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Transfer Pricing and Financial Performance of Listed Multinational Manufacturing Companies in Nigeria

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Abstract

The question of the efficiency of transfer pricing in contributing to the economic success of the multinational firms in Nigeria motivated this study. The primary purpose of this study was to investigate the influence of transfer pricing on the financial performance of listed multinational manufacturing companies in Nigeria. The study utilised 12 international manufacturing companies listed on the Nigerian Exchange Group between 2013 and 2022, using an ex post facto research design and census sampling method. The panel data regression random effect analysis was adopted. Findings revealed that board size had a significant negative impact on return on assets; board independence showed an insignificant positive relationship with ROA; related party transactions disclosed a significant positive association with ROA. Nonetheless, board size showed an insignificant negative impact on Tobin's Q; board independence still presented a significant positive relationship with Tobin's Q; related party transactions indicated an immaterial negative association with firm value. However, the study concluded that the overall results showed that transfer pricing mechanisms significantly influence the financial performance of the listed companies. The study, therefore, recommended that managements of multinational firms strictly utilise transfer pricing to fulfil the financial requirements of their entities to enhance corporate economic growth.

Keywords: *Financial performance, Listed multinational manufacturing companies, Nigeria, Transfer pricing.*

JEL Classification: *F23, L25, L53*

1. Introduction

Inter-company transactions have contributed to globalisation and economic growth. Emerging economies are witnessing rapid growth in related party transactions because their economies are already opening up and attracting substantial amounts of foreign direct investments (Kusuma & Wijaya, 2017). International groups involved in international

business transactions turn out to be more sophisticated both in the form of goods and capital trades through transfer pricing policies to improve financial performance (Agusto, Puspa, & Rifa, 2018). Global economic integration has caused enterprise complexity, which has weakened financial authorities' capability to monitor trade and cash flows for companies involved in cross-border activity. Economic globalisation has also reduced the ability of financial regulators to validate the correctness of transfer prices used by multinational companies (Hamid & Arshad, 2016).

To discourage how international companies use transfer pricing through related party transactions to manipulate their incomes to maximise profits, financial regulators enforce requirements for computing certain documents on related party transactions relating to the ascertainment of transfer prices by multinational companies (Talab, Flayyih, & Yassir, 2017). The situation in Nigeria is more complex because multinational manufacturing enterprises overestimate the cost of goods sent from overseas into the country. They use arbitrary prices to transfer goods and services to Nigeria through increased costs to manipulate profits (Aruomoaghe & Kingsley, 2010). Thus, monetary authorities aggressively penalise the concerned companies with a massive amount of fines which could affect the profitability (performance) of the companies and their overall corporate image in the industry and economy (Osho, Efuntade, & Jemiseye-Dav, 2020).

Furthermore, given that the financial statements of multinationals reflect the financial performances of companies, managers manipulate profits through aggressive accounting practices (transfer pricing) to indicate that they are good managers (Ashrafi, Abbasi, & Mahjoobeh, 2020). This system is more apparent with managers' strong drives to maximise managerial rewards. Since shareholders rely on corporate profitability to measure management performance, managers tend to maximise profits through aggressive transfer pricing practices to obtain more rewards and not lose their jobs (Ajina & Habib 2017).

Governance structures are also put in place to balance executives' self-interest with the public interest. External and internal governance structures are two effective techniques providers of wealth rely on to guarantee sufficient capital gains (Yulia, Hayati, & Daud, 2019). Outside governance structures, such as acquisition exchanges or legal frameworks have a supervisory function in policing executives' conduct to moderate agency issues and boost performance (Kumari & Pattanayak, 2017). Equally, owners have access to internal corporate governance (CG)

structures, which are crucial tools for addressing agency issues brought on by the division of rights and powers. This is based on a concept known as "goal congruence", which assumes that managers can be controlled and monitored by strong governance structures. The possibility of the board making choices that serve self-interest is theoretically minimised by an excellent governance structure (Nekhili & Cherif, 2011; Boachie & Mensah, 2022).

1.1 Research Gaps

Most prior studies on transfer pricing were foreign studies (Arifin, Saputra, & Purbasari, 2020; Sari, 2018; Barker, Asare, & Brickman, 2017; Anggraeni & Lutfillah, 2019; Merle, Gamrh, & Ahsan, 2019; Kusuma & Wijaya, 2017; Talab, Flayyih, & Yassir, 2017). However, there has been limited attention drawn to transfer pricing and the financial performance of companies, especially in Nigeria (Pozzoli & Venuti, 2014; Umobong, 2017; Nekhili & Cherif, 2011). Even the Nigerian studies on transfer pricing (Anastasia & Onuora, 2019) adopted related party transactions as the primary transfer pricing mechanism without considering other possible transfer pricing mechanisms such as governance characteristics (board size, ownership structure, board independence, etc.) affecting financial performance. So, there is a need for further research on transfer pricing to examine its connection with the financial performance of multinational companies.

