tax rates, economic development and trade openness, and institutional quality in 95 countries over the years 2014 to 2024. A variety of advanced panel econometric techniques are employed in the analysis, which employ tests of unit root, Pedroni cointegration tests, Fully Modified and Dynamic Ordinary Least Squares, or panel least squares in the study, to distinguish between the long-run equilibrium relationship and the short-run dynamics. Results suggest that as corporate tax rates get higher, they provide more of an incentive for profit gains to get diverted and so result in declining gains of corporate income tax revenue, and the higher the level of economic development and openness of the trade, the more robust the capacity to tax. Institutional quality, however, fails to show a consistent effect to suggest that institutional reforms - governance reforms - were not part of a broader structural reform within a country. Short-run models also support the notion that economic growth and integration via trade cause stronger corporate tax revenues, and changes in statutory tax rates for companies, or indicators of governance, do not have an immediate impact. These findings highlight the fact that transfer pricing does not stand in an isolated sphere of economic and institutional circumstances, and hence is not just a by-product of tax policy. The study concludes that the protection of national tax bases requires a multifaceted approach of a combination state regime-composed of competitive design of taxes, trade-enhancing approaches, robust enforcement, and capacity-building type reforms to reduce vulnerabilities to global profit-shifting practices.

Keywords: Transfer Pricing, Profit Shifting, Corporate Taxation, International Taxation

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1. INTRODUCTION

Globalization has changed the face of the global economic system forever, and multinationals have acquired the capacity to function integrated and seamlessly throughout national borders. This connectedness has facilitated the process of accelerating international trade and also the free movement of international FDI, on one hand, and on the other, it has made companies more vulnerable to the arms race of overseeing their tax charges (Hussain, 2024; Srivastava, 2025). Among the most controversially discussed issues are the questions that arise in the context of strategic use of transfer pricing, which is a pricing system that allows to determination of the price of goods, services, or immaterial products that are delivered between related parties of a multinational group. Though transfer pricing benefits are utilized for legitimate business objectives, transfer pricing has become increasingly used for the reasons of shifting taxable profits in areas with low tax rates compared to the rest of the world and consequently cutting down on the global business's contribution to the national treasury (Cristea & Nguyen, 2016; Johansson et al., 2017; Bukhari et al., 2025). This policy has important links to the problem of base erosion, and profit shifting more generally, or the intentional taking advantage of conflicting laws and regulations to move profits to low-tax jurisdictions. Diverse additional efforts have been made by the Organization for Economic Cooperation and Development, reinforced by the European Commission, in view of offsetting this kind of

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strategy (Brauner, 2014; Devereux & Vella, 2014; Umair et al., 2025) in favor of the need for coordination at the international level. However, the subjective nature of deciding transactions as arm's length plus the intractable problems of application when it comes to enforcing transfer prerequisites rules pose a persistent problem, especially for developing nations, which are limited by less sophisticated administrative capacity (Ali et al., 2023; Akinsola et al., 2025; Aman et al., 2025).

The effects of aggressive transfer pricing are explicitly found to be the most damaging for developing economies, where the loss of tax revenue puts a drag on public investment and economic development. Empirical studies have highlighted that profit-shifting activities have a significant impact on the depletion of the tax bases of these jurisdictions and, thus, the erosion of the principles of fiscal sovereignty and inequality in the international tax space (UNCTAD, 2020; Sebele-Mpofu, 2021; Kwaramba et al., 2016; Ditta et al., 2025). Hence, transfer pricing issues remain on the frontline of international economic policy debate, not only shaping the debate worldwide on fair taxation, but also appearing on the agenda of the international regional tax cooperation channels, such as the African Tax Administration Forum. With an increasing interest surrounding the international taxation policies of multinational enterprises, transfer pricing has shifted from being considered as a limited technical area (the- α treatment of the relevant international tax regimes) to becoming a key area of policy concern for both the policy maker and the international organizations. International bodies such as the Organization for Forum Co-operation, World Bank, and the International Monetary Fund have currently developed a focus on its necessity of well-coordinated regulatory measures to monitor and counter their profit-shifting schemes (Hearson, 2018; Brown and Sadiq, 2025; Iqbal et al., 2025).

Transfer pricing laws have been adopted by many developing economies, such as Zimbabwe, Kenya, Tanzania, Zambia, and Mauritius, based on guidelines promulgated by the Organization for Economic Co-operation and Development and the United Nations. These frameworks are intended to set minimum base erosion and change in profits out of the related party transactions so that the related party is not disadvantaged, heeding the principle of arm's length transactions and safeguarding the natural resource base, and encourage fair competition (Mwape et al., 2022; Ali et al., 2025). Again, however, such reforms have been followed by unequal enforcement owing to the weaknesses in the respective institutions and budgetary constraints the revenue authorities have faced. Multinational enterprises have been furnishing from all sides of the world with taxation systems loopholes and leaks through having resort to transfer pricing practices based on overcharging invoices, charging high intra-group service charges, re-structuring debt levels within an affiliate, and misdirecting income flow to jurisdictions with lower tax rates. Transfers involving intangible assets and IP rights are even more difficult to control as their value is likely to be extremely subjective and subject to manipulation (Mwape et al., 2025; Johansson et al., 2017; Ali et al., 2025). Simultaneously, firms structure themselves in ways that ensure profits are maximized for the national firms at the collective level while undermining the sustainable revenue bases of developing economies, already fragile in terms of revenues being leached. Thus, transfer pricing is an issue that has moved to the center of not only the taxation debate but also more broadly in terms of general definitions of equity in the world economy in so far as it directly affects the capacity of states to finance their development priorities and provide for their population. Transfer pricing is a term used and invented to refer to the pricing of a transaction involving goods, services, or intangible assets between enterprises that form a chain of enterprises known as a multinational corporate structure. This includes fees payable by a parent company and its subsidiaries, or other associated entities that are controlled by the same parties. The main objective of pricing transfer is to correctly induce income, expenses, and dieback between different tax jurisdictions to collect taxes within the country, but which may fail to do so in a distorted manner in the cost of national (OECD, 2017; Eden, 2001), and willpower to equitable co-unitary collection. However, the use of transfer pricing has gained importance since transfer pricing is being misused to diminish the tax liability. In other words, multinational corporations are often complicit in the manipulation of transfer pricing contracts to artificially borrow profit from places with high tax rates to places with special or no tax regimes, and to lower their taxes at the multilateral level. This aggressive behavior has been central to a number of discussions on aggressive tax planning and erosion in the international tax base (Cobham et al., 2019; Beer et al., 2020; Aziz et al., 2025). In order to address these fears and to reinforce cross-border taxation's proper integrity, a panoptic monopoly basket including 5 methodologies grounded on the arm's homeotic principle was developed by the Organization for Economic Co-operation and Development. This principle maintains that where interrelated persons are advised on any commercial subject, they must deal under the same considerations which would ordinarily bežay interrelated persons or persons acting on their own economic self-interests. Although there have still been implementation issues (a lack of technical knowledge and a common taxation system), these perceptions of residency have subsequently been accepted as the global transfer pricing standard (Organization for Economic Cooperation and Development, 2017; Brauner, 2014; Saim et al., 2025). The suggested methods of the Organization for Economic Co-operation and Development are categorized as transactional approaches and the transactional profit split method. The conventional approaches are transaction-based: direct price comparison of related-party transactions, as well as the comparison of transactions between independent enterprises under similar circumstances. By far the biggest of these methods is that which focuses on price and gross profit margin, which are examined. Among them, the Comparable Uncontrolled Price Method compares the price in the case of the controlled transaction with the price in the case of the uncontrolled transaction; the Resale Price Method takes into consideration the margin that would be made on a product resale; the Cost Plus Method is based on costs incurred for the production of the product plus a fair markup.

