# CORPORATE TAX SAVING STRATEGY AND THE VALUE OF LISTED NON FINANCIAL FIRMS IN NIGERIA

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# BEING A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING, MALLAM SANUSI LAMIDO SANUSI COLLEGE OF BUSINESS AND MANAGEMENT STUDIES, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY (Ph.D.) IN ACCOUNTING, IGBINEDION UNIVERSITY, OKADA, EDO STATE.

**OCTOBER, 2021**

## DECLARATION

I, Godwin Oke Onomuaha, declare that:

1. The study was undertaken by me in the Department of Accounting, College of Business and Management Studies, Igbinedion University, Okada, under the supervision of Dr. (Mrs.) Mary Josiah and Co-supervisor, Dr. Omimi-Ejoor Osaretin Kingsley Atu
2. This Work has not been submitted for the award of any degree elsewhere.
3. All ideas and views were a product of my personal research and where the views of others were expressed, they were duly acknowledged.
4. I shall be totally, wholly and fully responsible for any liability that may arise or flow form this study, if any.

……………………………………… Godwin Oke Onomuhara

## CERTIFICATION

This is to certify that this research was carried out by Godwin Oke Onomuhara in the Department of Accounting, College of Business and Management Studies, Igbinedion University, Okada, and it is considered adequate in scope and quality in partial fulfilment of the requirements for the degree of Ph.D (Accounting).

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## DEDICATION

This work is dedicated to the Almighty God, my Creator and Sustainer; my wife Mrs Franca Oke Onomuhara; my children, Ovie Oke, Kevwe Oke, Eloho Oke and Nice Oke; and my mum, Mrs Agnes Onomuhara, and my siblings for their financial, prayer and physical support, I can’t forget my mentor and supervisor, Dr (Mrs) Mary Josiah, Dr Charles Eweraye, Mrs Alice Ikpen Jegede and Dr Henry Osazevbaru for their friendly and moral support that empowered me to continue to the end. Special salute to Pastor Chris Nwaka, the Resident Pastor of the Main Church of Living Faith Church, Asaba who inspired me in one of his teachings in 1997. He said, and I quote, “At any age in life, you can study to achieve any level of education”.

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## ABSTRACT

The broad objective of this study was to investigate the moderating effect of audit committee size on the relationship between corporate tax saving strategy and firm value of listed non- financial firms in Nigeria using a time frame of ten years (2011 – 2020). To achieve at objective, the study specifically ascertained the extent to which audit committee size moderated the relationship among cash effective tax saving strategy, income effective tax saving strategy, non-debt tax saving strategy, debt tax saving strategy and firm value proxies for price to earnings ratio and Tobin Q. In this study, we employed ex-post facto research and descriptive research designs on a panel data set which was sourced from audited annual financial reports of seventy-three (73) listed non-financial firms in Nigeria. In this study, four econometric models were specified, and the study’s hypotheses were tested using both Moderated Regression Analyses technique (MRA) and hierarchical regression analyses technique. Specifically, the probability values, (p- values) from the regression outcomes formed the basis for the decision on the statistical significance of the coefficients obtained for each tested hypothesis. However, the result showed that audit committee size had a significant moderating effect on the relationship between tax saving strategy and firm value. Further investigation reveals mixed outcome which suggest a positive significant relationship between debt tax saving strategy and firm value proxy of Tobin Q but produces a significant negative relationship with firm value proxy of price to earnings during the period under investigation. Further, we find that income effective tax saving strategy show no significant relationship with both firm value proxies of price to earnings and Tobin Q. In line with the findings obtained, we recommend among others a simultaneous policy action in the quest for higher firm value for listed non-financial companies in Nigeria. This imply that employing non-debt tax saving strategy as a tool for improved value, (with respect to Tobin Q) should be complimented with a deliberate increase in the size of its audit committee. The application of such vital policies has been empirically verified hence we believe it will go a long way to reduce agency rift and enhance firm value of non-financial companies in Nigeria.

**Keywords:** Audit committee size, Cash effective tax saving strategy, Corporate tax saving strategy, Debt tax saving strategy, Firm value, Income effective tax saving strategy, Non-debt tax saving strategy,

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## CHAPTER ONE INTRODUCTION

## Background to the Study

The purpose of establishing a company is to make profit. The greater the profit generated by the company, the higher the value of the company seen in the company's stock price. This justifies management’s focus on value maximization and one of such strategies is tax optimization approach which can result in corporate tax savings. In the tax literature, the corporate tax saving, tax planning and tax aggressiveness are often used interchangeably, Christine (2014), all refer broadly to attempts by companies to reduce their tax liabilities. According to Suandy (2011), tax saving is an effort made to save and minimize tax payments legally without violating applicable rules. Hanlon and Heitzman (2010) defined corporate tax saving as a continuum of tax planning strategies with perfectly legal and low-risk strategies at one end and other strategies that entail tax evasion or tax sheltering at the other end. Given the broad range of strategies available to firms, managers may also have to decide on whether they opt for more or less aggressive forms of tax savings. Apart from the direct costs of engaging in such activities, managers typically have to ensure that these actions are hidden from tax authorities. There are potential costs related to strategies to minimize taxes such as implementation and transaction costs, possible penalties imposed by the tax authorities and reputation risks.

The concept of tax saving did not gain much attention until Hoffman addressed tax planning as a concept in 1961. Hoffman's tax planning theory is a model that links the role of tax practitioners with that of achieving the ultimate goal of tax planning aimed at achieving tax savings. This model has four cardinal viewpoints of tax planning which are summarised as

certainty, equity, simplicity and efficiency, tax planning is a complex process; it is a beneficial process and if conducted as a formalized procedure, the highest form of it is not always practised, therefore, benefits are not always available to tax planner since they are not always practised to the fullest, (Wahab, 2010). It should be noted that tax planning activities may not continue for a long time as a result of the tax authorities' response to loopholes or ambiguities in tax laws (Hoffman, 1961; Dyreng, Hanlon & Maydew, 2010). Almost all companies prefer to pay lower taxes or get some tax savings on tax payable given that the main purpose of the company is to be more focused on minimizing the overall effective tax rate in order to maximize profits after-tax for shareholders.

In explaining the relationship between corporate tax saving and firm value, two key perspectives are identified in the literature. First, in risk minimization perspective, corporate tax saving especially, aggressive strategies can diminish the firm value as investors consider this strategy as risky. As documented by prior studies, attempts at corporate tax saving may increase firm risk, impose reputational costs and lead to adverse capital market consequences such as reduced firm value and increased cost of capital (Dhaliwal & Wang, 2016. Hutchens & Rego 2012; Kim&Sin, 2011). Desai and Dharmapala (2006) also supportedthey used the view but using the information asymmetry approach. According to them, there exists information asymmetry between managers and shareholders with respect to tax saving and this can facilitate managers acting in their own interest thereby resulting in a negative association between tax saving and firm value. They argued that the lack of transparency associated with tax planning provide managers with a screen or cover to hide self-serving actions (Desai et al., 2006). A related concern of shareholders is that managers

who are aggressive with respect to tax saving may also be aggressive in their financial reporting decisions (Frank, Lynch & Rego, 2009).

Second, under cash flow maximization perspective, corporate tax saving is considered as a beneficial activity which may increase firm value in the future. Here, the aim of corporate tax saving activities is to simply transfer wealth from the state to the shareholders. That would be accomplished every time the firm successfully avoid paying some amount of taxes that would be otherwise due. Shareholders, then, would be keen on the idea of encouraging their representatives to incur in that practice. Consistent with the notion is the fact that tax saving has been viewed as benefiting shareholders via increased after-tax earnings. Consequently, the aim of the study was to investigate the impact of corporate tax saving on firm value using listed firms in Nigeria. Understanding the specific mechanism through which tax planning affects firm value is important for a thorough knowledge of the relationship between tax planning and firm value and how investors perceive the risk of tax planning or tax saving.

## Statement of the Research Problem.

The effects of tax saving strategy on firm performance have received so much attention in the fields of finance, economics and accounting. Prior related literature especially from the theoretical perspectives of this subject, revealed it to be very much debatable as there were different theoretical perceptions. Firstly is the risk minimization perspective which suggests that corporate tax saving will diminish firm value (Dhaliwal et al., 2016; Hutchens et al, 2012; Kim et al., 2011). Secondly is the cash flow perception which suggests that tax savings transfer cash from the state to shareholders and thus improve firm performance. So far, none of these two leading theories

have been able to fit perfectly into real world scenarios therefore, the need for the researcher to conduct this particular study.

