

## Tax Revenue Optimization from Transfer Pricing, Corruption Control and Economic Growth in Nigeria

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### Abstract

This study examined the effect of Tax Revenue Optimization from Transfer Pricing, Corruption control and Economic Growth in Nigeria from 1986 to 2022. The harmful impacts of multinational corporations' transfer pricing policies which are detrimental to income tax revenues of developing nations especially countries identified as epic centers of corruption presents a special case; hence, this scenario was examined in the case of Nigeria. The study adopts an ex-post factor research design, utilizing an autoregressive distributed lag modelling and bound testing cointegration as the estimation techniques. The results revealed that transfer pricing ( $\beta = 0.384$ ,  $p\text{-value} = 0.629$ ) showed a non-significant positive effect on GDP. However, the effect of domestic non-oil revenue ( $\beta = 1.356$ ,  $p\text{-value} = 0.029$ ) on GDP was significant, indicating that a 1% increase in domestic non-oil revenue is associated with a substantial increase in GDP. The findings further showed that the interactive effect of transfer pricing and corruption control ( $\beta = 0.524$ ,  $p\text{-value} = 0.474$ ) is not significant on economic growth in Nigeria. Therefore, the study concluded that the interactive effect of transfer pricing and corruption control is not statistically significant to influence economic growth in Nigeria. The study recommended that the policymakers should intensify efforts to combat corruption which will lead to increase in tax revenue from MNCs activities in Nigeria. Strengthening anti-corruption agencies such Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices Commission, among others can contribute to a healthier economic

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## 1. Introduction

Economic growth being a global phenomenon and a key measure of economic performance of countries is continually being redefined, hence; Olanrewaju et al (2020) in their study assessed the effect of institutional quality on inclusive growth as measured by the real gross domestic product (GDP) and found that for the periods between 1998 and 2017, institutional quality had a significant effect on economic growth in Nigeria. Bayarcelik and Tassel (2012) identified three important factors underpinning economic growth as capital accumulation, growth in population and technological progress.

The rising need for socio-economic infrastructures including roads, power, portable water, healthcare, education, and security, among other necessities, presents Nigeria with a formidable task in earning enough cash to meet its expenses. Tax income is one of the most important sources of funding for the government. It's interesting to note that taxes have long been recognized as a crucial tool used by the government to regulate the economy, interfere with the distribution of resources and income, and effectively promote economic growth in a nation (Tanchev, 2016).

Transfer pricing is one of the ways through which multinational corporations (MNCs) that dominate the economic space of frontier economies use in paying less taxes which in turn leads to revenue leakages that occur in jurisdictions of their foreign operations. This is due to a lack of capacity, institutional weaknesses such as poor judicial systems, corruption, amongst others which are prevalent in these frontier economies that undermine their revenues. Cazacu (2016) identified practical implications of transfer prices in contemporary economies explaining that these have a strong impact on both affiliated enterprises and the states where these enterprises carry out their activities. Paul (2013) is of the opinion that profit shifting among member entities of the multinational group takes place in order to take advantage of worldwide corporate tax rate differentials. As confirmed by Cebreiro (2007) that Transfer Pricing is a subject of international taxation, it specifically constitutes an aspect of the tax policy assessment framework across national borders.

Corruption tends to distort the allocation of resources and slow down economic growth (Cieřlik & Goczek, 2018). Recent emphasis has focused on corruption, which was described over two millennia ago as using public office for private gain (Samimi & Abedini, 2012). Today, corruption inhibits policymaking in many institutions. Corruption impacts the economy in various ways. Several empirical studies relate corruption and transfer pricing indirectly (Blackburn, Neanidis, and Haque 2009). These and other investigations show corruption's many paths. From the non-exhaustive list of these effects, it was deduced that corruption would lead to a misallocation of skills away from productive activities (Misch & Saborowski, 2018), corruption would undermine the protection of the property rights, create obstacles to doing business and impede innovation and technological transfer (Bardhan, 2017); corruption may lead to firms to expand less rapidly, to adopt inefficient technologies and to shift their operations to the informal sector (Paunov, 2016); corruption may limit the extent of a co inflows of foreign investment (Al-Sadig, 2009); corruption may lead to costly concealment and detection of illegal income, resulting in a deadweight loss of

resources (Al-Sadig, 2009); corruption may compromise human development through a deterioration in the scale of public health and education programs (Samimi & Abedini, 2012); and corruption may lead to a general misallocation of public expenditures as certain areas of spending are targeted more for their capacity to generate bribes than their potential to improve living standards (Ivanyna, Mourmouras & Rangazas, 2021)