This current study, therefore, was intended to extend the research on transfer pricing to account for additional mechanisms of transfer pricing and their impacts on the financial performance of multinational companies in Nigeria as well as extending the period of analysis till 2022 compared to previous Nigerian researches that ended in 2019.

1.2 Research Objectives and Justification

The broad aim of this article, therefore, is to investigate the influence of transfer pricing (related party transactions and governance characteristics measured by board size and board independence) on financial performance (profitability and firm value) with a concentration on listed multinational manufacturing companies in Nigeria because of their substantial involvement in foreign investments and linkages with overseas group companies. Control variables include firm size and leverage. This study covered 2013-2022 (10 years) to examine the

association between transfer pricing and the financial performance of multinational manufacturing companies in Nigeria. The data were selected from 2013 because the Federal Inland Revenue Service (FIRS) published Nigeria's first transfer pricing regulations in August 2012. This initiative aimed to unify and implement the various transfer pricing provisions available in the Nigerian tax laws and provide a more structured regime for assessing related party transactions. Thus, to ensure uniformity and consistency of information disclosure in the firms' annual reports, the base year 2013 was adopted.

2. Literature Review

2.1 Theoretical Review

Agency Theory

Jensen and Meckling established this theory in 1976 due to the conflict of interests of different relating players in a company. Shareholders, managers, and creditors are the players (Jensen & Meckling, 1976). This study defines an agency relationship as the association where one or more persons (principals) employ another person or group of persons (known as agents) to manage the entity's affairs. The principals have given the agents the right to make decisions. If the principals and agents believe in maximising separate utilities, then it is expected that they would want to satisfy their self-interests, and their interests would not be similar.

Prior studies on related party transactions also adopted agency theory to establish the self-interest motives by parties which lead to a loss of agents' focus from the planned goal of the principal (the owners), thereby contradicting the expectations of the principals (Umobong 2017; Anastasia & Onuora, 2019; Zimon, Appolloni, Tarighi, Shahmohammadi, & Daneshpou 2021). This study explains agency theory from the aspect of conflict of interests that arises when management (agent) wishes to manipulate earnings by involving in transfer pricing practices to transfer their gains to related parties. However, shareholders (principals) want to discourage the high frequency of transfer pricing practices because they are concerned about the negative consequences that come with the use of inappropriate transfer pricing policies. This practice could reveal the deliberate act of

management (agent) to manipulate corporate earnings to boost financial performance.

Therefore, agency theory suggests the motivation for misrepresenting financial performance through aggressive accounting practice (transfer pricing) is rooted in the conflict of interest between managers and shareholders because of the separation of ownership from management. Consequently, the inconsistency of individual claims of principals and agents gives rise to agency costs.

2.2 Empirical Review

2.2.1 Transfer Pricing

Transfer price is the price used to measure the value of goods, services, intangible assets, or other financial transactions exchanged among the different units of multinational enterprises (Kaur, 2013; Kusuma & Wijaya, 2017). Specifically, this paper explains transfer pricing as a corporate policy in defining the prices of goods and services among related parties. Pamungkas and Nurcahyo (2018) analysed the impacts of multinationals and transfer pricing on corporate governance and company performance and then found that the degree of multinational effects has increased the rate of tax avoidance. Irawan, Kinanti and Suhendra, (2016) found that transfer pricing and earning management significantly negatively influence tax avoidance among listed manufacturing firms. This result is similar to Merle et al. (2019) on tax haven and transfer pricing intensity in French firms in France; the authors found a negative association between effective tax rate and transfer pricing intensity.

Anggraeni and Lutfillah (2019) showed that corporate governance and sales growth do not influence transfer pricing practice in Indonesia, while tunnelling incentive positively affects the transfer pricing method. This result is similar to the study carried out by Sari (2019) on the effect of corporate governance mechanisms on transfer pricing, which showed that corporate governance mechanisms do not significantly influence transfer pricing aggressiveness. It could mean that companies did not implement corporate governance practices effectively but only complied with government regulations.

2.2.2 Financial Performance

Some past studies (Nekhili & Cherif, 2011; Pozzoli & Venuti, 2014; García-Meca, García-Sánchez, & Martínez-Ferrero, 2015; Brahma, Nwafor, & Boateng, 2020; Efuntade & Akinola, 2020) have either adopted return on assets (ROA) or Tobin's Q, or both as measures of financial performance. Thus, this study has chosen to use ROA, an accounting measure and Tobin's Q as a market-based measure. Singh, et al., (2017) pointed out that Tobin's Q has been employed mainly by manufacturing entities to explain various corporate phenomena, including cross-sectional variances in investment and diversification decisions and the association between managerial equity ownership and firm value. Similarly, Brahma, et al., (2020) spelt out the importance of ROA as an indicator of effective performance because it helps to modify company size by making it possible to associate the relative performance of one company with the other. The interaction between transfer pricing mechanisms (related party transactions, board size, and board independence) and financial performance are examined as follows:

2.2.3 Related Party Transactions and Financial Performance

Related party transactions (RPTs) refer to the transfer of a company's assets, goods/services, or liabilities between a reporting entity and a related party, whether the entity charges a price or not. Broadly, there are two perspectives regarding the nature of related party transactions. The first perspective states that RPTs are positively related to financial performance; that is, companies use RPTs to fulfil the financial requirements of an entity and enhance corporate economic growth (Tambunan, Hermanto, & Haymans, 2017; Arifin, et al., 2020). Hendratama and Zuni (2020) found a significant positive relationship between RPTs and financial performance; the authors also found that RPTs enhance an entity's financial operations by assisting the entity in curtailing transaction costs created by the domestic market inadequacies. This study then perceives that RPTs can lessen transaction costs and increase efficiency by creating an internal market inside the entity group. Nekhili and Cherif (2011) also revealed that, as majority shareholders' control and voting rights increase, there is a proportional increase in related party transactions for such firms.

On the contrary, Marchini, Tatiana and Alice (2018) argued that related party transactions (RPTs) negatively impact financial

performance. RPTs have been seen to be one of the factors that cause corporate scandals. The authors argued that regulatory bodies, standard setters, investors, and other stakeholders generally consider RPTs as a signal that could adversely influence the company's performance. Jamalikazemini, Tarighi and Fdafan (2020) added that managers use RPTs to exploit a company's resources due to general conflicting interests that could lead to financial performance weakness. Tariq and Gehan (2020) also stressed that RPTs could satisfy the interests of insiders like managers and controlling investors to impound wealth from outside investors such as non-controlling shareholders.

Furthermore, Anastasia and Onuora (2019) found that related party transactions have an insignificant impact on return on equity (ROE) except net worth, revealed to be significantly impacted by related party transactions. This result aligns with Pozzoli and Venuti (2014) but contradicts Umobong (2017) who found a significant relationship between RPTs and ROE. The study established the influence of related party transactions on financial performance of listed multinational manufacturing companies in Nigeria. The study closes knowledge gaps by examining how related party transactions influences financial performance of listed multinational manufacturing companies in Nigeria. Based on the study objectives and discussed empirical studies, the paper sought to test the hypothesis:

> *$H_1$1: Related party transactions have a significant influence on the financial performance of multinational manufacturing companies listed in Nigeria.*

2.2.4 Board Size and Financial Performance

Literature has also pointed at governance characteristics such as board size and board independence as mechanisms of transfer pricing that could protect investors from the opportunistic behaviour of management, which has a resultant effect on the financial performance of firms. The governance characteristics suggest the board's effectiveness in discharging its monitoring duties (Anggraeni & Lutfillah, 2019). Thus, this study indicates that the board of executives supervises managers on behalf of investors; the size and independence of directors show their controlling powers. Munyradadzi, Nirupa, and Callaghan (2016) revealed that larger boards lead to better financial performance. The board members should carefully screen, control, and expel managers involved in manipulating profits through aggressive accounting practices (transfer pricing).

However, El Diri, Costas and Mohammad, (2020) contended that a smaller board size enhances the financial progress of companies because a large board size usually results in less effectiveness among members. Additionally, most times, the CEO might find it tough to govern and also, larger boards lead to conflicts of interests, especially when it comes to the issue of wealth maximisation. Waworuntu and Hadisaputra (2016) found out that fraud increases as the size of the board increases, which could mean an increase in the number and percentages of inside board members. Pamungkas and Nurcahyo (2018) added that the appointment of more executives is a sign of weak governance, which connotes a higher occurrence of transfer pricing practices with a drive to manipulate earnings so that companies can attract external financing at a low cost.

The study established the influence of board size on financial performance of listed multinational manufacturing companies in Nigeria. The study closes knowledge gaps by examining how board size influences the financial performance of listed multinational manufacturing companies in Nigeria. Based on the study objectives and discussed empirical studies, the paper sought to test the hypothesis:

> *$H_1$2: Board size has a significant influence on the financial performance of multinational manufacturing companies listed in Nigeria.*

2.2.5 Board Independence and Financial Performance

Aside from board size, the board's independence is also a factor that may determine how effectively a board can exercise control to curb aggressiveness in transfer pricing practices. Noviastika, Mayowan and Karjo (2016) posited that entities manipulating earnings through transfer pricing usually have management members dominating the board; have the chief executive officer (CEO) serving a dual purpose as the chairman of the board; and have the CEO as the founder; have audit committee members of the board that are not effective. However, Yulia, et al., (2019) opined that the presence of independent non-executive directors indicates the existence of policymakers that have no financial interest and do not involve in the company's operations. So, when a board has more independent members, they can discourage the rate of manipulation of profits through transfer pricing practices involved by executive directors. In other words, the board's independence reduces the propensity to engage in transfer pricing.