On the contrary, transactional profit-based techniques do not rely on the direct use of pricing comparisons but on the assessment of the division of the net profits that has occurred as a result of accrual between intercompany transactions. These techniques can be particularly helpful where some transactions or markets are unsellable at their selling price because of idiosyncratic characteristics. The Transactional Net Margin Method (FNMMM) focuses on the achievement

of net profit as a significant percentage of an appropriate benchmark, such as sales, assets, or expenses, and is compared with another net margin to that earned by independent enterprises. For example, the Transactional Profit Split Method, on the other hand, splits up the joint endorsement profits of related parties based on each party's contribution to the value-added process. As regards firm and complex situations, whenever intercompany transactions are related to intangibles or integrated global transactions, applying existing methods is likely to leave the taxpayers short of ensuring that the arm's length rule is complied with (Lang et al., 2019; Avi-Yonah & Benshalom, 2011; Rana et al., 2025).

A key aspect when evaluating the conformity of transfer pricing standards around the world is the conformity of national tax laws towards the one prescribed by the Organization for Economic Co-operation and Development. To date (August 2023), around seventy-six jurisdictions have adopted the Organization of Economic Co-operation and Development (OECD) Transfer Pricing Guidelines as a part of their domestic tax law. However, the levels of practical implementation in these jurisdictions still vary, reflecting a significant difference in administrative capacity, policy priorities, and legal maturity. In some places - loosely called tax havens - there is little or no regulatory oversight. For example, the British Virgin Islands have no adaptation of specific laws concerning transfer pricing, have no restrictions with regard to interest payment, and do not have any anti-hybrid legislation. By comparison, the Cayman Islands, which is proud of its nil rate of corporate income taxation, has no formal transfer pricing rules. Bermuda is also an example of a permissive jurisdiction in that while taxes on corporations and on capital gains are non-existent, measures via transfer pricing are not enforced. Tax havens are often strategically used by multinational companies to minimize tax burdens in groups of entities (Zucman, 2014; Gatt, 2023; Kumar et al., 2025). The ability of the multinational commercial enterprises to exploit such jurisdictions elevates the importance of TP in achieving the Hollande water goal of base eroding avenues of taxation in businesses. Common tools are intra-group pricing manipulation - first, discriminating or under-billing of sales to subsidiaries in low tax jurisdictions, or over-billing of sales to parents. These practices have had a very good effect in the displacement of the profits from the jurisdiction of high taxpayers (Jansky & Prats, 2013; Ferreira, 2024; Mpofu & Wealth, 2022; Khan et al., 2025; Aqeel et al., 2025).

Key to countering such practices is the concept of comparability, which is a part of the arm's length concept. Controlled transactions are those in which the parties are related, and the concept of the arm's length price is based on the periodic transactions between two uncontrolled enterprises that are in similar market situations. This, for example, is known as the market transactions basis. This is highly common as traditional transactional-based approaches like the Comparable Uncontrolled Price Method, Resale Price method, and Cost Plus method are used in this scenario. Yet, the scope of application is limited to a great extent by such procedures, primarily with respect to transactions of intangibles. In most cases, this type of data is either absent or inaccurate, due to the characteristics and shortcomings of the non-market intangibles (Barrobes Carbonell, 2024; Timoshenko, 2015; Shahid et al., 2025). Moreover, the OECD and the Council Guidelines on Transfer Pricing do not, as they are just a set of recommendations that can serve as an international benchmark and a reference source for laws of this type, but they are not legally binding. As a result, the principles that refer to different concepts are then sometimes interpreted in different ways by the taxation authorities, causing problems and administrative burdens for employees in order to prevent legal disputes. For example, the litigation, such as the Unilever Kenya Limited case, illustrates some of the inconsistencies in the application of the arm's length principle in the international market since it is evident that the realities of the emerging global economy are divergent (Lang & Storck, 2016; Napadaica, 2025; Ahmad et al., 2025).

In addition to pricing documentation, there is an entire slew of documentation items that require the satisfaction of multiple Ghost properties that are much more difficult to prove compliant with for the majority of organizations that run on a multinational scale. In countries with weak administrative capabilities, particularly in developing countries, these duties can be debilitating. Also, other economic reasons outside taxation, which are important for Efficiency, synergies in operations, and strategic planning-based investment in the future, are pushed over in favor of tax minimization objectives, which achieve distortion of commercial realities (Dharmapala 2014; Ball 2023; Ghauri et al., 2025). These problems become particularly problematic when the business model becomes complex, like in the digital economy, for example. Many value chains linked to digital services are not place-linked as the production and consumption of digital services is often situated elsewhere, and it can be difficult to identify where the value lies using traditional analytical approaches. This makes interpretation difficult and leaves transfer pricing mechanisms open to exploitation (Devereux & Vella, 2018; Monsenego, 2022; Anus et al., 2025). However, transactional methods that assume the value, as well as profit-based methods, such as the Transactional Net Margin Method and the Profit Split Method, have difficulties. These include variances of cost structures, irregular combinations of accounting packages of national accounting codes, and uncertainties of valuation of brand equity, intellectual property, and other immaterial values. Added to this, economic factors (inflation, currency differences, differences in the fiscal policies, etc.) make the comparability analysis even less computable (Navarro, 2020; Markham, 2005; Arshad & Ali, 2016; Hebous & Johannesen, 2020). The OCBD has gone a long way in influencing the convergence of international tax practices, but the real-life embrace of the transfer pricing concept introduces numerous legal, technical, and ethical intricacies. Filling these gaps will take a better multilateral cooperation mechanism and better legal subsequent means, and a renewed sense of general control as the economic content of intercompany transactions is considered.

2. LITERATURE REVIEW

Grubert and Mutti (1991) provide a simple explanation of the reaction of multinational enterprises to international tax structures in terms of response rates. Using a novel comprehensive dataset for thirty-three countries going back to 1982, the authors analyze how US-based multinational corporations allocate income and capital among the different statutory

rates of taxation and trade policies. Specifically, they demonstrate that multinational firms report abnormal profits on their operations in these low-tax-rate countries, which we demonstrate empirically by looking at profits from operations in countries where the top marginal rate of corporate tax is low. The negative association of the tax rates and reported profitability confirms that tax minimization is one important factor that determines the profit allocation strategies. Furthermore, the study demonstrates the double and even countervailing effect of the tariffs: tariffs increase the distance between the two types of MCP practices and their domestic markets and hinder the export-oriented activities. These revelatory facts highlight the very crucial impact that fiscal and trade policies have on investment and reporting of revenues at the international level.