One of the challenges impeding optimal tax revenue in Nigeria is the pervasive issue of transfer pricing. Multinational corporations engaged in cross-border trade often manipulate intra-group transactions to shift profits and minimize tax liabilities, posing a significant threat to the country's revenue base (Mashiri, 2018). This practice not only erodes the tax base but also introduces complexities in determining fair and accurate taxable incomes for these entities. Corruption within the tax administration system is another critical factor hindering the optimization of tax revenue in Nigeria (Owenubiugie & Owenubiugie, 2020). Instances of bribery, embezzlement, and other corrupt practices within tax offices undermine the efficiency, transparency, and fairness of the tax collection process (Alm, Martinez-Vazquez, & McClelland, 2016). The corrosive impact of corruption not only reduces the amount of revenue collected but also erodes public trust in the tax system.

Developing nations like Nigeria strengthen their policy measures to safeguard tax bases and reduce losses and leakages of tax revenue. This was reaffirmed by Beebeejaun (2019), who emphasizes the need for developing nations to have a measure or method of balancing their desire for foreign direct investment and international trade with regulations that effectively control these activities to address transfer pricing abuses and distortions. Oguttu (2017) noted that an understanding of the avenues and means used to manipulate transfer pricing is an important step in trying to address the challenges of base erosion and profit shifting (BEPS). Ahmed (2014) acknowledges the need to closely pay attention to issues of transfer pricing by highlighting the fact that plugging holes caused by transfer pricing poses theoretical as well as practical problems. The extant literature provides evidence of transfer pricing manipulation by MNCs (Beebeejaun, 2019; Asongu, & Nwachukwu, 2016; Cooper & Nguyen, 2020; Reidel, 2018), but there is yet to be a consensus among scholars on its effect on economic growth especially in developing countries facing challenges of poor institutional quality such as corruption; hence, this study.. Agana et al (2018) emphasizes the significance of comprehending transfer pricing issues and asserts that transfer pricing is a financing for development issue because in the absence of sufficient revenues and failure to collect deserved tax revenue, a country's propensity to generate domestic funds for development is hampered, which consequently slows down economic performance. Revenue losses from transfer pricing abuses have become a global affair (Cooper & Nguyen, 2020).

Nigeria, a country that is home to some of the world's MNCs, has continued to lose a sizable amount of money due to profit shifting strategies. Nigeria is losing billions of dollars of tax revenue through transfer pricing practices by MNEs. This is mainly attributed to dysfunctional regulation, weak enforcement and corruption. This inadequate public revenue due to corruption eroding the poor tax revenue generation has led to unsustainable public debt which has been incurred in order

to meet both infrastructural needs of the country and welfare of citizens. The argument of Babatunde (2021) is that if prompt action is not taken to address revenue losses from tax shifting activities of MNCs, Nigeria's debt profile currently estimated at N36.3 trillion could rise further. This without doubt will be unsustainable. Evidence abound about profit shifting activities of MNCs in Nigeria. According to Nami (2021), whose opinion aligned with Babatunde (2021)'s position, Nigeria is reported to have lost about US\$178 billion through illicit financial funds flow from MNCs operating between 2007 and 2017. For instance, the study by Ogidiaka, Agbi & Mustapha (2022) showed that MTN (a multinational corporation in the telecommunication sector in Nigeria) acknowledged making N37.6 billion in unlawful payments to MTN Dubai between 2010 and 2013. The government has no choice but to seek loans from bilateral and multilateral creditors as well as domestic lenders as a result of inadequate revenue, yet, these transfers were made out of Nigeria through clever tax planning techniques. Ibitoye (2020) noted that Nigeria lacks information from the parent businesses of the MNCs to effectively fight transfer pricing and other types of tax leakages; the issue of transfer pricing malpractices is particularly rampant in Nigeria since a sizable portion of the country's oil output is under the control of MNCs, making it more susceptible to tax evasion techniques involving transfer pricing, such as under-invoicing exports or over-invoicing imports. The main objective of the study is to investigate the effect of tax revenue optimization from transfer pricing proxies and gross domestic product in Nigeria.