The study has established the influence of board independence on financial performance of listed multinational manufacturing companies in

Nigeria. The study closes knowledge gaps by examining how board independence influences the financial performance of listed multinational manufacturing companies in Nigeria. Based on the study objectives and discussed empirical studies, the paper sought to test the hypothesis:

> *$H_1$3: Board independence has a significant influence on the financial performance of multinational manufacturing companies listed in Nigeria.*

2.2.6 Firm Size and Financial Performance

Prior studies have clearly shown that firm size is closely related to a company's financial performance. As large firms have more information resources than small firms, it becomes easier to realise higher profitability and corporate value. With the increase in companies' assets, their market value also rises (Akinola, Adegoke, Efuntade, & Efuntade, 2021; Alarussi & Alhaderi 2018; Nobakht & Melek, 2021). Thus, a possible rise in profit will influence the company's market value of firms. This study selected the firm size variable as a control variable to control this influence.
The study established the influence of firm size on financial performance of listed multinational manufacturing companies in Nigeria. The study closes knowledge gaps by examining how firm size influences the financial performance of listed multinational manufacturing companies in Nigeria. Based on the study objectives and discussed empirical studies, the paper sought to test the hypothesis:

> *$H_1$4: A significant relationship exists between firm size and financial performance of listed multinational manufacturing companies in Nigeria.*

2.2.7 Leverage and Financial Performance

This study also considers leverage as a control variable. Financial leverage and debt move in equal directions, meaning that, as debt rises, financial leverage also grows. The principal purpose of financial leverage is to maximise the investor's return in advantageous economic conditions (Anetoh & Anetoh, 2016). When the percentage of debt is more than equity and preference stocks, then it is said that the company is said to be more levered. Similarly, some studies have shown that financial leverage has a positive effect on the financial condition of corporate entities (Tagi, Rizwan, & Imran, 2020), while some researchers have resolved that it will have a harmful consequence on the financial health of entities (Appiah, Prince, & Yakubu, 2020). The study established the influence of leverage

on financial performance of listed multinational manufacturing companies in Nigeria. The study closes knowledge gaps by examining how leverage influences the financial performance of listed multinational manufacturing companies in Nigeria. Based on the study objectives and discussed empirical studies, the paper sought to test the hypothesis:

H_15: Leverage has a significant influence on the financial performance of multinational manufacturing companies listed in Nigeria.

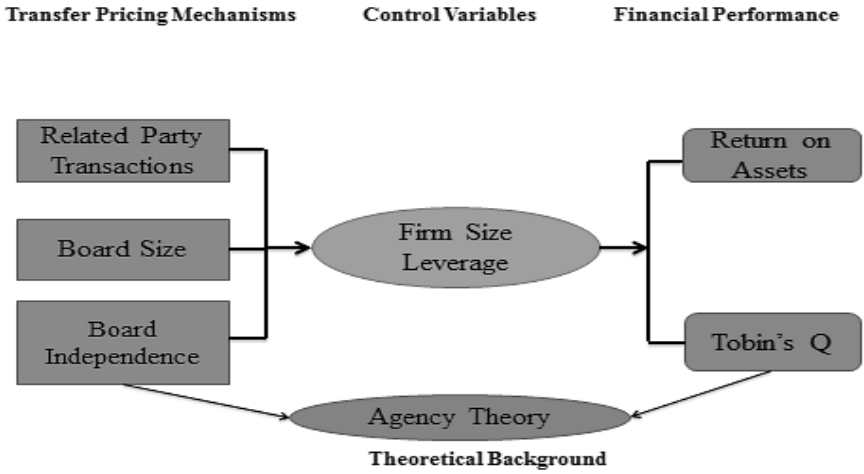

Fig. 1: Conceptual framework showing the interactions between transfer pricing and financial performance
Source: Researcher's conceptual model, (2024)

3. Methodology

This study utilised the ex-post facto research design. This design is appropriate because it relied on secondary data and pulled existing data sets from the financial statements for analysis and conclusion. This study gathered data from annual reports of multinational manufacturing companies listed on the website of the Nigerian Exchange Group between 2013 and 2022. This population of the study constituted 12 multinational manufacturing companies listed on the Nigerian Exchange Group as of 31st December 2022 (Berger Paints Plc., Beta Glass Plc., Chemical and Allied Products Plc., Cadbury Nigeria Plc., Dangote Cements Plc., Grief Plc., Guinness Plc., Lawfare Plc., Nestle Plc., Notre Chemical IND Plc., PZ Cussons Nigeria Plc., and Unilever Plc). The sample size was the study population because it is not significant (i.e. less

than 30), using the census sampling technique. The panel data regression analysis was adopted to determine the influence of the transfer pricing mechanisms (related party transactions, governance characteristics) on financial performance (return on assets and Tobin's Q). Control variables were firm size and leverage.