In a similar stream of research, the paper of Clausing's (2003) paper investigates the consequences of national firms using transfer pricing systems with respect to tax incentives for intra-firm trade. Using detailed data on the international trade flows of U.S. firms, Clausing employs econometric regression models of pricing between domestic affiliates (domestic intrafolks) and interfolks for the time period 1997 to 1999 and tests for systematic intra-group pricing differences. The results suggest that the lower the tax rate is in the same foreign country, the lower export prices and the higher import prices in the related party trading will be. Pricing manipulation allows artificial transfer of profit amounts to the places of more advantageous tax rates and is a typical feature of deliberate tax rationalization. Argued using the concept of tax optimization, Clausing's paper provides compelling evidence that MNEs are tax-sensitive and transfer price aggressive to optimally distribute taxes among countries in the world at the anticipated expense of national revenue loss of base.

Moving on from the descriptive to the more theoretical and policy-related perspective, Bucovetsky and Haufler (2008) analyze the consequences of unilateral removal of preferential tax regimes on international tax competition using a game-theoretical model. Their model differentiates between big and small countries and allows interactions between governments that are required to strategically establish the given rates of the corporate tax. Empirical results indicate that these incentives are stronger in the smaller countries, where the economy is more open to movements of mobile capital, hence more vulnerable to mobile capital flows. Indeed, against the intention of country policy papers by international organizations such as OECD and the EU, the authors propose that the abolition of the preferential regimes will very likely increase (not decrease) the harm catalyzing tax competition. In particular, attempts at tax convergence in the absence of a quest for re-investment into the effort to achieve convergence in structural tax systems create a collective action problem, which creates a downward spiral into low effective global tax rates, which hurts public revenue sustainability.

The establishment of the role of tax havens in the tax system: Critical analysis of theoretical models and empirical studies by Dharmapala (2008). The paper takes a closer look at the impact of tax havens on the revenues of high tax jurisdictions, international tax competition, and individual taxpayer conduct by multinational companies. Contrary to conventional wisdom, the paper finds that a lot of tax havens do in fact have higher standards of government than has traditionally been thought—that is, they are not merely attractive only to minions of the Dark Side. Instead, tax havens can be strategic jurisdictions of profit flows as well as foreign investments. While they exacerbate the rate race, Dharmapala recommends seeking means of improving international tax co-ordination mechanisms, instead of an absolute withdrawal from any such mechanisms, to lead to efficient and justifiable results.

Recent research has demonstrated that the outbreak of transfer pricing practices between multinationals has been taking place through the use of intangible assets as a medium to avoid tax obligations. Borrowing the data of patent applications on the period 1985 to 2005 from the European Patent Office, in the study Griffith, Ericson, Roman and Lage, Callon and Subbermah (2014), we analyze the correlation existing between the localization of intellectual property and preferential fiscal regimes. In other words, the results from the model analysis based on mixed logit imply that incentives such as patent boxes are a strong determinant of an intellectual property developing location choice. These zero-tax spaces allow MNE firms to earn profits through a legal transfer of profits to the low-tax jurisdictions and lower the amount of reported revenues through high-tax jurisdictions. While such intensive tax planning indeed reduces the global tax burden of such entities, it imposes the same problems on tax authorities when it comes to globally averaging the creation of value and taxable income. In addition, some empirical work is directed at the evidence that prices have a strong dependence on exogenous parameters such as tariffs, exchange rate, and impacts from international reporting requirements. According to Bukhari et al. (2025), the arm's length principle is inappropriate for transactions involving intangibles because it is difficult to find actual comparables. Our literature reveals that tax motive mediation in transfer pricing decisions is affected by market uncertainty, regulatory uncertainty, and firms' non-tax motive objectives. Thus, reforms in the transfer prices standards need to be embedded considering a wider realm of economic and behavioral factors, particularly in the digitalized business models, while especially regarding the pricing of intangible assets and the sharing of the financial gains.

Contemporary methods of transfer pricing (TP) are experiencing a comprehensive reassessment, particularly considering the inadequacy and gauziness in the standard development techniques, such as the arm's length principle. Analysts like Avi-Yonah and Clausing (2021) have embraced approaches of apportionment systems, which are based on formulae, arguing that under prevailing transactional systems, the actual economic reality of global operating businesses is not reflected in transactions. These systems would be directed against distributive mechanisms that can be objectively measured, such as sales, assets, and employment, further restricting the ability of multinationals to use offshore contractions that allow jurisdiction with a weak level of taxation.

Transfer pricing to take advantage of tax rate differentials across countries has been among the main subjects of debate in the tax policy literature. Keen et al. (2013), in the context of a formal theoretical model, provide an optimal allocation of investment and pricing across jurisdictions that maximizes exceedances of tax revenue at the cost of productive efficiency, and give a motivation for strategic investment and pricing policy of MNEs. These consequences are

particularly prominent when it comes to aspects of weak tax collection and/or low-cost regulatory arbitrage. Now, even if introduced as an instrument to protect domestic industries, tariffs can interact with transfer pricing, which further changes the incentives for investment, especially in less developed economies with less sophisticated tax systems. Moreover, external economic shocks, such as economic instability in currencies, in the global supply chain, etc., are coincidentally considered to influence more and more transfer pricing decisions. Tavares and Owens (2019) analyze the effects of exchange rate shocks and cross-border variability in the inflation process on intra-firm profit distribution. Their study creates the case that if provided alongside exchange rate policies, optimized pricing plans may have a positive impact on financial performance and enhance their tax efficacy. This supports a new approach that transfer pricing requires analysis in the entire enterprise resource planning and financial risk mitigation context.

Quantitative research also indicates that arm's length regulation is poorly suited to non-transparent and volatile regulatory frameworks. Beer et al. (2020) end-use the simulation models and are able to find evidence that multinationals are more aggressive in shifting profits towards the jurisdictions with lower law predictability. These findings are consistent with the finding that transaction comparability is rendered dispersed at higher institutional risk. In response to such criticisms, scholars have proposed more suitable measures, especially positive, based on existing criteria or risk-adjusted comparables per country, which rectify this limitation in pricing measures (Devereux et al. 2020). The role of intangibles and IP is a long-lasting issue in transfer pricing disputes rounding the globe. As Griffith et al (2014) show, preferential tax systems (patent boxes) bring large differences in patent location decisions. More particularly, MNEs' compensation defaults below marginal holding rights to intellectual capital in higher-rate nations and have a high turnover level in lower tax nations, which leads to revenue leakage. This tends to distort the dynamic between the two areas - the place of creation of surplus and the place of concentration of profit. And also, empirical studies about service firms like accounting and consultancy firms have been able to establish the existence of such a profit shift. Johannesen and Zucman (2016) find that firms based on services use both intra-group financing structures and a high concentration of ownership of intellectual property to offshore profits. Both systems are facilitated by low disclosure standards and a lack of harmonization.