## **2 literature review**

### **2.1 Economic Growth**

Economic growth refers to the steady process of increased productive capacity of an economy over a time in order to facilitate rising levels of national output and income (Anyanwu et al., 2015). According to Thaddeus et al. (2021), economic growth and its subsequent development remains a fundamental issue to human society and existence and that it has continued to be at the top echelon of public debate in this era of globalization. In the suggestion of Omar and Nor (2020), economic growth is crucial for the wellbeing of citizenry of nation states, as huge spillover effects can be attained from positive economic growth, in terms of increased consumption that would make private investment to thrive and increase in employment or reduction in unemployment rate of the citizen. According to Boldeanu and Constantinescu (2015), economic growth is the major indicator of the wellbeing and the prosperity of majority of the citizens living in a country over a particular period of time. On their part, Amake and Ehima (2020), the unsustainable growth in the GDP has continued to be a source of worry to government, policy makers, regulators and the populace.

### **2.2 Transfer Pricing**

The definition of transfer pricing and its motives is not yet a settled issue in the literature. Favourate, Eukeria and Samantha (2021) defines transfer pricing as the pricing of goods and services that are exchanged (between autonomous profit-center divisions) within a firm. Transaction transfer pricing is the price charged by one member of a corporate organizations to another member of the same organization for the provision of goods or services or the use of a property which includes intangible property (Osho & Ilori, 2020). Hence, it could be said to be the price applied to intra-company transactions. Supriyati et al. (2021) suggested that transfer pricing is a strategy used by the company to win the competition in a global market over limited resources. This strategy involves shifting income from one company in a country with relatively higher tax rate to another unit of the same company in another country with a lower tax rate. The

main purpose of transfer pricing is to minimize tax payments. Transfer pricing is the determination of the exchange price for a product or service of a different business unit in the company exchanging it (Augusto & Rathke, 2015).

### **2.3 Corruption Control**

Hadeel et al. (2022) see corruption as an extra-legal institutional method used by individuals or groups to gain influence over the actions of the bureaucracy. Accordingly, corruption can be seen as a matter of individual or organization's choice. Corruption takes place in a public sector when a public official breaks the rules to advance his personal interest over the public one (Fabella et al., 2022). That means as mentioned above, the aim is to achieve a private gain. This term must be interpreted widely, however, the issue is the notion of private gain and the consequential abuse of trust that is inherent in a public position.

Olukowade and Ogodor (2015) opined that corruption is an anti-social behavior conferring improper benefit contrary to legal and moral norms and undermines a public authority's capacity to secure the welfare of all citizens. Emechele (2009) asserted that corruption is a problem that confronts all nations of the world, explaining that the only difference is that its frequency, severity and tenacity vary from one country to another. Dong (2014) noted that the threat of corruption is beginning to receive increased local, national and international attention, in part, due to an increasing consciousness of the damaging effect of corruption worldwide and changes in political and economic reform. Nevertheless, Dong (2014) argue that corruption does not vanish as countries develop and modernize, but rather corruption takes a new form.

### **2.4 Theoretical Review**

Wagner Adolph created the expediency theory in 1956. Bhartia (2009) felt that every tax should explain its necessity and that the government should establish a tax strategy based on that. The notion of expediency supports the canon of taxes, which states that every tax must be effective, economical, and efficient in collection. The expediency theory states that taxation provides a powerful set of policies and collection tools to the authorities and should be used to improve the economic and social needs of citizens, solve social ills, provide security, social amenities, and fight income inequality, regional disparity, and unemployment and make a good living standard.

Kiabel (2009) supported expediency theory by arguing that the government's economic and social choice is to construct an effective revenue generating system that promotes economic growth and development. Kiabel (2009) said that a successful tax system is straightforward to collect and maximises taxpayer and societal gain. Since political, economic, social, and political groups continually exert pressure and try to safeguard and advance their welfare, interests, and level of life. According to Ibadin and Oladipupo (2015), any tax plan must be realistic, and that should be the sole factor government authorities should consider when establishing a tax strategy. The economy, efficacy, and efficiency of tax collecting are explained by this hypothesis.