Furthermore, we found that a large body of literature such as Tax planning and firm value: empirical evidence from Nigerian consumer goods industrial Sector *Research* journal of finance and accounting*.* The effect of tax planning and corporate governance on firm value. Tax planning, corporate governance and equity value. The British Accounting Review to mentions but few **i**nvestigated the subject of effective tax rates as it related to firm performance but majority of the authors did employ the measure of return on asset as (Accounting Performance) a proxy for firm performance which clearly indicated that firm value (Value Performance) proxy has been rarely evaluated. Prominent among the scholars who conducted similar studies in Nigeria include Nwaobia, Kwarbai, & Ogundajom,(2016).Tax Planning and Firm Value: Empirical Evidence from Nigerian Consumer Goods Industrial Sector. Research Journal of Finance and Accounting, they used panel regression model to examine the effective tax rate (ETR), Dividend (DIV) and Firm age (FAG) and found that there are positively and significantly related to firm value, firm size, leverage and tangibility exert negative effect on firm value.

Monday and Odion (2019); Madugba, Agburuga, Obadiaru, Ani and Ben-Caleb (2020), Umeh, Okegbe and Ezejiofor (2020), and Fagbemi, Olaniyi and Ogundipe (2020). Used only on one sector which is consumers good sector as their sample size, in this research work we are introducing other sectors, Oil and gas sector. Consumer services sector, Healthcare sector, Basic materials sector consumer goods sector and Technology sector to make it a wholistic sample size. Hence we took Aronwan and Okafor’s (2019) opinion that says that, relying on an effective tax rate as the only indicator of corporate tax saving strategy could yield bias and problematic

conclusions, which could be misleading and very much inadequate in the consideration of tax planning.

According to Lemmon and Lins (2003). Accounting profit\ performance measures what has happened in the past, while Value performance is a measure of current and future profits. This suggests that such vital element that borders deeply on shareholders confidence becomes critical and requires a thorough investigation. Hence following on the forgoing literature gap, this study is set to employ price-to-earnings per share and Tobin’sQ ratio as measurements for firm value which are also consistent with extant literature.

Another motivation for conducting this study has to identify and evaluate other key contributing tax saving strategies (other than effective tax rates) available to firm managers. That was in line with the fact that most prior related literature consistently deployed only the effective tax rate strategy in evaluating the issue. Again, relay on Aronwan and Okafor’s (2019) opinion that relying on an effective tax rate as the only indicator of corporate tax saving strategy could yield bias and problematic conclusions, which could be misleading and very much inadequate in the consideration of tax planning. However, in this study we employed other tax saving strategies such as cash effective tax saving strategy, income effective tax saving strategy, non-debt tax saving strategy, debt tax saving strategy and depreciation tax saving strategy were available to firm managers. Furthermore, we also looked at manufacturing firms that the important contributions of this industry to the Nigerian economy. While previous authors conducted similar studies using services and banking industries and insurance concerns, less focus was on manufacturing concerns, knowing fully well that tax saving management strategies differed among industries

Also, the need to examine the moderating role of audit committee size on the relationship between corporate tax saving strategy and firm value becomes very interesting. According to Saunders, Lewis and Thornhill (2016). Interactions between independent and dependent variables generate a change in the intensity and/or form of the relationship between the independent variable and the dependent variables. In the same way, the moderator variable interacts with the independent variable to influence the dependent variable. This interaction corresponds to a nonlinear effect since the combined influence of the independent and moderating variables on the dependent variable is either larger or smaller than the sum of their separate influence. Therefore, knowledge as regards the interaction between audit committee size and all the tax saving strategies available to firm managers would greatly benefit corporate managers. The benefit of the effects would open up the need for managers to simultaneously adopt a dual policy application as against a single/individual policy application in the process of creating more value for the firm.

Therefore, at this juncture, it is worthy to mention that, to the best of the researcher’ knowledge, no related study conducted in Nigeria had given attention to all the above mentioned tax saving strategies and also deployed performance value proxy of price-to-earnings per share together with evaluating the moderating effect of audit committee size on the relationship that exists between corporate tax saving strategy and firm value all in a single study of this nature. All of the above motivated the researcher to proceed with this study.

## Research Objectives

The broad objective of the study was to examine the corporate tax saving strategy and firm value in Nigeria, the moderating roles of audit committee size on the relationship between corporate tax

saving strategy and firm value of listed non-financial firms in Nigeria. However, the specific objectives were as to;

1. Identify the relationship between Cash Effective Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.
2. Appraise the relationship between Income Effective Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.
3. Evaluate the relationship between Non-debt Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.
4. Assess the relationship between Debt Tax Saving Strategy and Firm Value of listed Non- financial firms in Nigeria.
5. Explore the moderating effect of Audit Committee Size on the relationship between Corporate Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.

## Research Questions

The following research questions were laid out to guide this study;

1. What is the relationship between Cash Effective Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria?

1. To what extent does Income Effective Tax Saving Strategy relate with Firm Value of listed Non-financial firms in Nigeria?
2. What is the effect of relationship that exists between Non-debt Tax Saving Strategy and Firm Value of listed non-financial firms in Nigeria?
3. What is the relationship that exists between Debt Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria?
4. What is the moderating effect of Audit Committee Size on the relationship between Corporate Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria?

## Research Hypotheses

The following hypotheses were tested in the course of this study. The hypotheses were in line with the specified objectives and were specified in their null form;

H01 There is no significant relationship between Cash Effective Tax Saving Strategy and Firm Value of listed Non financial firms in Nigeria.

H02 There is no significant relationship between Income Effective Tax Saving Strategy and Firm Value of listed Non financial firms in Nigeria.

H03 There is no significant relationship between Non-debt Tax Saving Strategy and Firm Value of listed Non financial firms in Nigeria.

H04 There is no significant relationship between Debt Tax Saving Strategy and Firm Value of listed Non financial firms in Nigeria.

H05 Audit Committee Size has no significant moderating effect on the relationship between Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.

## Significance of the Study

The study of Corporate Tax Strategy and Firm Value in Non financial firm in Nigeria is expected to be beneficial to a number of parties such as policy makers, listed firms and academics. It was hoped that the study would provoke policy makers to give more attention to the tax saving or

planning given its contribution to the performance of firms. The study would provide useful information to tax authorities and enable the understanding of tax aggressive corporation. In Nigeria, tax audit is performed by the tax authorities to improve tax compliances and on the other hand, to detect tax evasion or tax avoidance. Various audit programmes are implemented to ensure that taxpayers comply with the legal provisions and the current tax regulations within the Self- Assessment System. In connection with that, this study would help tax administration organize an efficient enforcement task as well as redesign and revamp the tax system especially in certain crucial sectors or industries in order to curb tax malpractice. This study would help listed companies in appreciating the value of tax planning and the nexus between tax saving and performance of firms. The study would contribute to the body of knowledge and hence would be of interest to both researchers and academics who seek to explore the relationship between tax saving \ planning and firm value.

## Scope of the Study

The study examined corporate tax savings and firm value of listed firms in Nigeria and the moderating role of audit committee size. The dependent variable for the study was firm value which was a proxy for price-to-earnings ratio and Tobin’s Q ratio. The independent variable for the study is corporate tax saving strategy using five tax saving proxies: cash effective tax saving strategy, income effective tax saving strategy, non-debt tax saving strategy, debt tax saving strategy and depreciation tax saving strategy. However, the moderating variable employed in this study was audit committee size. The period of the study was 2011-2020 and the sample coverage spanned the entire non-financial firms listed on the floor of the Nigerian Exchange Group Plc as at 31st December 2020

## Limitations of the Study

This empirical study was limited to four different corporate tax saving strategy variables (non-debt tax, debt tax, Income effective tax and cash Effective tax). Also, this study was limited to non- financial companies listed on the floor of the Nigerian Exchange Group Plc for the period 2011 and 2020. The sample size covers consumer services sector, healthcare sector, basic materials sector, consumer goods sector, industrial sector, oil & Gas sector, technology sector while this study adopted Krejcie and Morgan, (1970) sample size computation.

## Definition of Operational Terms

The study’s operational terms that were employed included:

## Corporate Tax Saving Strategy

Corporate tax saving refers to the “arrangement of an organization’s affairs in order to minimize tax liability.” This suggests that entities can develop activities which aim to reduce their tax burden and optimize their profits.

## Firm Value

Firm value is the tangible or potential value that an enterprise may create in the future, and it is calculated with different valuation models or methods, so that it becomes possible to arrive at different results.