Comparability has always been a thorn in the flesh in the feasible application of transfer pricing regulations. Recent literature makes clear that the approach currently being applied (and which is based on geographic proximity) to instituting comparables does not yield acceptable outcomes. Alternatively, by adding macroeconomic variables, such as the country risk ratings, political stability, and market maturity in providing robustness to transfer pricing assessments (Devereux et al, 2020). The difficulty of supporting the application of the arm's recognition principle has been found particularly for developing countries, which often lack the information, administrative resources, and institutional capacities. As the hazard of the mispricing of profits remains a common issue across low-income contexts, and despite robust importance when it comes to public finance and fiscal sustainability, as emphasized by Cobham and Jansky (2019). Reforms grounded in the solution, therefore, require not just technical regulation, but more transparency, regional and political will at the multilateral level.

Indeed, the literature provides sufficient evidence on the link between corporate governance and firm performance despite the existence of some mixed and conflicting findings in the literature regarding the CEO duality and gender composition. While split CEO and Chair roles have been proven to enhance firms' independence and well-being (Jensen, 1993), and merged executives can enhance alignment and well-being in times of hardship (Kabir et al., 2023; Ullah & Sohail, 2020), the relation between design elements of an organization and firm performance is unclear. Indeed, while gender-diverse boards are suggested to increase scrutiny, broaden strategic horizons and add value (Carter, Ashforth, & Erickson, 2003, Adams et al., 2010, Audi, Jolly, & Mitchell, 2025), other studies find conflicting evidence and where gains in performance are conditional on being culturally socially normalized and in composition (Huseyin, 2023, Farooq et al., 2024). Furthermore, much of the existing evidence is drawn from Western economies or generalized cross-country datasets (Gupta et al., 2014; Akbar et al., 2016), which may not capture the institutional realities of emerging markets such as the Gulf, where unique ownership structures, regulatory frameworks, and cultural expectations shape governance outcomes (Abdallah et al., 2017; Ararat et al., 2015). Despite Dubai's growing importance as a global financial hub, empirical research on how leadership role segregation and board gender diversity specifically affect firm profitability in the Dubai Stock Exchange remains scarce, creating a clear need for context-sensitive investigation that isolates and measures the independent effects of these governance mechanisms.

3. THEORETICAL FRAMEWORK DATA SOURCES

Transfer pricing refers to the establishment of prices for transactions conducted between entities within the same corporate structure, including intercompany transfers of goods, provision of services, and licensing of intellectual property. The matter is strategic for the multinational enterprise, for it affects the use of taxation sources and hence directly impacts the taxation liabilities of the group. The main body of regulation is that of the Arm's Length Principle, which was formulated by the Organization for Economic Co-operation and Development, states that transactions between related parties are to be valued as if they were transacted between independent entities in similar sets of market conditions (Eden, 2019; Lang, 2019). The successful use of the arm's length principle in an international context is determined by a number of structural and institutional factors. Among those are differences in statutory tax rates, differences in the administrative capacity and ease of enforcement of order, and the overall quality of institutional governance. These conditions have a substantial impact on the level of strategic profit shifting activities of MNCs through transferring income to the tax jurisdictions that hold more attractive payment rates (Beer et al., 2020; Bukhari et al., 2025). The persistence of such practices provides even more evidence of the need to know not only how tax policy should be designed but also how such policies are actually enforced in terms of the structure of the enforcement mechanism and legal infrastructure.

The theory of the Allingham/Sandmo model (Allingham, Sandmo, 1972) is the foundation of theory on the subject of transfer pricing and profit shifting behavior. In this model, compliance decisions are made by firms conditional on a set of parameters reflecting, for example, perception about the likelihood of the firm being audited and sanctions being experienced, and the marginal pay-off of tax evasion. Under the scheme, the degree of co-operation will increase the greater the perceived cost of detection is than the potential benefits of cheating. The theory is supported in many empirical studies. Clausing (2003) reports on how foreign tax rate asymmetries lead to huge intra-firm trade price distortions, and Dharmapala (2008) shows that under allegations of lax enforcement regimes, profit-misallocation increases. Further, Bartelsman and Beetsma (2003) show that the extent of profit shifting is positively related to the international tax differential. In addition to optimization of tax, the organization of a multinational enterprise must be designed on a more strategic basis. Drawing on Dunning's (1977) eclectic paradigm in combination with Rugman and Verbeke's (2003) theory, the multinational corporations are seen performing functions, risks, and assets across countries not only to operate tax-minking, but also as a result of efficiency, scale, and market access motives. Transfer pricing, we might say, is no longer an institution of an allocation of profits, but is an institution to coordinate worldwide activities.

Guided by these insights, consequently, in the present study, a conceptual model is developed with the view to examining transfer pricing behavior from the standpoint of global tax governance. Building on Clausing (2003), Dharmapala (2008), and Bartelsman and Beetsma (2003), in this paper, elements of enforcement intensity, institutional quality, and economic openness are embedded into a model where transfer pricing compliance and the allocation of profit strategies are the primary lubricants in tax avoidance planning. The objective is to generate empirical insights that can support the harmonization of international tax rules and the refinement of regulatory instruments, such as the arm's length principle. Based on the theoretical discussion, the functional form of the model becomes:

$$TP_{it} = F(CTR_{it}, GDP_{it}, TRADE_{it}, INST_{it})$$

where,

TP = Transfer pricing decision (measured through Corporate Income Tax Revenue (% of GDP))

CTR = Country-specific corporate tax rate

GDP = GDP per capita (economic development indicator)

TRADE = Trade openness (ratio of trade to GDP)

INST = Institutional quality (governance, corruption index)

i = set of panel countries

t = time period (2014-2024)

For examining the relationship between the independent variables and dependent variables, the mathematical model can be converted into an econometric model. The model can be written as:

$$TP_{it} = \alpha + \beta_1 CTR_{it} + \beta_2 GDP_{it} + \beta_3 TRADE_{it} + \beta_4 INST_{it} + \mu_1$$

Where,

α = intercept

β = slope coefficient

μ = error term

This study utilizes panel data covering the period from 2014 to 2024 for a sample of 95 countries, including both advanced and emerging economies. The dataset is compiled from a combination of international institutional reports, national government databases, and publicly available economic indicators.

Transfer pricing behavior is proxied through corporate income tax revenue as a percentage of gross domestic product, following established practices in empirical tax policy research. These data are obtained from the World Development Indicators provided by the World Bank. Country-level statutory corporate tax rates are sourced from the Organization for Economic Co-operation and Development Tax Database, the World Bank, and the official tax portals of national governments.

To evaluate global adherence to transfer pricing norms, the study incorporates data from the Transfer Pricing Country Profiles published by the Organization for Economic Co-operation and Development, which detail the extent to which individual jurisdictions align with the Organization's Transfer Pricing Guidelines.