Critics like Otu and Adejumo (2013) asserted that every tax plan meets the practicality test and is the sole factor for government tax policy. This canonical taxation theory addresses tax collecting devices' economy, efficacy, and efficiency. Authorities could utilise taxation to address economic and social issues including income inequality, regional imbalances, and unemployment (Afuberon & Okoye 2014). Economic and social goals of the state include implementing an efficient tax system that supports economic development (Kiabel, 2009). According to Kiabel (2009), a tax system that cannot be levied and collected properly is pointless.

## 2.5 Empirical Review

Despite limited research on tax revenue optimization from transfer pricing policies, corruption control, and economic growth in Nigeria and around the world, ongoing studies have yielded mixed results. For example, a secondary data from 57 developing nations from 2002 to 2018 was used by Nugroho et al. (2022). This group comes from Africa, Asia, and Latin America and the Caribbean. Data analysis employed one-step and two-step sys-GMM models. Food production, grain import reliance, economic globalisation, and human capital indices affected undernutrition differently in each area. Excellent news: Corruption control may help poor nations reduce undernutrition.

The shadow economy-corruption nexus was introduced by Muhammad and Muhammad (2022) using dynamic judicial indicators to monitor corruption control as a latent variable. The link was experimentally examined using imbalanced panel data from 65 developing nations from 2000–2019. Multiple Indicators and Causes Confirmed Factor Analysis Corruption control, shadow economy, and their nexus measurements were made using models. Strong judicial indicators and an independent judicial system seem to minimise corruption and the shadow economy.

The dynamic least squares (DOLS) estimation method was used to examine the impact of financial corruption on economic growth in Jordan using time series data from 1990 to 2020. The Corruption Perception Index (CPI) and Corruption Rank (CR) were used to measure financial corruption in Jordan. The results showed that the CPI positively affects economic growth, the Human Development Index, trade openness, population growth, and foreign direct investment, while CR negatively affects these factors and positively affects their effects.

In 2021, Omar et al. used advanced statistical estimation to study how corruption and macro-level governance affect economic growth. They used the system generalised method of moments (GMM) to control for endogeneity and unobserved heterogeneity. Governance index positively impacted economic growth empirically. Corruption hurt economic development negatively. Population and foreign direct investment boost economic development, whereas trade openness and education level slow it. More empirical studies on corruption include Ajayi (2021), Akinlo and Okunlola (2021), Salisu and Isa (2020), Muhammed and Zul (2019), and Satrovic et al. (2018). These research have increased the influence of corruption on economic development, making it an unresolved problem.

Nigeria's Multinational Corporations' Transfer Pricing Policies and Economic Growth literature illuminates corruption control, governance, and economic growth. Some gaps need extra study to fully comprehend the topic. First, none of the evaluated research explicitly tackles how multinational corporations' transfer pricing policies affect Nigeria's macroeconomic growth. Transfer pricing practises used by multinational firms need to be studied in the short and long term. Current study looks at corruption control and economic results. This might entail evaluating tax revenue consequences and technology transfer to provide light on transfer pricing in Nigeria.

Many studies discuss corruption control as a factor in economic development, but few address Nigeria's transfer pricing governance issues. In the larger context, governance measures like judicial independence and institutional quality are important, but how they impact multinational businesses' transfer pricing monitoring and regulation is unclear. To help policymakers and regulators improve transfer pricing governance, future research should examine how governance arrangements affect supervision.

### 3. METHODOLOGY

The study adopts an ex-post factor research design, utilizing an autoregressive distributed lag modelling and bound testing cointegration as the estimation techniques. The inferences were made at 5% significant level. Data for this study were gathered from the Central Bank of Nigeria (CBN) annual report and World Development Indicators (WDI, 2021) covering the period of 1981 through 2021. Both descriptive and inferential analysis were employed in the study; while multiple regression analysis was employed in examining the effects. This study used a time series data analytical technique. The study employed Pre-estimation tests like descriptive statistics which included the mean, median, maximum, minimum, standard deviation, Kurtosis and Skewness. Jarque-bera testing the characteristics or nature of the data to ensure normal distributed.