## Non-Debt Tax

Non-debt tax shield is defined as the ratio of depreciation to total assets and dividends. It also refers to a depreciation tax shield which is a tax reduction technique under which depreciation

expense is subtracted from a taxable income. The amount by which depreciation shields the taxpayer from income taxes is the applicable tax rate multiplied by the amount of depreciation

## Debt Tax

A debt tax shield is the reduction in income taxes that results from taking an allowable deduction from a taxable income. For example, because interest on debt is a tax-deductible expense, taking on debts creates a tax shield. Accelerated depreciation which is also a debt tax allows one to depreciate more of the asset in the first year or two, and it is a great example of a tax shield.

## Cash Effective Tax

The effective corporate income tax rate can be defined on a cash basis as cash income taxes paid divided by a pre-tax accounting income

## Income Effective Tax

The effective income tax is the percent of income that an individual or a corporation pays in taxes.

## Audit Committee Size,

One sub-committee of the board of directors that is saddled with the responsibility of effective corporate governance in an organization

## CHAPTER TWO LITERATURE REVIEW

## Introduction

This chapter provides literature on key concepts such as corporate tax saving, firm value, cash effective tax, income effective tax, non-debt tax saving strategy, debt tax saving strategy, depreciation tax saving strategy and audit committee size. The chapter also covers conceptual expository literature review, theoretical framework and a review of recent prior empirical related studies.

## Conceptual Review

The conceptual literature examines the works by pervious authors, and compares and contrasts their research works to establish the gaps for further research work.

## Firm Value

Firm value embodies the assets maintained, owned and controlled by a company. Firm value is essential because it defines the prosperity of the business owners. Firm value is usually seen to mean an economic measure which reflects the market value of a whole business. It is the aggregate summary of the claims of all providers to the assets of a firm, namely creditors, secured and unsecured and equity holders. In finance literature, firm value is the total amount of the market value of equity and of debt (Nwaobia, Kwarbai & Ajibade, 2015). A high firm value indicates that the company is prosperous hence the shareholders’ wealth is maximized. The prosperity level of the shareholders and investors is reflected in the firm value.

Firm value is an indicator used to assess the performance of a company. Investors also perceive the company through its firm value, and this is related to the stock price. Bhabra (2007) argued that firm value is the amount paid by the prosperous buyer when a company was put up for sale also perceived firm value as the unbiased value from the public and the orientation of a company’s survival. From the preceding, it is clear that firm value is the investors’ perception of a company’s success level and it is usually associated with stock price. Firm value is typically indicated by price

to book value. When the Price-to-book is high, it indicates that the principle of going concern is operational and it translates into shareholders’ wealth. Modigliani and Miller (1961) opined that firm value was determined by a company’s asset earnings power. It suggests therefore, that when the impact of asset earnings power is positive, the company grows in its business activities and its asset turnover becomes efficient. This amounts to high profit.

Scholars such as Adegbie, Akintoye and Isiaka (2019) stated that value could be explained from the concept of fair market value, fair value, investment value and intrinsic value. The authors further stated that firm value could be measured using accounting-based indicators such as return on asset, return on equity, price earnings ratio and price to book value while market valued based indicator usually applied Tobin’s Q definition, as total assets plus market value of ordinary shares minus book value of ordinary shares minus deferred tax) divided by total assets. Tobin's Q is used to measure firm value which shows management performance in managing the firm assets. Chukwudi, Okonkwo and Asika (2020) opined that firm value was the price paid by affluent investors once a company was sold. Therefore, the value of a firm is the total assets owned which consist of the market value of share and liabilities. (Hidayat, Wahyudi, Muharam, Shaferi, & Puspitasari,2019). Investors view firm value from stock prices, stock returns, earnings per share, price earnings ratio, Tobin's Q, and price to book value.

According to Ilaboya, Izevbekhai and Ohiokha, (2016) managers, being the representative of the owners of the business,are responsible for the optimal maximization of the value of the firm which forms the fundamental objective of any organization. Firm value can be enhanced when shareholders’ wealth is amplified through profits and improved cash flow, hence, the importance

of tax planning becomes an integral part of the financial planning programme of any entity. In this study, we viewed firm value from two perspectives: Price-to-earnings per share and TobinQ (due to data availability and their popular usage).

## Corporate Tax Saving

In the tax literature, the tax saving, tax planning, tax optimization and tax aggressiveness are often used interchangeably, Christine (2014) and all refer broadly to attempts by companies to reduce their tax liabilities. According to Suandy (2011), tax saving is an effort made to save and minimize tax payments legally without violating applicable rules. Hanlon and Heitzman (2010) defined corporate tax saving as a continuum of tax planning strategies with perfectly legal and low-risk strategies at one end and other strategies that entail tax evasion or tax sheltering at the other end. Given the broad range of strategies available, managers of firms may also have to decide on whether they opt for more aggressive or less aggressive forms of tax savings. Aside the direct costs of engaging in such activities, managers of firm typically have to ensure that these actions are hidden from tax authorities. There are potential costs related to strategies to minimize taxes such as implementation and transaction costs, possible penalties imposed by the tax authorities and reputation risks.

Oyemimi & Onakoya (2016) documented corporate tax strategy as any “reduction in explicit taxes”. Corporate directors have a responsibility to minimize company tax liability since a firm’s tax liability has an impact on its value. This means that to increase a company’s value, lowering their tax liabilities should be considered. There are several strategies to reduce tax liability, such as tax planning, tax saving and tax avoidance. Tax planning and tax avoidance are safer options, as they neither contravenes applicable tax regulations. Tax planning is defined as all activities

designed to produce a tax benefit (Wahab & Holland, 2012). According to Scholes and Wolfson (1992), “traditional approaches to tax planning fail to recognise that effective tax planning and tax minimisation are two different concepts. The is because, in a world of costly contracting, implementation of tax minimising strategies may introduce significant costs along non-tax dimensions. Therefore, the tax minimisation strategy may be undesirable. After all, a particularly easy way to elude paying taxes is to avert investing in profitable ventures. Thus, effective tax planning means not minimising taxes, but maximising after-tax rates of return on assets.

In the views of Lakhotia and Lakhotia (1998), explained that tax saving took minimum advantage of the exemptions, deductions, rebates, reliefs and other tax concessions allowed by tax statutes thereby leading to the lessening of the tax liability of the taxpayers. Although reducing tax can lead to higher after-tax profits, there are actual and potential costs that inhibit firms from maximising after tax profits through tax planning. In addition to direct paid costs in the form of salaries and fees, indirect paid costs can arise, for example, corporate restructuring as a necessary condition for obtaining the desired tax benefit. Potential costs can exist to the extent that tax planning can be challenged by a tax administration which can then lead to reputational costs. Empirical evidence from the US suggests that tax planning costs act as a significant constraint on corporate tax planning activities which may explain what Christine (2014) described as the under- sheltering puzzle why firms did not appear to minimise tax liabilities. Geetha (2012) defined tax saving as an arrangement made by individuals, trusts, firms or other entities of their financial affairs, to ensure that a full gain was taken regarding all exemptions relating to taxes, rebates, allowances and other benefits or reliefs allowed under the law without necessarily violating the legal provisions in any form. It is regarded as the conscious efforts and a method of clever

employment of economic affairs of an individual, trust or firm, with a view to securing the desired tax benefits, bearing in mind the legislative and judicial stand. However, tax planning does not involve taking gratuitous advantage of the loopholes intrinsic in tax legislations and administration, unlike tax avoidance, or a deliberate act to skirt tax. It is a systematic effort adopted by a tax payer to reduce his tax liability within the legal framework

Specifically, Desai and Dharmapala (2009) noted that tax saving was an activity carried out to maximize the owner's wealth. It involves a competent arrangement of financial dealings (in the boundaries of present laws) to lessen tax liability. Hoffman (1961) stated that tax planning referred to the process whereby firms identified legal methods to reduce their tax liability by capitalizing on technical loopholes in tax regulations. Tax planning, therefore, includes not only strategies that are aimed at the minimization of tax liability but also considers the cash flow effect on the business in terms of when it is most advantageous for a business to settle its tax liability without incurring any penalty. Minimizing tax liability through adequate tax planning is an act of transferring value from the state to the firm (Kiabel & Akenbor, 2014). Due to the sophisticated nature of the tax process and structures, the loopholes in tax regulations enable taxpayers gain certain tax benefits. Companies aim to reduce their income tax so as to minimize the effect it has on their income and hence, their overall value. Tax planning should be flexible and must be able to accommodate changes in applicable tax laws (Silvy, 2019).