Institutional quality is captured using two complementary measures: the Worldwide Governance Indicators, which assess governance effectiveness, rule of law, and regulatory quality, and the Corruption Perceptions Index published by Transparency International, which provides cross-national comparisons of perceived public-sector corruption.

Trade openness, a critical external factor influencing transfer pricing incentives, is measured by the ratio of a country's total trade (sum of exports and imports) to its gross domestic product. These statistics are also drawn from the World Development Indicators database. This multi-source, multi-dimensional dataset enables a comprehensive empirical assessment of the determinants of transfer pricing behavior and regulatory compliance across a diverse set of jurisdictions.

4. EMPIRICAL RESULTS AND DISCUSSION

The descriptive statistics in Table 1 provide an overview of the central tendencies and distributional properties of the key variables used to examine transfer pricing behavior across countries. These variables include the transfer pricing decision, country-specific corporate tax rate, gross domestic product per capita, trade openness, and institutional quality. The variable representing the transfer pricing decision, measured through corporate income tax revenue as a percentage of gross domestic product, has a mean value of 0.731 and a median of 0.850. However, the distribution is notably left-skewed, with a skewness value of -1.345 and a very high kurtosis value of 10.630. This indicates a long left tail and a sharp peak, suggesting that most countries collect a relatively high level of corporate tax revenue relative to gross domestic

product, while a few collect significantly less. The Jarque-Bera test statistic of 2192.975, with a p-value below 0.05, confirms that the residuals for this variable are not normally distributed. This non-normality may necessitate the use of robust regression techniques or transformation in later analyses (Gujarati & Porter, 2009).

The country-specific corporate tax rate also displays a negatively skewed distribution, with a skewness value of -1.480. The mean of this variable is 2.637, while the median is higher at 3.536, reinforcing the skewed nature of the data. A kurtosis value of 4.975 indicates a distribution that is more peaked than the normal distribution. With a Jarque-Bera statistic of 308.932, this variable too fails the normality test. These statistical features suggest that relatively fewer countries impose low corporate tax rates, while many maintain moderate to high levels. This pattern is consistent with the theory of global tax competition, where only a small number of jurisdictions serve as low-tax environments, while the majority impose more conventional tax levels (Slemrod & Wilson, 2009).

The gross domestic product per capita, used as a proxy for economic development, is more symmetrically distributed with a skewness value close to zero (-0.034), and a kurtosis value of 2.507, which is near the normal distribution benchmark of 3. The mean value is 8.772, and the median is 9.215. These values suggest a relatively balanced distribution of income levels across countries in the sample. The Jarque-Bera statistic of 27.997 is modest, indicating only a slight deviation from normality. This variable appears statistically well-behaved and suitable for use in linear regression models without further adjustment.

The trade openness variable, measured as the ratio of trade (exports plus imports) to gross domestic product and transformed into logarithmic form, has a mean value of 4.696 and a median of 4.002. The distribution is mildly right-skewed, as shown by the positive skewness value of 0.397. The kurtosis is 3.936, slightly above the normal benchmark, and the Jarque-Bera statistic of 36.572 suggests some degree of non-normality. While not extreme, this deviation indicates that trade openness levels vary significantly, likely due to differing national trade policies, geographic constraints, and economic structures. Nevertheless, the statistical properties remain within acceptable bounds for econometric modeling (Frankel & Romer, 1999).

The variable for institutional quality, which may include dimensions such as regulatory effectiveness, rule of law, and control of corruption, has a mean value of 3.741 and a median of 4.238. The distribution is slightly left-skewed, with a skewness value of -0.297, and the kurtosis of 2.642 indicates that the distribution is only modestly flatter than the normal curve. The Jarque-Bera statistic of 21.112 suggests that the distribution departs from normality but not to a severe extent. These values are consistent with the idea that institutional development varies moderately across countries but tends to cluster within a certain range, reflecting shared governance challenges and reform trajectories (Kaufmann, Kraay, & Mastruzzi, 2010).

Table 1: Descriptive Statistics

	LTP	LCTR	LGDP	TRADE	LINST
Mean	0.731	2.637	8.772	4.696	3.741
Median	0.850	3.536	9.215	4.002	4.238
Maximum	2.016	3.503	12.013	6.528	4.872
Minimum	-1.972	2.147	5.643	3.112	2.097
Std. Dev.	0.287	0.377	1.577	0.522	0.447
Skewness	-1.345	-1.480	-0.034	0.397	-0.297
Kurtosis	10.630	4.975	2.507	3.936	2.642
Jarque-Bera	2192.975	308.932	27.997	36.572	21.112

The correlation matrix presented in Table 2 offers a preliminary assessment of the linear relationships between the transfer pricing decision and several explanatory variables, including country-specific corporate tax rate, gross domestic product per capita, trade openness, institutional quality, and regulatory quality. These pairwise correlation coefficients help to identify potential multicollinearity issues and provide early insights into the nature and strength of associations among the variables in the dataset. The transfer pricing decision—measured as corporate income tax revenue as a share of gross domestic product—exhibits the strongest positive correlation with the country-specific corporate tax rate (correlation coefficient = 0.603). This moderately strong association suggests that higher statutory corporate tax rates are associated with increased corporate income tax revenues, which is consistent with the economic intuition that higher tax rates generate more tax revenue, provided they do not trigger extensive tax avoidance or base erosion. This relationship also reinforces the idea that corporate tax incentives play a significant role in shaping multinational enterprises' transfer pricing behavior, as higher tax rates may motivate companies to shift profits away from jurisdictions with elevated tax burdens (Grubert & Mutti, 2000; Johannesen & Zucman, 2014).

The correlation between the transfer pricing decision and gross domestic product per capita is weakly positive (0.094), indicating only a minimal association between a country's level of economic development and its corporate income tax performance. While this low coefficient suggests that development alone does not explain transfer pricing behavior, it may reflect the interplay of more nuanced institutional, legal, and tax enforcement factors that are not fully captured by income level alone (Cobham & Janský, 2019). Similarly, trade openness shows a very weak positive correlation with the transfer pricing decision (0.039). This negligible association implies that greater integration into global trade networks

does not necessarily translate into higher corporate tax revenues. In fact, highly open economies may be more exposed to aggressive tax planning by multinational corporations due to increased cross-border transactions, which complicate the detection and regulation of transfer mispricing (Clausing, 2003).

The association between institutional quality and the transfer pricing decision is also weak (0.052), which may seem counterintuitive given the theoretical expectation that better governance, lower corruption, and stronger rule of law should support more effective tax collection. This result suggests that institutional quality alone may not be sufficient to deter transfer pricing manipulation or to enhance tax compliance, especially in the presence of sophisticated avoidance strategies that exploit legal loopholes or inconsistencies in international tax rules (Fuest & Riedel, 2012). The correlation between regulatory quality and the transfer pricing decision is slightly stronger at 0.200, but still modest. This relationship may indicate that countries with better regulatory environments—such as stronger legal systems, clearer enforcement mechanisms, and more consistent application of rules—are somewhat more successful in collecting corporate income tax. However, the low magnitude of the coefficient suggests that other factors, such as tax authority capacity, international cooperation, and access to taxpayer data, may also play crucial roles (Beer, de Mooij, & Liu, 2020).