Model Specification

In examining the influence of transfer pricing on performance in multinational manufacturing companies in Nigeria, this study adopted the model in the work of Anastasia and Onuora (2019), originally stated as follows:

$ROE = f(RPTs)$
$NW = f(RPTs)$
The regression equations are:
$ROE_{it} = \beta_0 + \beta_1 RPTs_{it} + \varepsilon_t$
$NW_{it} = \beta_0 + \beta_1 RPTs_{it} + \varepsilon_t$

Where: RPTs = Related Party Transactions; ROE = Return on Equity NW = Net Worth; ε = Error Term; $_i$ = Firm $_t$ = Time; β_0 = Constant of regression equation; β_1= Regression Coefficient.

However, this study modified the model by adding governance characteristics (measured by board size and composition) as independent variables in line with Nekhili and Cherif (2011). The dependent variables comprised return on assets and Tobin's Q. The control variables were firm size and leverage (Alarussi & Alhaderi, 2018; Appiah, Prince, & Yakubu, 2020). Thus, the study modified the model to capture the selected variables in the study as follows:

$P = f(TPMs)$ i
$ROA = f(RPTs, BSize, BInd, FSize, LEv)$ ii
$QT = f(RPTs, BSize, BInd, FSize, LEv)$ iii
$ROA_{it} = a + \beta_1 RPTs_{i,t} + \beta_2 BSize_{i,t} + \beta_3 BInd_{i,t} + \beta_4 FSize_{i,t} + \beta_5 LEv_{i,t} + \varepsilon_{i,t}$ iv
$QT_{it} = a + \beta_1 RPTs_{i,t} + \beta_2 BSize_{i,t} + \beta_3 BInd_{i,t} + \beta_4 FSize_{i,t} + \beta_5 LEv_{i,t} + \varepsilon_{i,t}$ v

Where:

FP = Financial performance

TPMs = Transfer pricing mechanisms

$RPTs_{it}$ = Related party transactions of the *i*th firm at time *t*; $BSize_{it}$ = Board Size of the *i*th firm at time *t*;

$BInd_{it}$ = Board independence of the *i*th firm at time *t*; $FSize_{it}$ = Firm Size of the *i*th firm at time *t*;

LEv_{it} = leverage of the *i*th firm at time *t*;

ROA_{it} = Return of assets of the *i*th firm at time *t*;

QT_{it} = Tobin's Q of the *i*th firm at time *t*;

β_1 to β_5 = coefficient of explanatory variables;

Table 1: Measurement of variables

Variables	Measurement	Source
Related Party transactions	RPT is the total sales value of business transactions done with related parties divided by the beginning balances of total assets.	Umobong (2017)
Board Size	Board size is the number of executives and independent directors on the board.	Xavier, Shukla, Oduor, & Mbabazize (2015)
Board composition	Board independence is the proportion of executive and non-executive directors on the board.	Munyradadzi, Nirupa, & Callaghan (2016)
Firm Size	Firm size is the natural logarithm of total assets of firms.	Alarussi & Alhaderi (2018)
Leverage	Leverage is the ratio of debt to total equity of firms.	Appiah, Prince, & Yakubu (2020)
Return on Assets	ROA is the proportion of a firm's annual net income to total assets during a financial year.	Brahma, et al. (2020)
Tobin's Q	The book value of total assets minus the book value of common equity plus the market value of common equity divided by the book value of total assets.	Singh, Tabassum, Darwish, & Batsakis, (2017)

Source: Author's compilation, (2024)

A-priori Expectation

Transfer pricing mechanisms exert a positive relationship with the financial performance of firms. The expectations are presented in mathematical forms as follows:

$\frac{TPMs}{ROA} > 0$: This connotes that transfer pricing mechanisms exert a positive relationship with profitability.

$\frac{TPMs}{QT} > 0$: This connotes that transfer pricing mechanisms exert a positive relationship with firm value.

4. Data Analysis And Results

The panel series collated for this study was utilised to quantitatively assess the influence of transfer pricing on the financial performance of listed multinational manufacturing companies in Nigeria between 2013 and 2022 (10 years).

Descriptive Statistics

The results of descriptive statistics of this study include mean, median, standard deviation, minimum, and maximum values, as presented in Table 2.

Table 2: Results of descriptive statistics

	ROA	TOBIN'S Q	BIND	BSIZE	RPTs	FIRM_SIZE	LEVERAGE
Mean	0.080500	1.333509	0.623125	9.885417	0.055393	7.415313	0.155917
Median	0.069500	1.381019	0.643000	9.500000	0.008098	7.605000	0.073000
Maximum	1.089000	3.151847	0.882000	17.00000	0.886394	9.230000	1.975000
Minimum	-1.799000	-0.352501	0.143000	4.000000	0.000000	5.240000	-5.005000
Std. Dev.	0.267038	0.426043	0.190295	3.597864	0.104608	1.082628	0.687322
Observations	120	120	120	120	120	120	120

Source: Researcher's computation, (2024)

From Table 2, the average rate of return on assets is approximately 8%, reflecting the weak financial performance of multinational manufacturing companies in recent years, which is lower than the average industry standard. However, the result of Tobin's Q average value is entirely not the same. As the average Tobin Q ratio is 1.33 and higher than one,

Nigerian manufacturing firms have been able to utilise their assets optimally. Additionally, the average value of related party transactions is 5.5%, implying that there was a limited amount of related party transactions performed by the companies during the analysis period.