There are many approaches that can be employed by managers in the implementation of tax saving activities. However, three common approaches to tax saving which aim to decrease tax burden are a reduction of the adjusted gross income for a given taxable year (this is where the understanding

of recent tax regulations in relation to exemptions and allowances becomes relevant), an increase the amount of tax cost (this suggests that knowledge of recent regulations and their application becomes very important. A final approach that is appropriate to effective tax planning concerns the use of tax exemptions). this includes claims relating to college expenses, retirement savings plans, and many other credits. Nonetheless, the methods do not specifically and properly describe the approach to tax planning in a future of uncertainty, as they require ease of detection by authorities. Their study suggested that in a scenario where certain strategies had been adopted by taxpayers, the authorities could gain information to aid their efforts in decreasing or preventing the option of tax planning by that exact approach. However, we provided a brief discussion of some approaches to tax saving as explained by .Curry, Hill & Parisi (2007)

## Effective Tax Saving Strategy

The firms’ effective tax rate, which is defined as some measure of tax liability divided by income, has long been used in the literature as a measure of active tax saving in both the accounting and tax literature (Dyreng, Hanlon & Maydew, 2008. Robinson & Sikes, 2006). Several authors have considered the measure of effective tax rate as the most relevant measure of the ability of the company to optimize its tax burden (Ayers, Jiang & Laplante, 2009; Chadefaux & Rossignol, 2006; Rego, 2003). The implication of this ratio is that a low effective tax rate suggests that a company conducts tax planning more aggressively than companies with higher effective tax rates. There are several variants of an effective tax rate based largely on the adjustments of the denominator. Dyreng et al. (2008) introduced **long-run cash effective tax rate,** which was the proportion of cash taxes paid to the accounting income before tax. The use of cash amount of tax paid as opposed to tax expense help to minimize the likely effects of items such as valuation

allowance and tax cushions (Dyreng et al., 2008). Minnick and Noga (2010) also argued that “cash tax measure effective tax rate takes into account the tax benefits of employee stock options, which accounting effective tax rate does not”. Besides that merit ,a long-run cash effective tax rate also uses tax information for multiple years say, 3-10 years, (Hanlon & Heitzman, 2010) which helps to eliminate the volatility in the year level measures. Lisowsky (2010), found that long-run cash was not significantly associated with tax shelter use, supporting the notion that cash effective tax rate is more oriented toward measuring general tax avoidance. The long-run cash effective tax rate is also accepted in the accounting literature as a credible method for identifying tax avoidance (Ayers, et al., 2009; Rego & Wilson, 2012).

## Cash Effective Strategy

Cash effective tax rate is another developed variant of the effective tax rate (Dyreng et al, 2008; 2010). Like the effective tax rate, cash effective tax rate is a tax rate estimate based on financial statement information. However, cash effective tax rate includes taxes paid in the numerator and pre-tax income adjusted for extraordinary items and discontinued operations in the denominator. More importantly, cash effective tax rate is meant to be the average of values over several periods so as to smoothen the measurement error resulting from timing differences in instalments, refunds, tax settlements, etc. There is also the current effective tax rate (Ayers, et al., 2009) which is slightly different from accounting effective tax rate. It is calculated as the current-year tax expense to the total accounting income before tax. It reflects the tax deferral strategies of a firm by using the current income tax as against the total tax expense, hence, its advantage over the accounting effective tax rate. ( Salihu 2014).

## Income Effective Tax Saving Strategy

Income effective tax also known as book tax difference (BTD), is another common proxy for tax aggressiveness. This is computed as the difference between book and taxable income. Estimating taxable income is typically accomplished by grossing up current tax expense using the statutory rate. Some evidence suggested that BTDs were positively associated with tax shelters (Wilson

,2009) while other studies suggested that BTDs were a good measure of aggressive tax planning. This is based on the assumption that managers prefer tax strategies that reduce income tax expense. Research generally adopts the view that firms’ tax and financial accounting choices are fairly independent. Following this view, it appears that BTDs should provide some information about corporate tax avoidance behaviour. Nevertheless, BTDs conceptually do not necessarily reflect tax avoidance, especially if the over-reporting of book income (“earnings management”) is the primary cause of a BTD. As valid tax outcomes are much harder to derive than e.g., earnings quality characteristics, the great challenge for tax research is to accurately document the tax-related part of a BTD (Hanlon & Heitzman 2010). Moreover, the existence of firm-specific characteristics independent of aggressive tax or book reporting may further complicate the use of BTDs as a proxy for tax aggressiveness (Wilson, 2009). While caution is thus advisable, there is nevertheless considerable evidence indicating that large positive BTDs might serve as a useful signal of tax avoidance. Considering that both financial and tax income are ultimately based on the same underlying economic transactions, tax authorities might view large gaps between the book income and the taxable income as a sign of potential tax aggressiveness.

The effective tax rate -based measures have two important limitations. First, because total tax expense comprises current and deferred taxes, the book effective tax rate fails to account for tax

aggressiveness associated with temporary book-tax differences because decreases in current tax expense are offset by corresponding increases in deferred tax expense. Second, both the book effective tax rate and current book effective tax rate may understate a firm’s level of tax aggressiveness if the firm records contingencies associated with uncertain tax benefits that arise from taking aggressive tax positions (De Waegenaere, Richard & Jacco, 2011).

## Non-Debt Tax Saving Strategy

De Angelo and Masulis (1980) found that depreciation, investment tax credits and deferred tax losses could be against taxes like debt interest. Moreover, it could reduce the cash outflows and decrease the financing needs of enterprises so as to cut down the costs of capital. Thus, such non

- debt but equally having a tax credit factor is called non - debt tax shield. The non-debt tax shield has a certain alternative effect on debt. It can make up for the problem of a debt tax shield, and it has been used by most governments as tax incentives. An alternative explanation for the underleverage puzzle can be that debt is squeezed out by different substitutes or non-debt tax shields. some examples of such non-debt tax shields include investment tax credits, or loss carry forwards. Companies have significant incentives to permanently defer or avoid taxes, usually without transparency, and they may prefer alternative tax shields to debt for different reasons.

Kolay, Schallheim and Wells (2013) affirmed that,\* refers to what? they are less costly. In this regard, while debt requires costly interest payments, numerous non-debt tax shields do not require any additional outlays for the firm. Secondly, they do not restrict the firm through debt covenants, which are likely to generate high transaction costs. Thirdly, non-debt tax shields frequently exploit

provisions in the accounting rules that allow the firm to reduce taxes without affecting the income statement, thus favouring accounting earnings management.

Finally, some alternative debt tax shields have a relatively larger return per naira invested, especially with the proliferation of thin capitalization rules.

## Debt Tax Saving Strategy

Debt tax shield is defined as the practice where the capital structure of a company reflects more of debt than equity ( Farrar & Mawani, 2008). In other words, the financing pattern is tilted largely towards the direction of debt than equity. However, this pattern of corporate financing has some effect on what the company declares as profit that is then taxable. In a number of countries, the corporate tax policy is such that allows for interest payable or paid deductions before profit is then computed. What this means is that companies with high debt levels will pay more interest and this further reduces the available profit to be taxed. Thus, what the thin capitalization rule does is to implement a so-called debt-to-equity ratio. Graham and Tucker (2006) posed an upper limit to internal debt that can be tax deductible for a given level of equity (Farrar & Mawani, 2008; Egger, Keuschnigg, Merlo & Wamser, 2014). According to the International Monetary Fund (IMF, 2014), thin capitalization rules often operate by limiting, for the purposes of calculating taxable profit, the amount of debt that can give rise to deductible interest expenses.

The intentional debt focused structure causes a company to pay a high amount of interest expenses. Since the tax regulation typically allows interest expenses to be tax-deductible, the income of the company that is subject to taxation can be lowered. As a consequence, by using this strategy, a company’s tax burden will also be reduced. Accordingly to the use of higher levels of debt when

compared to equity, has an effect on taxation such that enterprises with high debt funding would enjoy tax reliefs on interest charges, unlike dividend. This is so as interest is exempt from tax and charged until the borrowing company's profit is calculated. This makes debt funding more appealing to related businesses with the goal of transferring income for tax avoidance purposes. Regarding the effect of the costs of debt, the choice between debt and equity financing has been characterized in a context in which firms choose their optimal debt levels by balancing the pros and cons of attaining it ([Frank & Goyal, 2008](https://www.sciencedirect.com/science/article/pii/S1138489118300037#bib0095)). Prominent among the benefits of using debt financing are the tax savings that are generated due to the interest’s deductibility.