#### 3.1 Model Specification

The model to examine the effect of tax revenue from transfer pricing, corruption and economic growth in Nigeria was adopted from the study of Obasi (2015) and Ibitoye (2022). The empirical model is specified mathematically as follows:

$$GDP_t = (TPP, COC, TL_t, TO_t, TPP * COC_t, DNOR_t,)$$

Econometrically, the model was specified as:

$$GDP_t = \beta_0 + \beta_1 TPP_t + \beta_2 COC_t + \beta_3 TPP * COC_t + \beta_4 TL_t + \beta_5 TO_t + \beta_6 DNOR_t + \mu_t$$

In order to rescale some variables to the same frequency like the other variables, the model is specified as semi-log model which helps to solve the issue of heteroscedasticity in the model. The model is stated in semi-log linear form as:

$$\ln GDP_t = \beta_0 + \beta_1 TPP_t + \beta_2 COC_t + \beta_3 TPP * COC_t + \beta_4 \ln TL_t + \beta_5 \ln TO_t + \beta_6 \ln DNOR_t + \mu_t$$

Where:

GDP is GDP per person employed

TPP is the transfer pricing policy

TPPCOC is the interactive between Transfer pricing policy and corruption control

COC= Corruption Control

TL is Tax liabilities, and

TO is the Trade openness

DNOR is Domestic Non-Oil revenue

$\ln$  = Natural logarithm

$\beta_0$  = Intercept, the mean value of the response variable when all independents variables are equal to zero

$\beta_{1,2,3,4}$  = Parameters of the independent variables to be estimated.

$\mu$  = Stochastic or error term

t is the time-variant x

## 4 Data Analysis, Results and Discussion Of Findings

### 4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics –Variables Logged

	LCURRENT ACCOUNT	LGDP	LTAX LIABILITY	LTRADE OPENESS	LTRANSFER PRICING	CORRUPTION CONTROL
Mean	16.06	30.04	5.90	2.97	2.25	-0.82
Median	21.22	30.38	6.30	3.04	2.27	-1.08
Maximum	24.32	32.80	8.49	3.58	2.36	0.00
Minimum	0.00	26.01	1.50	1.66	2.06	-1.43
Std. Dev.	10.19	2.13	2.16	0.39	0.08	0.53
Skewness	-0.94	-0.45	-0.56	-1.18	-0.66	0.87
Kurtosis	1.95	1.92	2.04	4.77	2.49	1.94
Jarque-Bera	6.90	2.95	3.27	13.06	2.97	6.21
Probability	0.03	0.23	0.20	0.00	0.23	0.04

Table  
4.1  
provides  
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descriptive statistics for the variables under scrutiny, shedding light on the fundamental characteristics and trends within the dataset. Descriptive statistics serve as the bedrock of our analytical journey, offering a snapshot of central tendencies, dispersions, and distributions across key economic indicators. The descriptive analysis covers the mean, median, standard deviation, skewness and kurtosis. The average value of the current account variable is 16.06, with a slightly negatively skewed distribution and positive kurtosis, suggesting a distribution with a longer left tail and heavier tails than a normal distribution. The Jarque-Bera test for normality, with a probability of 0.03, indicates that the data may deviate from a perfectly normal distribution.

The logarithm of tax liability (LTAX LIABILITY) with an average of 5.90 exhibits a slightly negatively skewed distribution. Positive kurtosis implies a distribution with heavier tails. The Jarque-Bera test (3.27, Probability 0.20) suggests that the data may be approximately normally distributed. The logarithm of trade openness (LTRADE OPENESS) has an average of 2.97 and is negatively skewed, indicating a longer left tail. The high positive kurtosis implies a distribution with heavy tails and a very high peak. The Jarque-Bera test (13.06, Probability 0.00) emphasizes that the data are not normally distributed. The logarithm of transfer pricing (LTRANSFER PRICING) has an average of -0.82 with slightly negative skewness. Positive kurtosis indicates a distribution with heavier tails. The Jarque-Bera test (2.97, Probability 0.23) suggests that the data may be approximately normally distributed. The corruption control variable, with an average of -0.82, is positively skewed, indicating a longer right tail. Positive kurtosis implies a distribution with heavier tails. The Jarque-Bera test (6.21, Probability 0.04) indicates that the data may not be perfectly normally distribute.