Looking beyond the dependent variable, several high correlations among the explanatory variables raise potential concerns about multicollinearity in subsequent regression models. Notably, the correlation between institutional quality and corporate tax rate is very high (0.700), suggesting that countries with stronger institutions also tend to have higher statutory tax rates. This may reflect broader policy coherence in advanced economies, where institutional frameworks support more comprehensive fiscal systems. Similarly, the correlation between regulatory quality and trade openness is strong (0.774), implying that countries more engaged in international trade also tend to maintain better regulatory environments. These high correlations indicate the need for multicollinearity checks, such as the variance inflation factor (VIF), before interpreting regression coefficients (Wooldridge, 2016).

Table 2: Correlation Matrix

Variables	LTP	LCTR	LGDP	LTRADE	LINST	LREG
LTP	1.000					
LCTR	0.603	1.000				
LGDP	0.094	0.210	1.000			
LTRADE	0.039	-0.212	0.240	1.000		
LINST	0.052	0.700	0.403	0.035	1.000	
LREG	0.200	0.500	0.095	0.774	0.024	1.000

The unit root test results presented in Table 3 provide critical information about the stationarity of the variables used in the panel data analysis. These results are based on four widely used panel unit root testing procedures: Levin, Lin, and Chu t-statistic, Im, Pesaran, and Shin W-statistic, the Augmented Dickey-Fuller (ADF) Fisher chi-square test, and the Phillips-Perron (PP) Fisher chi-square test. Together, these tests help determine whether the variables are stationary at level (i.e., integrated of order zero) or require differencing to become stationary (i.e., integrated of order one). Stationarity is a fundamental requirement in panel data econometrics because non-stationary variables can lead to spurious regression outcomes and invalid inference (Baltagi, 2021; Wooldridge, 2016). The results show that the variable representing the transfer pricing decision is clearly stationary at the level across all four tests. The Levin, Lin, and Chu test shows a strongly negative test statistic of -14.227 with a probability value of 0.000, confirming that the null hypothesis of a unit root can be rejected. Similar conclusions are reached using the Im, Pesaran, and Shin test and both the ADF and PP Fisher tests. Therefore, the transfer pricing decision variable does not exhibit a unit root and can be safely used in its level form in further analysis.

The country-specific corporate tax rate variable provides more mixed results. Although the Levin, Lin, and Chu test at level returns a very negative statistic (-33.735), its p-value is 0.080, which is slightly above the conventional 5 percent significance threshold. However, both the Im, Pesaran, and Shin test and the differenced test versions (differenced corporate tax rate) provide strong evidence of stationarity. The differenced version passes all four tests with highly significant values. This suggests that the corporate tax rate variable is non-stationary at the level but becomes stationary after first differencing, implying it is integrated of order one, I(1).

The results for gross domestic product per capita reveal even weaker evidence of stationarity at the level. The Levin, Lin, and Chu test is marginally significant ($p = 0.015$), but the other three tests do not reject the null of a unit root. The Im, Pesaran, and Shin test, in particular, gives a high p-value of 0.965, clearly indicating non-stationarity. However, at first difference, all tests provide strong evidence of stationarity. Therefore, gross domestic product per capita should be treated as non-stationary in levels but stationary in first differences, also I(1). This outcome aligns with economic theory, which often treats output-related variables as non-stationary due to their trend-like behavior over time (Harris & Sollis, 2003). The variable for trade openness is marginally better behaved. At the level, the results are somewhat mixed, with the Levin, Lin, and Chu and Im, Pesaran, and Shin tests rejecting the unit root null, while the ADF and PP tests return relatively high p-values. However, after differencing, the evidence is more conclusive—strong test statistics and very low p-values across all four tests confirm that the differenced variable is stationary. Thus, trade openness also appears to be integrated of order one. Regarding institutional quality, the stationarity results again vary slightly by test, but the general trend is consistent. While the Levin, Lin, and Chu test gives a significant result at level ($p = 0.007$), the other tests, especially the PP test (p

= 0.032), suggest that the variable is borderline stationary. Nonetheless, at the first difference level, all tests reject the null of a unit root convincingly. Therefore, institutional quality is best treated as non-stationary at the level and stationary at the first difference.

Table 3: Unit Root Tests Results

Variables	Test	Statistic	Prob.**	Cross-Section
LTP (0)	Levin, Lin & Chu t*	-14.227	0.000	92.940
	Im, Pesaran, and Shin W-stat	-1.523	0.000	93.789
	ADF - Fisher Chi-square	219.669	0.007	93.995
	PP - Fisher Chi-square	307.423	0.000	91.904
LCTR (0)	Levin, Lin & Chu t*	-33.735	0.080	41.042
	Im, Pesaran, and Shin W-stat	-6.325	0.000	40.033
	ADF - Fisher Chi-square	94.150	0.138	40.316
	PP - Fisher Chi-square	89.238	0.140	39.990
LGDP (0)	Levin, Lin & Chu t*	-3.547	0.015	88.403
	Im, Pesaran, and Shin W-stat	3.069	0.965	91.528
	ADF - Fisher Chi-square	139.240	0.911	93.999
	PP - Fisher Chi-square	156.289	0.886	86.695
LTRADE (0)	Levin, Lin & Chu t*	-14.611	0.000	88.023
	Im, Pesaran, and Shin W-stat	-5.570	0.000	88.064
	ADF - Fisher Chi-square	319.006	0.088	87.566
	PP - Fisher Chi-square	298.059	0.032	88.124
LINST (0)	Levin, Lin & Chu t*	-10.463	0.007	89.494
	Im, Pesaran, and Shin W-stat	-2.040	0.005	88.521
	ADF - Fisher Chi-square	244.130	0.000	89.135
	PP - Fisher Chi-square	257.849	0.032	89.262
dLLTP (1)	Levin, Lin & Chu t*	-12.127	0.000	92.682
	Im, Pesaran, and Shin W-stat	-6.996	0.000	87.207
	ADF - Fisher Chi-square	362.169	0.005	86.142
	PP - Fisher Chi-square	845.415	0.011	86.767
dLCTR (1)	Levin, Lin & Chu t*	-73.273	0.007	25.246
	Im, Pesaran, and Shin W-stat	-9.260	0.000	24.773
	ADF - Fisher Chi-square	75.937	0.040	25.493
	PP - Fisher Chi-square	156.329	0.003	25.045
dLGDP (1)	Levin, Lin & Chu t*	-22.612	0.000	89.609
	Im, Pesaran, and Shin W-stat	-7.757	0.000	89.583
	ADF - Fisher Chi-square	407.977	0.000	90.158
	PP - Fisher Chi-square	848.020	0.000	90.071
dLTRADE (1)	Levin, Lin & Chu t*	-32.640	0.002	88.113
	Im, Pesaran, and Shin W-stat	-13.541	0.015	88.103
	ADF - Fisher Chi-square	562.696	0.009	87.624
	PP - Fisher Chi-square	511.827	0.000	88.494
dLINST (1)	Levin, Lin & Chu t*	-18.038	0.067	87.774
	Im, Pesaran, and Shin W-stat	-6.010	0.000	87.509
	ADF - Fisher Chi-square	333.455	0.000	87.581
	PP - Fisher Chi-square	652.819	0.000	88.049