## Audit Committee Size.

One sub-committee of the board of directors that is saddled with the responsibility of effective corporate governance in an organization is known as audit committee. Hossain and Khan, (2006) defined audit committee as a sub-committee in the board of directors that arranged for an audit. They are chosen from the board of directors whose responsibility is to ensure auditors' independence (Moses, Ofurum & Ogbe, 2016). Therefore, audit committee size is the number of people chosen from the shareholders and directors to plan for the audit of an organization. Most laws require the provision of an equal number of directors as well as an equal number of owners of the company’s shareholders to run the audit committee (Hussaini & Gugong, 2015). The exact number of an audit committee (audit committee size) according to Moses (2016), is particularly important because of the fact that it influences the commitment of the members to check management and also detect their unpleasant behaviour.

Furthermore, CAMA (Companies and Allied Matters Act) 2004 required all publicly owned companies to have an audit committee with a maximum number of six (6) members equally

represented from the owners of the company shareholders and the directors (Hussain & Gugog, 2016). However, the technical competence, the composition as well as the role of the audit committee differ from country to country although the main aim which is to address the weaknesses of poor financial reporting and the prevention of corporate failures remains the same. According to Ayemelu and Elijah (2015) a large audit committee may play an important role in reducing the occurrence of earnings management.

In Nigeria, the Companies and Allied Matters Act of 1999 as modified in 2004 stipulated “that the Audit Committee of a public limited liability company should be composed of a maximum of six members representing an equal number of directors and shareholders” (Amartei, Mei Yu & Chukwu-lobelu, 2019) noted that an effective audit committee size was important if efficient corporate financial reporting was to be obtained. Because a large number of audit committee members could produce useful knowledge and experience to embark upon the provision of an enhanced economic disclosure quality.

## Company Income Tax in Nigerian; An Overview

The Nigerian tax system dates back to 1904. However, the modern tax system was introduced into Nigeria even before the amalgamation of the country by the colonial masters. It was later implemented through the Native Revenue Ordinances to the Western and Eastern regions in 1917 and 1928, respectively. Since then, the Nigerian tax system has undergone several amendments, reforms and revisions, and different governments and regimes have continued to try to improve on It (Musa, 2014). The Nigerian tax system is basically structured as a tool for revenue generation and consist of personal income tax, value added tax, corporate income tax, capital gain tax, petroleum profit tax and education tax. However, in this study we were specific about company income tax since we intended to explore listed companies’ information for analyses.

According to Simeon et al (2009), the principal corporate income tax measure is the effective tax rate that a company pays if it complies with its country’s laws, it is defined as the actual corporate income tax owed by the company relative to pre-tax profits. In Nigeria, a company’s income taxes are chargeable on the income of all companies operating in Nigeria except those that are specifically exempted by the enabling Act. Company taxation is administered by the Federal Inland Revenue Service using the Company’s Income Tax Act (CITA).

Company income tax is currently charged at the rate of 30% for companies which have more than N100 Million Naira turnover. It is also charged at the rate of 20% for companies with a turnover between N25 Million and N100 Million. The tax is assessed on a preceding year basis (i.e., tax is charged on profits for the accounting year ending in the year preceding assessment). The companies which have less than N25 Million turnover are not liable to pay company income tax

in line with the Finance Act of 2019. With respect to business profits, a non-resident company that has a fixed base or a permanent establishment (PE) in Nigeria is taxable on the profits attributable to that fixed base. As such, it is required to register for company income tax and file its tax returns. (Olufunke, 2012).

## Allowable Deductions Under Company Income Tax Act 2004

In ascertaining the profits under the Company Income Tax Act, there are certain deductions that are allowable which managers can explore to reduce taxable income (Musa, 2014). Section 24 of the Company Income Tax Act fully encapsulates the deductions allowable in determining the taxable profits of the company. Section 24 includes the following categories of deductions:

1. Any sum payable by way of interest on any money borrowed and employed as capital in acquiring the profits;
2. Rent for that period and premiums for the liability which was incurred during that period, for example land or building occupied for the purposes of acquiring accommodation occupied by employees of the company.
3. In the case of any property-holding company, expenses attributable to the maintenance of the property, directors' remuneration which shall not exceed N10,000 per annum in respect of each director, and the number of directors to be so remunerated shall in no case exceed three;
4. Any outlay or expenses incurred during the year in respect of salary, wages, or other remuneration paid to the senior staff and executives cost to the company of any benefit or allowance provided for the senior staff and executives which shall not exceed the limit of the amount prescribed by the collective agreement between the company and the employees.
5. Any expenses incurred for the repairs of premises, plant, machinery or fixtures employed in acquiring the profits.
6. Bad debts incurred in the course of a trade or business proved to have become bad during the period for which the profits are being ascertained.
7. Any contribution to a pension, provident or other retirement benefits fund, society or scheme approved by the Joint Tax Board under the powers conferred upon it by Paragraph (g) of Section 85 of the Personal Income Tax Act.

(i) In the case of profits from a trade or business, any expense or part thereof

Section 25 and 25A of CITA also provided for deductions from donations made to fund body or institutions in Nigeria for the purpose of ascertaining the profits while Section 26 of the Act permits a deduction for the purpose of research and development, provided such a deduction does not exceed 10% of the profit ascertained before any deductions.

## Corporate Tax Saving Strategy and Firm Value

Tax planning/saving activities lead to significant tax saving, Mills and Erickson (1998) found out that one dollar of corporate investment in tax planning was associated with four dollar of tax saving. Therefore, shareholders may interpret information regarding a firm’s tax minimization activity as a positive signal that firm management is acting in their best interest. Tax minimization strategies are however, also associated with significant costs such as expected penalties, planning agency and reputation costs. Hence, the overall effect on a firm’s value is unclear. Hanlon and Slemrod (2009) developed a simple model of the market reaction to the news of tax sheltering which could results in lost tax savings and penalties if detected. The market reaction depends on the characteristics of the firm: increasing effective tax rates and the level of governance increases a potential positive reaction while increasing contact with customers increases a potential negative

reaction. Some papers use an event study methodology to check stock price reactions to the news about corporate tax minimization. Lisowsk, Robinson and Schmidt(2013) studied the market reaction of unrecognized tax benefits according to which have been shown to be positively correlated with firms’ tax sheltering activities.

Both studies reported that the market seemed to view the contingency account positively, it was is consistent with a positive perception of tax planning activities. In contrast, Hanlon and Slemrod (2009) reported negative short-term stock market reactions in response to the news of a firm’s tax sheltering activity. A negative reaction was in line with the results by Desai et al. (2007) and Mironov (2013), which showed that firm value could soar with an increasing tax enforcement. The authors emphasized that firm structures used for tax planning were also used for managerial diversion. Moreover, Kim et al. (2011) found that aggressive tax planning could increase stock price crash risk while Guenther, Matsunaga and Williams (2016) find that tax risk was positively correlated with firm risk. Hence, a high tax risk could negatively affect market reactions to the news of tax avoidance.

**2.4. Moderating Effect of Audit Committee Size on Tax Planning and Firm Value Nexus** The audit committee can play an important role in improving managers’ accountability. According to the Sarbanes-Oxley Act (2002), audit committees can better ensure the quality of information. due to the presence of independent directors and financial experts on the audit committee who substantially improve the committee's efficiency in monitoring and controlling financial information and external audits. The independent directors and financial experts are supposed to be high calibre personnel with strong incentives to monitor financial reporting (Klein, 2002). Furthermore, the role of the audit committee is to ensure that shareholders’ interests are properly protected against financial information. One of the main tasks of the audit committee is to monitor

and ensure the objectivity and independence of external auditors in order to alleviate management pressure on accounts and improve the transparency of financial statements (Beasley, Carcello, Hermanson & Neal, 2010). In addition, Yang and Krishnan (2005) showed that audit committee size negatively correlated with earnings management, it implied that an audit committee with the minimum number of members could be relevant to financial information quality. Indeed, when the audit committee is large, control and accounting processes and financial monitoring functions increase. Similarly, Anderson, Mansi, and Reeb (2004) found that large committees were likely to protect and control the accounting and financial processes by providing greater transparency in financial reporting. Therefore, a very large audit committee could greatly diffuse responsibilities.