### 4.2 Pearson Correlation

Table 4.3: Correlation Matrix

Correlation	TRANSFER PRICING	TRADE OPENESS	TAXLIABILITY	GDP	CORRUPTION CONTROL
TRANSFERPRICING	1.000000				
TRADEOPENESS	-0.107013	1.000000			
TAXLIABILITY	0.356549	-0.549209	1.000000		
GDP	0.347016	-0.565899	0.989487	1.000000	
CORRUPTIONCONTROL	0.473451	-0.426534	0.381785	0.386216	1.000000



The correlation matrix in Table 4.2 provides a valuable snapshot of the relationships between various economic indicators, shedding light on the degree and direction of their associations. The correlation matrix for the provided variables: TRANSFER PRICING, TRADE OPENNESS, TAX LIABILITY, and CORRUPTION CONTROL. The correlation matrix provides valuable insights into the relationships among the key variables in our study. Beginning with Trade Openness exhibits a weak negative correlation with Transfer Pricing (-0.107). This implies a slight tendency for lower levels of Trade Openness when Transfer Pricing is higher, though the strength of this relationship is not particularly robust. Tax Liability, on the other hand, demonstrates a noteworthy negative correlation with Trade Openness (-0.549), indicating that higher Tax Liability is associated with lower levels of Trade Openness. Further, examining Corruption Control reveals positive correlations, suggesting that as Corruption Control improves, there is a tendency for higher values in both PCI and GDP Employed.

### 4.1.3 Result of the Stationarity Test

**Table 4.4: Unit root test**

Variable	Level	1 <sup>st</sup> difference	Conclusion
<b>lgdp</b>	<b>-0.173</b>	<b>-3.351*</b>	<b>I(1)</b>
<b>IDomNonOilrev</b>	<b>-1.493</b>	<b>-4.957***</b>	<b>I(1)</b>
ltradeOpeness	--4.609**	-8.226 ***	I(0)
IFDI	-2.681	-5.694***	I(1)
lCurrentAccount	-0.970	-4.570**	I(1)
Corruptioncontrol	-1.973	-2.636*	I(1)
Taxliability	-0.337	-4.886***	I(1)
Transferpricing	-3.909***	-10.64***	I(0)

Statistical significance at the 1%, 5%, and 10% levels is denoted by \*\*\*, \*\*, and \*, respectively.

The Augmented Dickey-Fuller (ADF) test is an important test in time series analysis, aiding in the determination of stationarity for various variables. Stationarity is a fundamental concept, suggesting that a time series maintains consistent statistical properties over time. The ADF test results for different variables, considering significance levels denoted by three asterisks (\*\*\*), two asterisks (\*\*), and one asterisk (\*), representing 1%, 5%, and 10% significance, respectively. The result from the Augmented Dickey Fuller stationarity test is presented in Table 4.3.

The ADF test for lgdp (-0.173) is not significant, the 1st difference statistic (-3.351\*) is significant at the 10% level. Therefore, differencing at the 10% significance level renders the series stationary (I(1)). The ADF test indicates that differencing is required for IGDPPEmployed, as both the level (-2.541) and 1st difference (-6.101\*\*\*) statistics are statistically significant at the 1% level, suggesting stationarity after differencing (I(1)). For IDomNonOilrev, both the level (-1.493) and 1st difference (-4.957\*\*\*) statistics are significant at the 1% level, necessitating differencing for stationarity (I(1)).

In the case of ltradeOpeness, both the level (-4.609\*\*) and 1st difference (-8.226\*\*\*) statistics are statistically significant at the 1% level. This implies that both the original series and its first difference are stationary (I(0)). The ADF test suggests that differencing is necessary for IFDI, with both the level (-2.681) and 1st difference (-5.694\*\*\*) statistics being statistically significant at the 1% level (I(1)). For lCurrentAccount, the level statistic (-0.970) is not significant, but the 1st difference statistic (-4.570\*\*) is significant at the 5% level, indicating that differencing is required for stationarity (I(1)). Differencing is needed for corruptioncontrol, as the level (-1.973) and 1st difference (-2.636\*) statistics are statistically significant after first differencing at the 10% levels, respectively (I(1)). The ADF test for taxliability

suggests differencing, with the level (-0.337) and 1st difference (-4.886\*\*\*) statistics being statistically significant at the 1% level (I(1)). Both the level (-3.909\*\*\*) and 1st difference (-10.64\*\*\*) statistics for transferpricing are statistically significant at the 1% level, indicating stationarity without differencing (I(0)). Given the outcomes of the unit root test, it was discovered that a mixed order of integration is present within the variables under consideration. Specifically, transfer pricing exhibit stationarity at the level and, therefore, obviate the necessity for differencing. Conversely, other variables within the dataset manifest stationarity at the first difference. This incongruity in the order of integration prompts the imperative for cointegration analysis through the application of bounds cointegration tests. The purpose of such an analysis is to ascertain whether a linear combination of the variables can be established, thereby rendering them collectively stationary. Consequently, the bounds cointegration test becomes a pivotal next step in discerning the long-term relationships and interactions among the variables, fostering a comprehensive understanding of their interconnected dynamics.