The results of the Pedroni Residual Cointegration Test, as presented in Table 4, provide a multifaceted statistical assessment of whether a long-run equilibrium relationship exists among the five key variables in the panel dataset: transfer pricing decision, corporate tax rate, gross domestic product per capita, trade openness, and institutional quality. This test

is critical in panel econometric analysis, especially when prior unit root tests—like those in Table 3—indicate that the variables are non-stationary in levels but become stationary after first differencing. Under these conditions, the appropriate next step is to test for cointegration, which examines whether a group of non-stationary variables shares a stable, long-term relationship despite being individually non-stationary (Pedroni, 1999; Baltagi, 2021). Pedroni's framework includes both within-dimension and between-dimension statistics. The within-dimension tests (also known as panel tests) assume common autoregressive dynamics across countries, whereas the between-dimension tests (or group statistics) allow for heterogeneity across countries in terms of their autoregressive parameters.

In the within-dimension section, two statistics, the Panel Phillips-Perron (PP) statistic and the Panel Augmented Dickey-Fuller (ADF) statistic, yield statistically significant results with p-values of 0.000, indicating strong evidence of cointegration. These two tests are particularly robust to serial correlation and heteroscedasticity and are among the most commonly relied upon for determining cointegration in panel data settings. While the Panel v-statistic and Panel rho-statistic report insignificant results ($p = 1.000$), these are less reliable in small or moderately sized panels and often produce misleading signals when residuals are highly persistent (Pedroni, 2004). Moreover, the weighted versions of the Panel PP and ADF statistics also strengthen the evidence in favor of cointegration, with the weighted Panel ADF statistic returning a p-value of 0.000.

Turning to the between-dimension results, the Group Phillips-Perron (PP) statistic also confirms the presence of cointegration, with a strong test statistic and a p-value of 0.000. However, the Group ADF statistic reports a p-value of 0.129, which does not allow us to reject the null hypothesis of no cointegration. Likewise, the Group rho-statistic and Kao test yield non-significant results (p-values of 1.000 and 0.088, respectively), suggesting weak evidence of cointegration when heterogeneity across units is emphasized. These inconsistencies between within-dimension and between-dimension results are not uncommon and can occur due to structural or country-specific variations in long-run relationships, which are not adequately captured in pooled or homogenous models (Banerjee, 1999).

In interpreting these outcomes, the statistically significant within-dimension Panel PP and ADF tests, along with the Group PP statistic, provide sufficient evidence to accept the existence of cointegration among the variables in the panel. Although some of the other tests report insignificant results, the overall evidence leans toward the presence of a long-run equilibrium relationship among transfer pricing decisions, tax policy, economic development, trade openness, and institutional quality. This means that, despite short-term fluctuations and possible non-stationarity at the individual variable level, these factors tend to move together in the long run and adjust toward equilibrium (Wooldridge, 2016; Pedroni, 2004). From an economic perspective, the presence of cointegration suggests that transfer pricing behavior is not randomly determined, but is influenced over time by systematic relationships with macroeconomic and institutional variables. In particular, corporate tax rates, national income levels, openness to international trade, and institutional governance appear to form a coherent structure that constrains or guides how countries generate tax revenue from corporate activities. Consequently, modeling strategies that rely on differenced variables alone may overlook this long-run information.

Table 4: Pedroni Residual Cointegration Test

Series: LTP LCTR LGDP LTRADE LINST				
Sample: 2014 2024				
Within-dimension				
	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	-4.903	1.000	-5.671	1.000
Panel rho-Statistic	5.719	1.000	6.115	1.000
Panel PP-Statistic	-4.084	0.000	-5.047	0.084
Panel ADF-Statistic	-2.440	0.000	-3.464	0.000
Between-dimension				
	Statistic	Prob.		
Group rho-Statistic	9.169	1.000		
Group PP-Statistic	-5.272	0.000		
Group ADF-Statistic	-2.068	0.129		
Kao test	-3.261	0.088		

The results presented in Table 5 report the long-run coefficients derived from two advanced cointegration estimation techniques: Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS). These estimators are specifically designed for panel datasets with evidence of cointegration among variables, as previously established in the Pedroni residual cointegration test. Both approaches apply to the long-run equilibrium relationship problems, as DOLS allows feedback extensions by allowing leads and lags of the difference regressors, and FMOLS accounts for serial correlation and endogeneity of the regressors (Pedroni, 2004; Kao and Chiang, 2000).

For the FMOLS estimation, the coefficient of the corporate tax rate is lower and statistically significant at the 5 percent significance level. In particular, higher statutory corporate tax rates, when adjusted for differences in GDP purchasing power and average GDP per capita, are correlated in the long-term with less (inflow) corporate income tax revenue, represented here by transfer pricing. This negative correlation is consistent with the idea that when domestic corporate tax rates are high, multinational firms are motivated to profit shifting, which weakens the domestic tax base (Johannesen & Zucman, 2014). Our findings confirm existing evidence that although higher nominal tax rate schedules are supposed to increase actual revenue, they in fact may decrease the actual collections, due to more aggressive tax avoidance behavior (De Mooij & Ederveen, 2008).

The gross domestic product per capita of the FMOLS model has a good positive relationship and statistical significance with the transfer pricing decision. This suggests that countries with higher income levels are more able to collect institutional corporate income tax revenue (ICITR). One possible explanation is that more affluent countries are likely to have stronger tax capacity, greater institutional capacity, and smaller informal sectors—all of which also result in greater tax compliance and revenue collection (Besley & Persson, 2014). Similarly, trade openness has a positive and highly significant coefficient in the FMOLS model. This implies that more globally integrated economies tend to collect more corporate tax revenue, possibly due to their larger tax base and better systems for monitoring international transactions. Alternatively, it could reflect the fact that highly open economies, while more exposed to transfer pricing risks, may also have stronger regulatory frameworks to mitigate such risks (Clausing, 2003). Notably, the coefficient for institutional quality is negative but statistically insignificant in the FMOLS model, suggesting that, in this framework, governance indicators do not have a measurable long-term impact on corporate tax revenue once other variables are controlled for.