Board independence, which measures the degree of independence of the board of directors, reveals a mean value of 0.623, which indicates that independent directors comprised 62.3% and executive directors accounted for 37.7% of the boards of multinational manufacturing firms in Nigeria. As opined by Nwanji, Howell, Faye, Ogbu and Egbide (2019), the corporate governance code in the Nigerian business climate suggested that independent directors in Nigerian firms should constitute at least 20% of the total members. Thus, the descriptive statistics show that the independent directors in listed manufacturing firms in Nigeria are well-represented. This suggests the need to maintain adequate independent members on boards because they exhibit useful and consistent supervisory and consultative functions in the most significant interests of the investors.

Board size reveals that the average number of directors in multinational manufacturing companies in Nigeria is approximately 10. The average leverage results show that creditors have a 15% claim on the returns of international firms; this, however, implies that the firms are not highly levered. All the variables have 96 observations, indicating the accessibility of information on the series and balanced panel data.

Correlation Matrix

Correlation displays the coefficients of association amid the variables under study. Each cell in the table shows the pair connection of two variables, which helps see which pairs have negative or positive correlations, as presented in table 3.

Table 3: Correlation of models ROA and Tobin's Q

	ROA	Tobin's Q	BIND	BSIZE	RPTS	FIRM_SIZE	LEVERAGE
ROA	1.000000						
Tobin's Q	0.589067	1.000000					
BIND	0.153738	0.135323	1.000000				
BSIZE	0.003654	0.226269	0.463550	1.000000			
RPTS	0.170303	0.145627	-0.037906	-0.078507	1.000000		
FIRM_SIZE	0.229300	0.425182	0.330657	0.738620	0.228643	1.000000	
LEVERAGE	0.104648	0.195306	0.091513	0.142305	0.251018	0.307460	1.000000

Source: Researcher's computation, (2024)

In Table 3, board independence (0.154), board size (0.00365), related party transactions (0.1703), firm size (0.229), and leverage (0.105) show positive correlation pairs with the return of assets, implying that 1% increase in the independent variables will improve financial performance by 15.4%, 0.3%, 17.03%, 22.9%, and 10.5% respectively. According to the correlation matrix result of the model measured by ROA, transfer pricing mechanisms positively correlate with the profitability of multinational manufacturing companies in Nigeria. Furthermore, board independence (0.135), board size (0.226), related party transactions (0.146), firm size (0.425), and leverage (0.195) also show positive relationship pairs with Tobin's Q, implying that a 1% increase in the independent variables will improve firm value by 13.5%, 22.6%, 14.5%, 42.5% and 19.5% respectively. According to the correlation matrix result of the model measured by Tobin's Q, transfer pricing mechanisms positively correlate with the firm value of multinational manufacturing companies in Nigeria.

Multicollinearity Test

Variance inflation factors range from 1 upwards. The numerical value for VIF tells us (in decimal form) what percentage of the variance (i.e. the standard error squared) is inflated for each coefficient. Generally, a VIF value higher than 10 indicates a high correlation, which will cause concern.

Table 4: Result of multicollinearity test

Variable	Coefficient Variance	Uncentred VIF	Centred VIF
BIND	0.023850	15.10089	1.275914
BSIZE	0.000151	24.86705	2.881915
RPTs	0.001632	136.8015	2.826035
FIRM_SIZE	0.001654	1.214436	1.154406
LEVERAGE	0.078033	1.618966	1.261518
C	0.051888	77.46341	NA

Source: Researcher's computation, (2024)

From the result of table 4 using variance inflation factor, all the values of VIF show values exceeding one but less than 10. Thus, there is no problem of multicollinearity among the independent variables.

Unit Root Test

The paper adopted the Levin, Lin and Chu Test and PP-Fisher Chi-square statistics to examine the integration order among the series. The null hypothesis states that the unit root is present, while the alternate view says that the unit root is not current. If the computed probability value is less than the significant level at 0.05, the null hypothesis is rejected; thus, the series is stationary and vice-versa.

Table 5: Results of unit root tests

	Levin, Lin, & Chu Test			PP-Fisher Chi Square		
VARIABLE	Intercept	Intercept and Trend	None	Intercept	Intercept and Trend	None
ROA	0.8413	0.0000*	0.0067*	0.0008*	0.0051*	0.0001*
TOBIN'S Q	0.3722	0.0003*	0.4780	0.0014*	0.0024*	0.8577
BIND	0.0000*	0.0000*	0.0020*	0.5158	0.1803	0.0238*
BSIZE	0.0000*	0.0000*	0.5044	0.1463	0.9989	0.4944
RPTs	0.0000*	0.0000*	0.4552	0.0270*	0.3559	0.5374
FIRM SIZE	0.0025*	0.0000*	0.9998	0.3125	0.0021*	0.9926
LEVERAGE	0.0000*	0.0000*	0.0274*	0.0274*	0.2242	0.0250*

**values are significant at 5%*

Source: Researcher's computation, (2024).