## 4.2 Test of Hypothesis

Table 4.4: Shortun and Longrun Estimates – lGDP as dependent variable

D.lgdp	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lgdp L1.	-0.109	0.076	-1.430	0.170	-0.269	0.051
<b>PANEL A: LONG RUN ESTIMATES</b>						
transferpricing	0.384	0.783	0.490	0.629	-1.255	2.023
corruptioncontrol	-2.915	6.111	-0.480	0.639	-15.706	9.875
tppCOC	0.524	0.718	0.730	0.474	-0.978	2.026
taxliability	0.000	0.000	-0.980	0.342	-0.001	0.001
tradeOpeness	-0.003	0.033	-0.100	0.925	-0.073	0.066
IDomNonOilrev	1.356**	0.573	2.370	0.029	0.157	2.555
<b>PANEL B: SHORT RUN ESTIMATES</b>						
transferpricing						
D1.	-0.144*	0.074	-1.960	0.065	-0.299	0.010
LD.	-0.171***	0.056	-3.050	0.007	-0.289	-0.054
corruptioncontrol						
D1.	1.151*	0.561	2.050	0.054	-0.024	2.326
LD.	1.384**	0.497	2.790	0.012	0.345	2.423
tppCOC						
D1.	-0.129**	0.060	-2.150	0.044	-0.255	-0.004
LD.	-0.137**	0.054	-2.540	0.020	-0.250	-0.024
tradeOpeness						
D1.	0.005*	0.003	1.940	0.068	0.000	0.010
_cons	2.461	1.809	1.360	0.190	-1.326	6.248
<b>PANEL C:</b>						
r-squared	0.804					

Adj r squared	0.659
Fstatistics	10.57***
PSS_Bounds	9.106***
Dwatson	2.189
Bgodfrey	0.453
White	34.00

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Statistical significance at the 1%, 5%, and 10% levels is denoted by \*\*\*, \*\*, and \*, respectively.

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Table 4.4 presents results on the effect of transfer pricing policies and corruption on GDP (lgdp), unraveling both long-run and short-run implications. Panel A explores long-run relationships, Panel B scrutinizes short-term dynamics, and Panel C delves into model diagnostics. The longrun and short run results are discuss as follows.

#### Long-Run Relationships (Panel A):

In the long run, lgdp shows a mild negative association with its lagged value (L1), indicated by a coefficient of -0.109 (p-value = 0.170). This suggests that a 1% increase in the lagged GDP is linked to a 0.109% decrease in the current GDP, holding other variables constant.

Examining key determinants, Transfer pricing has a coefficient of 0.384 with a standard error of 0.783. The t-value is 0.490, and the p-value is 0.629, indicating that this variable is not statistically significant in explaining the variation in lgdp. Corruption control has a coefficient of -2.915 with a the associated t-value is -0.480, and the p-value is 0.639, suggesting that corruption control does not have a significant impact on lgdp. tppCOC has a coefficient of 0.524 with a t-value of 0.730, and the p-value of 0.474, implying that tppCOC is not statistically significant in predicting lgdp. Tax liability coefficient is 0.000 with the t-value of -0.980, and the p-value is 0.342, indicating that tax liability is not a significant predictor of lgdp. Trade Openess has a coefficient of -0.003 with the t-value of -0.100, and the p-value is 0.925, suggesting that trade openness does not have a significant impact on lgdp. Finally, lDomNonOilrev has a coefficient of 1.356 with the t-value is 2.370, and the p-value is 0.029, which is less than 0.05. This suggests that lDomNonOilrev is statistically significant, and the positive coefficient indicates a positive relationship with lgdp.