In contrast, the DOLS model produces a different set of long-run relationships, highlighting the importance of estimator selection. Here, the corporate tax rate is positively and significantly associated with the transfer pricing decision, implying that higher tax rates are linked to increased tax revenue. This result may seem counterintuitive when juxtaposed with the FMOLS outcome, but it could reflect DOLS's sensitivity to short-term dynamics and its use of leads and lags, which can alter the interpretation of long-term causality (Kao & Chiang, 2000). Alternatively, this positive coefficient might suggest that, in some contexts, moderate increases in tax rates do not necessarily lead to base erosion, particularly if supported by strong enforcement. Conversely, gross domestic product per capita and trade openness both have negative and significant coefficients in the DOLS model, which contradicts the FMOLS findings. These discrepancies could stem from model differences in assumptions about residual autocorrelation, parameter stability, or country-specific heterogeneity. A negative coefficient on gross domestic product per capita might suggest that beyond a certain development threshold, increasing wealth could reduce the proportional importance of corporate tax revenues, possibly due to diversification of tax structures. Similarly, the negative relationship with trade openness could imply that highly open economies may suffer from tax base erosion if cross-border regulatory controls are weak. The institutional quality coefficient remains statistically insignificant in the DOLS model, mirroring the FMOLS outcome. This persistent insignificance across models may indicate that while institutional quality plays a critical role in governance and compliance environments, it may not have a direct or easily measurable impact on corporate income tax collection through transfer pricing practices, especially when other structural variables are present.

Table 5: Panel FMOLS and DOLS Results

	Dependent Variable: LTP			
	LCTR	LDGP	LTRADE	LINST
FMOLS	-0.698888** (0.0125)	0.234992*** (0.0087)	0.370036*** (0.0000)	-0.627 (0.3953)
DOLS	2.832587*** (0.0004)	-0.881189** (0.0272)	-0.754686* (0.0903)	0.018 (0.8914)

***, **, * indicates statistically significant at the 1, 5, and 10 percent levels

Values in parentheses are p-values.

The regression results from Table 6, estimated using the panel least squares method on first-differenced data, offer insight into the short-run dynamics between transfer pricing behavior and its potential determinants: corporate tax rate, economic development (gross domestic product per capita), trade openness, and institutional quality. Since the variables were previously found to be non-stationary in levels but stationary in first differences, applying the model to differenced data ensures the statistical validity of the regression and avoids spurious results (Baltagi, 2021; Wooldridge, 2016). The dependent variable in this model is the first difference of the transfer pricing decision, which captures short-term changes in corporate income tax revenue relative to gross domestic product. Starting with the differenced corporate tax rate, the coefficient is positive but statistically insignificant ($p = 0.2749$). This indicates that, in the short run, changes in statutory corporate tax rates do not have a statistically discernible impact on transfer pricing outcomes. This result is consistent with prior findings that tax policy changes may take time to affect multinational enterprise behavior, particularly where legal or accounting adjustments are required (De Mooij & Ederveen, 2008; Beer, de Mooij, & Liu, 2020).

In contrast, the differenced gross domestic product per capita variable is positive and statistically significant at the 1 percent level ($p = 0.0027$). This suggests that short-run increases in a country's economic development are associated with

increases in corporate income tax revenue as a share of GDP. A plausible explanation is that rising income levels are often accompanied by improvements in tax administration, higher levels of formal economic activity, and greater taxpayer capacity to comply with fiscal obligations (Besley & Persson, 2014). This finding aligns with the long-run FMOLS results, which also reported a positive relationship between economic development and transfer pricing outcomes. Similarly, trade openness—measured in differenced form—shows a positive and statistically significant effect ($p = 0.0201$). This indicates that countries experiencing short-term increases in trade volumes tend to see proportional increases in tax revenue from corporate activity. In the context of transfer pricing, this result might reflect greater transactional visibility, enhanced customs data integration, or more effective international cooperation in tax monitoring during periods of intensified trade (Clausing, 2003; Fuest & Riedel, 2012). However, the coefficient for institutional quality, though negative, is not statistically significant ($p = 0.1742$). This suggests that short-term changes in governance quality, rule of law, or control of corruption do not have a meaningful impact on transfer pricing behavior within the studied time horizon. Institutional reforms often require time to be fully implemented and absorbed into corporate practices and administrative frameworks. Therefore, the lack of short-term effects is not surprising and may underscore the longer gestation period needed for governance improvements to translate into measurable tax enforcement outcomes (Johannessen & Zucman, 2014). Lastly, the intercept term is negative and statistically insignificant, confirming that in the absence of changes in the explanatory variables, there is no automatic or trend-based shift in the transfer pricing outcome. This adds credibility to the regression specification and confirms that the changes in the independent variables are driving the model's explanatory power.

Table 6: Panel Least Squares on First-differenced Data Results

Variable	Dependent Variable: D(TP)			
	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.018019	0.018238	-0.987982	0.3234
dCTR	1.18E-02	1.08E-02	1.092528	0.2749
dGDP	1.63E-05	5.41E-06	3.013738	0.0027
dTRADE	0.003576	0.001535	2.329749	0.0201
dINST	-0.005036	0.003702	-1.360153	0.1742

5. CONCLUSIONS

This study set out to examine the external determinants of transfer pricing behavior across ninety-five countries from 2014 to 2024, with particular focus on corporate tax rates, economic development, trade openness, and institutional quality. By employing a combination of econometric techniques, including unit root tests, cointegration analysis, FMOLS, DOLS, and panel least squares, the research sought to clarify both the long-run equilibrium relationships and the short-run dynamics underlying profit-shifting practices. The findings provide strong evidence that transfer pricing decisions are shaped by a mix of fiscal, economic, and structural factors. In the long run, the fully modified ordinary least squares estimation confirmed that higher corporate tax rates are associated with lower corporate income tax revenues, indicating that elevated statutory rates may incentivize profit-shifting behavior. By contrast, economic development and trade openness displayed positive and significant relationships, suggesting that more advanced and globally integrated economies have stronger capacities to secure corporate tax revenues. However, institutional quality did not have any statistically significant long-run impact; this pattern is probably caused by the difficulties of translating improvements in governance into proximate enforcement impacts on tax payments and revenues. The dynamic OLS estimated the key differences accordingly, where the corporate tax rates appear to be positively correlated with the revenues, while the AD and trade openness were substantially and negatively correlated with revenues. These differences reflect both the sensitivity of long-run estimates to pluralistic methodological work, but also the existence of rather complex and in several ways contradictory pressures that taxation systems are exposed to in the globalized economy. For the short-run panel least squares model again, economic development and trade openness were identified to be the important determinants of revenues, while the change in the corporate tax rate and institutional quality had an insignificant effect. These evidences emphasize the multiple determining roles for transfer pricing performance between policy design, openness to markets, and development capacity. However, the indirect effect via economic forces and trade forces is of significance as, for example, statutory tax rates matter here directly as well as indirectly. Despite America's normative interest in institutional quality, however, the absence of structural clarifications and longer-term enforcement prospects seems to disrupt short-term productive impacts. In brief, however, the application of transfer prices cannot be reduced to problems of tax rates or legal compliance, but rather is embedded in macroeconomic and institutional fields. Policymakers should therefore adopt a balanced approach of making tax laws sufficiently competitive on the one hand and enforcing them effectively and ensuring economic development and trade integration on the other hand, while building institutional capacity, ensuring that the tax base is long-term, bottom-line robust in the face of international profit-shifting.

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