Complex and risky tax planning is a source of management opportunism. Audit committee members are the only ones able to identify and evaluate risky tax strategies. In addition, these directors are likely to focus on aggressive tax planning which can affect their professional reputation. Audit committee members are expected to solve problems related to the complexity of financial information, the assessment of subjective accounting policies, understanding auditors’- decisions, and the quality of financial reports. In the United States, for example, Dhaliwal, Naiker and Navissi (2010) found a negative relationship between the presence of fully independent audit committees and accounting fraud. The expertise of the audit committee is associated with improving earnings quality and more conservative financial information. Carcello and Neal (2003) examined whether independent audits could exercise power over management and help auditors resist pressure from management. The authors indicated that when the proportion of independent audit committees was greater, they were more effective in monitoring management.

Robinson, Xue, and Zhang (2012) showed that companies with high-level audit committees were associated with a high level of tax planning (the audit committee plays a role as both adviser and controller of tax planning activities). They also pointed to the importance of the role of the audit committee in reducing aggressive tax planning risk. McGuire, Omer and Wang (2012) indicate that companies with highly expert independent audit committees engaged in more tax planning. In addition, tax planning services provided by the audit committee could have a positive effect on firm value if investors perceived that tax planning was effective (the benefits of tax savings outweigh the potential costs of these tax strategies.) and had no negative effect on financial transparency. Therefore, that could increase the firm value.

In the U.S, Sox Article 202 required audit committees to carefully assess whether tax services were performed by independent auditors. The arguments revealed that tax services could lead to more effective tax strategies that served shareholders’ interests. If services provided by the audit committee are not in line with tax compliance, tax planning does not favour shareholders. In addition, a 2003 report on Enron by US Congress of the Joint Committee on Taxation identified more than a dozen complex transactions that had no commercial purpose other than to increase profits and reduce taxes. The ability of independent experts on the audit committee to effectively use tax planning services and shape tax strategies was confirmed by research which indicated that experts on the committee were there for their high-quality financial information (Dhaliwal et al., 2010). Notably, Dhaliwal et al. (2010) showed that the audit committee could help businesses achieve significant tax savings through optimal tax strategies by simultaneously trying to minimize pension management. In conclusion, tax planning services provided by the audit committee depend on the perception of risks associated with this market strategy. In other words, if investors perceive tax planning services provided by the audit committee as legitimate and not undermining firm

transparency (on the one hand, facilitating tax planning and, on the other, mitigating e.g, aggressive tax planning), firm value can increase. Conversely, if these services are meant to create opportunistic management behaviour, then they may adversely affect firm value.

## Empirical Review

Ebubechukwu and Obada (2021) examined the effect of tax planning on performance of Nigerian listed firms. This study employed ex post facto design and drew the population from foods and beverage firms. Simple and stratified sampling techniques were employed to select six foods and beverage firms in Nigeria while regression analysis was used to test the hypothesis with the aid of E-view 9.0. From the result of the analysis, effective tax rate (ETR) showed no significant effect on performance. On that note, the researchers recommended that Nigerian food and beverages firms should engage the services of tax consultants to manage their tax computations and remittances

Vu and Le (2021) examined the effect of tax planning on the firm value of non-financial firms listed in Vietnam it was moderated by the state ownership. In that study, effective tax rate was used to measure tax planning; the state ownership was measured by the percentage of state equity holdings, and firm value was measured by Tobin’s Q. The data for the study were collected from audited financial statements and other statistical documents of 513 firms during the period 2015 to 2019. Regression analysis with generalized least square shows that tax planning has a negative effect on firm value.

Omesi and Appah (2021) investigated the effects of corporate tax saving\ planning on firm value of listed consumer goods companies in Nigeria for the period 2015 and 2019. The study employed ex post facto and correlational research design on a sample size which comprised of twenty-six companies determined by Taro Yamen’s formula. The data for the study were obtained from

published annual financial statements of the sampled companies while the pooled ordinary least square was used for the data analysis. The results revealed that a negative and an insignificant relationship existed among effective tax rate, tax savings, capital intensity and corporate firm value. The study concluded that tax planning (effective tax rate and tax savings) did not affect the value of a firm. Hence, the paper recommended among other things, that companies should put in place appropriate tax planning strategies that would help decrease their tax liabilities in order to improve their overall corporate value.

Usman, Okaiwele and Asuquo (2020) examined the relationship among corporate tax planning, board compensation and firm value and the moderating capacity of board compensation on any association between tax planning and firm value. The study used a sample of 71 profitable non- financial and non-oil and gas firms publicly listed on the Nigerian Stock Exchange (NSE) for financial years covering 2008 to 2015. Using the generalised least square (GLS) regression, the result showed that there was a positive relationship among tax planning, board compensations and firm value, while board compensations failed to moderate the relationship between tax planning and firm value.

Bhagiawan And Mukhlasin (2020) examined the effect of tax planning on firm value with the moderating influence of corporate governance including board size, board independence, audit quality, board gender diversity and audit committee size. The research was conducted on manufacturing companies listed on the Indonesian Stock Exchange (IDX) for the period 2016- 2018, with 266 observational data. The results of the regression analysis proved that tax planning had a positive effect on firm value. Other regression analysis results, gender diversity board of directors and audit committee size weakened the relationship between tax planning and firm value.

However, board size, board independence, and audit quality did not affect tax planning in relation to firm value

Oyeshile and Adegbie (2020) evaluated the effect of corporate tax planning on the financial performance of listed food and beverages firms in Nigeria, with a population comprising 15 listed food and beverages firms for a ten-year period, between 2008 and 2018. The study employed the ex-post facto research design together with regression analyses. They showed that the corporate tax planning variables of effective tax rate, capital intensity and thin capitalization did not have a significant positive effect on the financial performance of listed food and beverages firm in Nigeria. The analysis revealed that (a) all proxies for corporate tax planning practices do not significant affect return on capital employed. (b) All proxies for corporate tax planning practices had a significant positive effect on return on assets. (c) All proxies of corporate tax planning practices have no significant effect on return on equity Similarly, the result shows all proxies for corporate tax planning practices did not have a significant positive effect on earnings per share Thus, the author concluded that corporate tax planning proxies for effective tax rate, capital intensity and thin capitalisation, had a significant positive effect on the performance of quoted food and beverages firms in Nigeria which were dependent on the performance measure.

Umeh, Okegbe and Ezejiofor (2020), assessed the effect of tax planning on the firm value of listed consumer goods firms in Nigeria. The specific objectives were to: determine the effect of effective tax rate (ETR) on firm value and ascertain the effect of book tax differences (BTDs) on firm value. The ex-post facto research design was adopted for the study. A sample size of 21 firms was selected based on the availability of financial statements of the selected firms from the population of all the non-financial firms listed on the Nigerian Stock Exchange. The data for the study were obtained from annual published financial reports which covered a period of ten years (2009-2018). Ordinary

lease square regression revealed that effective tax rate (ETR) impacted negatively on firm value. However, the study found that book tax difference (BTD) impacted positively on firm value, but the impact was not statistically significant.

Joseph, Ben-Caleb, Adedoyin and Uche (2020) investigated tax saving\*\*\* behaviour of firms in Nigeria with the objective of finding out how it affected firm size. The ex-post facto research design was employed and secondary data were obtained from annual reports of firms listed on the Nigerian Stock Exchange. Descriptive statistics and regression analyses were conducted. The result revealed that interest on tax savings behaviour and depreciation savings behaviour have negative significant relationship with firm size while effective tax rate had a negative but an insignificant relationship with firm size. The authors recommended that tax regulatory authorities should beam their searchlight on the tax aggressiveness of small sized companies as a strategy to reduce tax evasion while encouraging appropriate tax savings strategies to ensure tax compliance. Odunayo and John (2019). investigated the relationship between corporate tax planning and financial performance of quoted non‐financial companies. Secondary yearly data were gathered from 47 sampled non‐financial companies for the period 2007 and 2016. A panel vector autoregressive approach with a structural analysis such as variance decomposition and impulse response function were adopted. The results of the study revealed that tax savings had a direct relationship with financial performance while tax avoidance had an inverse relationship with financial performance. The financial variables under consideration mainly contributed to their own shocks or forecast errors. The responses of financial performance to shocks in tax avoidance had an expansionary effect which could hinder the performance of the companies, while financial performance response to shocks in tax savings had a contractionary effect and, as such, could lead

to a better performance of the companies. Thus, corporate tax planning that enhanced tax savings, greatly contributed to the performance of non‐financial companies. It was recommended that managers should not only engage in tax planning, but should also ensure that their tax planning was legal, and it led to tax saving for the company’s such that no excessive or multiple tax would be paid and hence, a better financial performance would be achieved.