#### Short-Run Dynamics (Panel B):

Short-term dynamics showcase nuanced interactions. Transfer pricing exhibits a negative impact in the short run, with both first difference (D1) and lagged difference (LD.) coefficients showing significance. A 1% increase in transfer pricing (D1) corresponds to a 0.144% decrease in GDP (p-value = 0.065). Similarly, a 1% increase in the lagged difference in transfer pricing (LD.) corresponds to a 0.171% decrease in GDP (p-value = 0.007).

Corruption control and tppCOC also exhibit nuanced short-term relationships. Tax liability and trade openness, while appearing influential in the long run, show no significant short-term impact on GDP.

#### Diagnostics and Model Fitness (Panel C):

The model exhibits an impressive R-squared of 0.804, indicating that approximately 80.4% of the variability in GDP is explained by the included variables. The adjusted R-squared at 0.659 underscores the model's robustness even after adjusting for the number of predictors.

Diagnostics reported in Panel B reveal a Phillips–Perron bounds test statistic of 9.106, suggesting potential cointegration among variables at 1% significance level. The Durbin-Watson statistic of 2.189 indicates minimal autocorrelation in the residuals. The Breusch-Godfrey Serial Correlation Test yields a statistic of 0.453, indicating no significant serial correlation in the model. The White Test for Heteroscedasticity attains a statistic of 34.00, signifying stability in the variance of residuals.

### 4.3 Discussion of Findings

The findings on the study examining the effect of transfer pricing policies and corruption on economic growth revealed that transfer pricing showed a non-significant positive association with GDP. However, the effect of domestic non-oil revenue demonstrated a significant positive association, indicating that a 1% increase in domestic non-oil revenue is associated with a substantial increase in GDP. When comparing these results with the findings from Abdullahi (2022), who explored the correlation between government revenue and the economic growth of the Nigerian economy, a common thread emerges. Abdullahi's (2022) study, employing a mix of descriptive and historical approaches with time series data from 2000 to 2019, identified a significant positive relationship between the government revenue and the economic growth. In contrast, the current study's focus on transfer pricing and corruption control adds a layer to the discussion. The non-significant positive association of transfer pricing with economic growth indicate that transfer has a limited impact on GDP. However, the significant positive association of domestic non-oil revenue suggests a more potent influence on economic growth. In the broader context of other studies, Ihegboro et al. (2022) found bidirectional causal relationships between various components of GDP and the non-oil sector, attributing economic challenges to factors such as declining oil prices, militant activities, government spending, and the global health pandemic. This aligns with the notion of economic diversification recommended in Abdullahi's (2022) study. Salik and Aras (2022), exploring the effects of trade openness, FDI, and exchange rates on non-oil GDP, found non-linear relationships and cited policy inconsistency and fluctuations in FDI and exchange rates as factors contributing to the insignificant impact on non-oil GDP. Wadike et al. (2022), focusing on the relationship between non-oil tax revenue and Nigerian economic growth, identified a positive and significant connection between companies' income tax and GDP. Adegbite and Olaoye's (2021) assessment of non-oil taxation on foreign direct investment and economic services revealed value-added tax's positive significant effect on economic services but a negative influence on foreign direct investment. This indicates the intricate nature of the relationships within the economic landscape.

### 5 Conclusion

In conclusion, this comprehensive study on the effect of transfer pricing policies and corruption on economic growth in Nigeria has yielded valuable insights into the dynamics of these economic relationships. Using autoregressive distributed lag modelling, the results in the long run reveals that  $lgdp$  demonstrates a mild negative association with its lagged value, suggesting that a 1% increase in the lagged GDP is linked to a 0.109% decrease in the current GDP. However, transfer pricing shows a non-significant positive association, indicating a limited impact on GDP. Short-term interactions reveal a negative impact of transfer pricing on GDP, highlighting potential immediate-term consequences. These findings contribute valuable insights into the complex relationships shaping economic growth, offering a comprehensive understanding of both enduring trends and short-term fluctuations.

### 6 Recommendations

In line with the empirical results of the study, given the insignificant effect of transfer pricing and corruption control on economic growth in Nigeria, policymakers should intensify efforts to combat corruption and promote transparency. Strengthening anti-corruption agencies such as EFCC, ICPC, among others can contribute to a healthier economic environment in Nigeria. Despite the non-significant multinational corporations. Policymakers should strengthen regulatory frameworks and enforcement mechanisms to ensure fair taxation and prevent potential negative short-term impacts on GDP.

## **COMPETING INTERESTS**

The authors have no competing interest to declare.

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