Table 6: Summary of unit root test result

	Levin, Lin, & Chu Test		PP-Fisher Chi Square	
VARIABLE	At Level	I(d)	At Level	I(d)
ROA	0.0000*	I(0)	0.0001*	I(0)
TOBIN'S Q	0.0003*	I(0)	0.0014	I(0)
BIND	0.0000*	I(0)	0.0238*	I(0)
BSIZE	0.0000*	I(0)	-	-
RPTs	0.0000*	I(0)	0.0270*	I(0)
FIRM SIZE	0.0000*	I(0)	0.0021*	I(0)
LEVERAGE	0.0000*	I(0)	0.0274*	I(0)

***5% level of significance*

Source: Researcher's computation, (2023).

The results from tables 5 and 6 show that the series is all stationary in their level form indicated as I (0), which specifies the absence of co-

integration association. Thus, the research variables can be adopted in panel data regression with reliability.

Hausman Specification Test

The study adopted the Hausman specification test to determine if panel data with fixed effects or random effects is appropriate. If the p-value is lower than the 0.05 level of significance, the null hypothesis that the random result is suitable is rejected.

Table 7: Results of Hausman test of model measured by ROA

Correlated Random Effects - Hausman Test Equation: Untitled Test period random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	6.580874	5	0.2537

Source: Researcher's computation, (2024).

Results from table 7 show an absence of significant variance among the series. Moreover, the result indicates a 0.2537 p-value that exceeds the 0.05 level of significance, implying that the impact was not significant, and then, the null hypothesis was accepted. Thus, the outcome indicated that the random effect model was suitable; hence, the study approved it for the regression model.

Table 8: Results of Hausman test of model measured by Tobin's Q

Correlated Random Effects - Hausman Test Equation: Untitled Test period random effects			
Test Summary			
	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	5.300809	5	0.3803

Source: Researcher's computation, (2023)**.**

Table 8 also shows the absence of significant variance among the series. Moreover, the result indicates a 0.3803 p-value that exceeds the 0.05 level of significance, implying that the impact was not significant, and then, the null hypothesis was accepted. Thus, the outcome indicated that the random effect model was suitable; hence, this study approved it for the regression model.

Regression Results

The panel regression analysis was adopted to estimate the influence of the independent variables (related party transactions, board size, and board independence) and dependent variables (ROA and Tobin's Q).

Table 9: Result of regression model one

Variable	Coefficient	Prob.
BIND	0.282428	0.0709
BSIZE	-0.033019	0.0086
RPTs	0.119919	0.0039
FIRM_SIZE	-0.003291	0.9357
LEVERAGE	0.086721	0.7571
C	-0.662612	0.0046
R-squared	0.145695	
F-statistic	3.069765	
Prob (F-statistic)	0.013239	

Source: Researcher's computation, (2023)

Results from Table 9 show that the R^2 of the variables was 0.1457. The R^2 indicated that the model could explain about 15% of the variation in the dependent variable by the independent variables. The remaining 85% of the variations in profitability were accounted for by other factors not captured in the model.

Similarly, results from the F-statistics show a 0.0132 probability value of less than 0.05 significant level. This result invariably suggests that the explanatory and control variables jointly have a substantial impact on the predictive variable (return on asset) in listed multinational manufacturing companies in Nigeria. Thus, transfer pricing mechanisms significantly influence the profitability of multinational manufacturing companies listed in Nigeria.

Table 10: Result of regression model two

Variable	Coefficient	Prob.
BIND	0.101237	0.6744
BSIZE	-0.024813	0.1971
RPTs	-0.034524	0.9368
FIRM_SIZE	0.216585	0.0009
LEVERAGE	0.033410	0.5987
C	-0.093627	0.7922
R-squared	0.202006	
F-statistic	4.556547	
Prob (F-statistic)	0.000948	

Source: Researcher's computation, (2023)

Results from Table 10 show that the R^2 of the variables was 0.2020. The R^2 indicated that the model could explain about 20% of the variation in the dependent variable by independent variables. The remaining 85% of the variations in firm value were accounted for by other factors not captured by the model.

Similarly, results from the F-statistics show a 0.0132 probability value of less than 0.05 significant level. This result invariably suggests that the explanatory and control variables jointly have a considerable impact on the predictive variable (return on asset) in listed multinational manufacturing companies in Nigeria. Thus, the null hypothesis "transfer pricing mechanisms significant impacts on the profitability of multinational manufacturing companies listed in Nigeria" is rejected.