Silvy (2019) aimed to empirically examine the effect of tax planning on firm value. The population of the study consisted of manufacturing companies listed on the Indonesian Stock Exchange (IDX) for the period 2014 to 2016. 43 respondents were chosen using purposive sampling. The hypotheses were tested using multiple regressions with E-views software to determine the relationship that existed between each independent variable and firm value. The empirical results showed that tax planning that is measured by cash effective tax rate had a negative effect on firm value, while tax planning measured by effective cash rate and tax savings had no effect on firm value. The study recommended the need for firms to institute more robust tax planning practices that would help reduce their effective tax liabilities and therefore improve their overall value.

Teja (2019) provided evidence on how firm usage of debt tax shield and non-debt tax shield changed when tax rates changed in Indonesia. A multivariate regression analysis was performed with non-debt tax shield as a dependent variable, and tax rates changes and debt level were the independent variable. A multivariate regression analysis was conducted on 73 Indonesian firms with 146 observations for the period 2008 to 2010. Within that period, Indonesian corporate tax rate was reduced twice from 30% in 2008 to 28% in 2009 and 25% in 2010. The study found that when tax rates decreased, the public firms increased their usage of a non-debt tax shield with a lag

of one year. Debt financing remained high alongside non-debt tax shield. The findings complicated debt tax shield and non-debt tax shield.

Gatot (2018) examined the level to which corporate tax avoidance activity was valued by investors in a large sample of Indonesian firms. The risk minimization perspective of corporate tax avoidance suggested that such activities, especially aggressive tax strategies could diminish firm value as investors saw them as risky strategies. Under cash flow maximization perspective, however, corporate tax avoidance is considered as a value-enhancing activity as it could increase firm value through tax saving. Based on a sample which consisted of 1,023 firm-year observations, made up of 244 unique firms over the period 2006-2015, the author found that tax avoidance strategies – proxied by long run GAAP effective tax rates and cash effective tax rates – were negatively associated with firm value. It lent credence to the risk minimization motive.

Razali, Ghazali, Lunyai and Hwang, (2018), determined the impact of tax planning on firm value of firms listed in Bursa Malaysia. The tax planning proxies in their study were effective tax rate and book tax differences. A sample of 387 firms’ data were collected from DataStream covering the period 2014 and 2016. After controlling for firm size, leverage, asset tangibility, firm age and dividend, the regression results showed that effective tax rate had a significant and positive relationship with firm value while book tax difference had an insignificant negative relationship with firm value. Firms with less tax planning activities may signal investors that the firm is more transparent in publishing its financial information.

Nwaobia, Kwarbai and Ogundajo, (2018) examined the impact of tax planning on firm value. Ex- post facto research design was adopted on 50 firm-year observations for the period 2010-2014. The data were drawn from the published financial statements of the sampled companies and analysed using inferential statistics and regression analyses. The joint effect of the considered tax

planning proxies on firm value was significant. While effective tax rate, dividend and firm age were positively related to firm value, firm size, leverage and tangibility exerted a negative effect on firm value. The study concluded that a wholistic approach to tax planning and optimal mix of tax planning strategies were important determinants of firm value.

Salawo, Ogundipe and Yeye (2017) investigated corporate tax planning and firm value of non- financial firms listed on the Nigerian Stock Exchange for the period 2004 to 2014. The study employed ex post facto and correlational research design with a population of one hundred and fifty-one (151) and a sample of fifty (50) companies using the stratified sampling technique. The study used secondary sources of data obtained from published financial statements of the sampled companies. The data collected were analysed with econometric models such as stationarity test, panel co integration test and vector auto regression and granger causality. The dependent variable was (Tobin Q) while the independent variable was (tax planning). The result showed that there is a significant non-directional causality between tax planning and firm value.

Tang Tang, Mo & Chan(2017), examines the value implications of tax avoidance of 42,107 firm- year observations from 46 countries over the 2001-2010 period. Firm value is measured by Tobin’s

Q. Tax avoidance was considered to be the consequence of tax planning and it was measured by an effective tax rate. Overall, the results suggested that tax avoidance created value for shareholders, and the value of tax avoidance was driven by heterogeneous agency costs associated with different institutions. However, no evidence of the association between aggregate earnings quality and tax avoidance was found**.**

Salawu, Ogundipe and Yeye (2017) examined the causal relationship between corporate tax planning and firm value of non-financial listed companies in Nigeria for the period 2004 and 2014.

A panel data of 50 non-financial quoted firms spread across ten sectors were collected from the audited annual financial reports of the sampled firms and the Nigerian Stock Group Fact Books. The pairwise VAR Granger Causality test conducted between tax planning and firm value showed that there was no causality between tax planning and firm value within the sampled period at 5% level of significance. It implied that tax planning did not granger causes firm value and vice-versa. The result indicated that causality did not run in any direction between tax planning to firm value.

Blaufus, Möhlmann and Schwäbe (2016) investigated whether corporate tax minimization increased firm value. They analysed stock price reaction to the news concerning corporate tax avoidance or evasion. A hand-collected dataset included 139 tax news items regarding listed German firms over the period 2003 to 2014. The result showed that stock market responses differed significantly between news items concerning legal and illegal activities. The study found negative abnormal returns for tax evasion news and positive abnormal returns for tax avoidance news. The results did not indicate any reputation effect of a legal tax minimization.

Ilaboya, Izevbekhai and Ohiokha (2016), in their study, reviewed extant literature that concerned tax planning and firm value. They argued that companies were always looking for means of reducing their corporate tax liabilities and that has led to high-level corporate fraud involving tax evasion in both developed and developing countries.

Nwaobia, Kwarbai and Ogundajo (2016) conducted a study on the effect of tax planning on firm value of listed consumer goods industrial sector in Nigeria for the period 2010 and 2014. Their study employed the ex post facto research design with a population of 80 listed consumer goods

firms but a sample consisting only of ten (10) firms. The data for the study were obtained from published financial statements and accounts of all ten companies for the period under review. The data obtained were analysed using descriptive and inferential statistics. Which suggested a positive significant association between effective tax rate and firm value.

In Indonesia, Lestari and Wardhani (2015) analysed the impact of tax planning on firm value with board diversity as a moderating variable. The research was conducted for non-banking and financial firms on the Indonesian Stock Exchange for 2010-2011. The results showed that firstly, a positive relationship existed between tax planning and firm value. Second, they found evidence that board diversity (age and board size of member director) could increase the positive influence of tax planning on firm value. Finally, the results of the sensitivity test with the full model and the full sample suggested that tax planning had a robust positive effect in increasing firm value. Tax planning and firm value were consistent but other variables of board diversity (age) were not consistent.

Nanik and Ratna (2015) carried out a research in order to analyse the impact of tax planning on firm value with the moderating variable of board diversity. The research was piloted on non- banking and financial firms listed on the Indonesian Stock Exchange for 2010-2011. They opined that tax planning had a robust positive effect on increasing firm value. The moderating influence of board diversity on the relationship between tax planning and firm value was consistent but other variables of board diversity such as age were not consistent.

Christine (2014) investigated the effect of tax avoidance on the financial performance of all companies listed on the Nairobi Securities Exchange. Casual predictive research design was used together with regression analyses techniques. The author concluded that tax planning had a negative and significant impact on value.

Ftouhi, Ayed and Zemzem (2010), in their study on ‘Tax planning and firm value: evidence from European companies’ employed regression analysis model (Generalized Least Squares (GLS) regression). Tobin’s q model was adopted to examine the relationship between firms’ value and tax planning with firm size, leverage, capital intensity, dividend and earnings management as control variables. The study found that tax planning could be considered as steps taken by taxpayers to reduce the tax liabilities in obtaining tax saving benefits. However, a correlation analysis revealed that there was a significant negative relationship between tax planning and firm value.

Kawor & Kportorgbi (2014) examined the effect of tax planning on firms’ market performance in Ghana using 22 non-financial companies listed on the Ghanaian Stock Exchange between 2000 and 2011. The study found out that as tax rates increased, firms intensified tax planning activities. Firm performance, sales growth and firm size were found to be positively associated while firm’s age and financial leverage were negatively associated with firms’ market performance.