5. Discussion

Board independence (BIND) has a positive (0.2824) and insignificant association with ROA because the p-value (0.0709) exceeded the 5% benchmark for the analysis. Board size shows a significant negative relationship with ROA as revealed by the coefficient (-0.033) and p-value (0.0086). Related party transactions also show a positive and meaningful relationship with profitability (ROA), with a coefficient of 0.120 and a p-value of 0.0039. These findings are similar to previous research that found a significant negative relationship between board size and profitability; insignificant positive association amid board independence and profitability (Pamungkas & Nurcahyo 2018; Waworuntu & Hadisaputra, 2016). However, the significant positive relationship

between RPTs and profitability is against the findings of Anastasia & Onuora (2019) and Pozzoli and Venuti (2014).

This positive result in board independence and profitability could mean that the board's independence has made a difference in monitoring the affairs of managers and discouraging manipulation of profit through aggressive accounting practices (transfer pricing). The positive association also indicates that independent directors in multinational companies in Nigeria perform a vital function by effectively resolving agency problems. Their presence on the board leads to more effective decision-making, especially in transfer pricing. The negative and significant relationship between board size and profitability signals that an increase in the number of executives could be a sign of weak governance and might result in an excessive conflict of interests among directors. Also, it could be that there is an increased level of fraud through aggressive transfer pricing as the size of the board increases, which is detrimental to the financial health (profitability) of these firms. The positive and significant interaction between RPTs and profitability suggests that managers use RPTs to fulfil the corporate economic needs and enhance the financial growth of multinational manufacturing firms in Nigeria. Furthermore, the results indicate that companies use RPTs as a transfer pricing mechanism to minimise transaction costs by creating an insider market with the entity group.

Furthermore, regarding the model measured by Tobin's Q, board independence (BIND) has a positive and insignificant association with firm value. The coefficient (0.1012) and p-value (0.6744), which exceeds the 5% benchmark for the analysis, confirm this relationship. Board size shows an insignificant negative relationship with Tobin's Q, as revealed by the coefficient (-0.0248) and p-value (0.1971). Related party transactions also show a negative and insignificant relationship with firm value (Tobin's Q) with a coefficient of -0.0345 and a p-value of 0.9368. These findings are in line with the outcomes of Marchini, et al., (2018), Jamalikazemini, et al., (2020), and Tariq and Gehan (2020). However, the negative relationship between board size, RPTs, and firm value is contrary to the findings of Nekhili and Cherif (2011).

The negative relationship between board size and firm value also signals that having a more significant number of directors on the board could lead to conflicts of interest. The conflict of interest can connect with a higher occurrence of transfer pricing practices with a drive to manipulate earnings, especially transactions involving opportunistic executive directors, which eventually affect the corporate value. Related

party transactions show an insignificant negative relationship with firm value. This negative relationship, however not significant, could likely be that companies use RPTs as a transfer pricing mechanism to exploit companies' resources due to general conflicting interests that lead to financial performance weakness and loss of shareholders' wealth.

6. Conclusion

As can be inferred from the results in the previous section, the study found that transfer pricing mechanisms collectively have a significant influence on profitability and firm value (financial performance). Thus, none of the transfer pricing mechanisms tested in this study is less important than the other. Therefore, the study concludes that transfer pricing significantly influences the financial performance of listed multinational manufacturing companies in Nigeria. The study has contributed to the existing literature by adding governance characteristics to transfer pricing mechanisms in Nigeria and investigating their impact on financial performance using the accounting-based measure (profitability) and market-based measure (firm value). Also, this study will be helpful to investors and other stakeholders to figure out whether managers utilise transfer pricing as sound business exchanges to meet corporate economic needs or, due to conflicting interests, managers consider it a tool to exploit enterprise resources.

7. Recommendations and Study Limitation

Multinationals in Nigeria should ensure that more independent directors are employed to strengthen the board's independence to exercise more control in their optimal capability to limit management from exploiting corporate resources and manipulating profits through aggressive transfer pricing. Companies should appoint autonomous directors based on their ability to carry out a supervisory or controlling function, but to add to the corporate value and contribute substantially to financial performance through liberated professional business competence and skills or other means of benefit to executive members' establishments they oversee.
Multinational firms should maintain a smaller board size to ensure that managers function as reliable stewards for the entity in the stakeholders' interests through supervision and strict regulation of transfer pricing practices to enhance sustained financial performance. Managers of multinational firms should strictly carry out related party transactions that

will fulfil the financial requirements of their entities and enhance corporate economic growth. Managers should not exploit resources that damage the shareholders' wealth and the financial health of the companies they oversee.

This study was limited to multinational manufacturing firms. So, further studies should look into other sectors in Nigeria, such as oil and gas and telecommunication sectors. Moreover, future studies can explore other areas of corporate governance such as ownership concentration, CEO duality, board diversity, among others and test the moderating effects of these variables on the relationship between transfer pricing and financial performance of MNEs.

The authors report there are no competing interests to declare

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