Danielle, Thomas and John (2013) examined whether a firm’s business strategy was associated with its level of tax avoidance. The authors also investigated the association between a firm’s business strategy and the extent to which it avoided tax in an aggressive manner. To identify firms’

business strategies, they use a comprehensive measure of business strategy based on the theoretical framework by Miles and Snow (1978, 2003). They found that firms which followed Miles and Snows’ prospector (innovation and risk seeking) strategy avoided more taxes than both defender firms (cost leadership and risk aversion)

Wang (2010) examined the relationship among tax avoidance, corporate transparency and firm value. The author used effective cash rates and permanent book-tax difference to measure tax avoidance with Tobin’s q as a proxy for firm value using S & P 500 firms during the period 1994- 2001. The author found a positive significant relationship between tax avoidance and firm value.

Desai and Dhamarpala (2009) investigated the relationship between tax avoidance activities and firm value using a sample of 862 U.S firms. In the research, tax avoidance was measured by book- tax gap while Tobin’s q was the proxy for firm value. They found no significant direct relationship between tax avoidance activities and firm value. The reasons for the indirect and insignificant relationship were the complex nature and tax implications of the transactions; hence, it became difficult for stakeholders to evaluate the performance of the firms fully.

Desai and Hines (2002) provided evidence on the firm performance and tax planning behaviour of firms. Furthermore, the study investigated the relationship between tightening of tax systems and the market value of firms. The study which was based on 850 listed US firms employed the purposive sampling technique to reflect the characteristics desired by the researchers. The Correlative-description design was adopted. Simple regression and t-tests were used to establish the relationships. The authors established that intensive tax planning was associated with higher

firm performance. The study also reported that tightening of the tax system was positively associated with a higher market performance of firms.

Desai and Dharmapala (2007) provided a comprehensive study that incorporated tax planning, corporate governance and firm performance. The study used 4,492 observations on 862 firms over the period 1993 to 2001. Firms performance was measured using Tobin’s Q Governance quality was proxied by the level of institutional ownership. Tax planning was measured by inferring the difference between the income reported to capital markets and tax authorities. Two analysis models were adopted—the OLS model and the IV estimation model. The OLS results showed that the average effect of tax planning on corporate performance was not significantly different from zero. In other words, there was no relationship between tax planning and firm performance. The study however, reported a positive association between tax planning and performance for well- governed firms. The authors concluded that corporate governance mediated tax planning-firm performance relationship.

Abdul-Wahab (2010) sought to establish a relationship between tax planning savings of firms and their value. The study simultaneously investigated the moderating influence of corporate governance. The authors employed 240 firms listed on the London Stock Exchange from 2005 to 2007. Tax planning was proxied by the difference between the effective tax rate of the entities and the applicable statutory tax rates. Firm value was represented by Tobin’s Q and analyzed using the regression analysis model. The results indicated a negative relationship between firm value and tax planning activities. The study suggested that the tax planning cost and risks associated with tax planning had the potential of derailing the benefits that should have accrued to shareholders.

Seyram & Holy (2014) ascertained the level of firms’ tax planning and explored the relationship between tax planning and firms’ market performance. The study used 22 non-financial companies

listed on the Ghanaian Stock Exchange. Longitudinal correlative design indicated that firms’ tendency to engage in intensive tax planning activities reduced when tax authorities maintained low corporate income tax rates. Second, tax planning had a neutral influence on firms’ performance. It concluded that investors must institute systems to ensure that tax planning benefits reflected significantly in their pockets.

## Webometric Analysis of Reviewed Empirical Literature

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| --- | --- | --- | --- | --- | --- |
| **Author/s and Date of publication** | **Objectives** | **Mar ket Stud**  **ied** | **Statisti cal Tool** | **Findings** | **Conclusion/ Recommendations** |
| Ebubechukwu | Examined | Nige | Regress | From the result of the | On that note, the |
| and Obada | the effect of | ria | ion | analysis, effective tax rate | researchers recommended |
| (2021) | tax planning |  | analysis | (ETR) had no significant | that Nigerian firms should |
|  | on the |  |  | effect on performance of | engage the services of tax |
|  | performance |  |  | Nigerian food and | consultants in managing |
|  | of Nigerian |  |  | beverage firms. This | their tax computations |
|  | corporate |  |  | meant effective tax | and remittances |
|  | firms. |  |  | savings to generate firm |  |
|  |  |  |  | performance, and firms |  |
|  |  |  |  | with a high tax saving |  |
|  |  |  |  | value performed better. |  |
| Vu and Le | Examined | Viet | Regress | Regression analysis with |  |
| (2021) | the effect of | nam | ion | GLS showed that tax |
|  | tax the on |  | analysis | planning has a negative |
|  | the firm |  | with | effect on firm value. |
|  | value of the |  | GLS |  |
|  | non-financial |  |  |  |
|  | firms listed |  |  |  |

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|  | in Vietnam and moderated by state  ownership |  |  |  |  |
| Omesi and | Investigated | Nige | Pooled | The results obtained from | Hence, the authors |
| Appah (2021) | the effects of | ria | ordinar | the analysis revealed that | recommended, among |
|  | corporate tax |  | y least | a negative and an | other things that |
|  | saving\ |  | square | insignificant relationship | companies should put in |
|  | planning on |  |  | among effective tax rate, | place appropriate tax |
|  | firm value of |  |  | tax savings and capital | planning strategies that |
|  | listed |  |  | intensity on corporate | would help decrease their |
|  | consumer |  |  | firm value. | tax liabilities and |
|  | goods |  |  |  | therefore, improve their |
|  | companies in |  |  |  | overall corporate value. |
|  | Nigeria for |  |  |  |  |
|  | the period |  |  |  |  |
|  | 2015 to 2019 |  |  |  |  |
| Usman, | Examined | Nige | General | The result showed that | Furthermore, as regards |
| Okaiwele and | the | ria | ised | there was positive | the control variables, firm |
| Asuquo | relationship |  | Least | relationship among tax | size showed a positive |
| (2020) | among |  | Square | planning, board | and significant impact on |
|  | corporate tax |  | (GLS) | compensations and firm | firm value while there |

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|  | planning, |  | regressi | value while board | was a significant negative |
| board | on | compensations failed to | relationship between |
| compensatio |  | moderate the relationship | leverage and firm value. |
| n and firm |  | between tax planning and |  |
| value, and |  | firm value. |  |
| the |  |  |  |
| moderating |  |  |  |
| capacity on |  |  |  |
| any |  |  |  |
| association |  |  |  |
| between tax |  |  |  |
| planning and |  |  |  |
| firm value. |  |  |  |
| Bhagiawan | Examined | Indo | regressi | The results of the | Other regression analysis |
| And | the effect of | nesi | on | regression analysis prove | results, gender diversity |
| Mukhlasin | tax planning | a | analysis | that tax planning has a | board of directors and |
| (2020) | on firm value | Stoc |  | positive effect on firm | audit committee size |
|  | with the | k |  | value where these results | weakens the relationship |
|  | moderating | Exc |  | are in line with traditional | between tax planning and |
|  | influence of | hang |  | theories. | firm value. However, |
|  | corporate | e |  |  | board size, board |
|  | governance | (ID |  |  | independence, and audit |
|  | including | X) |  |  | quality do not affect the |

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|  | board size, board independenc e, audit quality, board gender diversity and audit committee  size. |  |  |  | tax planning relation on firm value |
| Oyeshile and Adegbie (2020), | Evaluated the effect of corporate tax planning on the financial performance of quoted food and beverage firms in Nigeria | Nige ria | Ordinar y Least Square regressi on | The analysis revealed that all proxies of corporate tax planning practices do not significant effect on return on capital employed of quoted food, and beverages firm in Nigeria | Thus, the research concluded that corporate tax planning proxies of effective tax rate, capital intensity and thin capitalization, has a significant positive effect on the performance of quoted food and beverages firms in Nigeria. |
| Umeh,  Okegbe and | Determined  the effect of | Nige  ria | Ordinar  y lease | This study found that  Effective tax rate (ETR) | The study therefore  recommended among |

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| Ezejiofor (2020) | tax planning on firm value in quoted consumer goods manufacturin g firms in Nigeria |  | square regressi on | to impact negatively on firm value, but this impact was statistically significant. However, the study found that, book tax difference (BTD); impacted positively on firm value, but the impact was not statistically significant. | others that since the influence of effective tax rate is statistically significant and so, should be used as a determinant of firm value in Nigeria. |
| Joseph, Ben- Caleb, Adedoyin and Uche (2020) | Investigated tax saving behaviour of firms in Nigeria with the objective of finding out how it affected firm size | Nige ria | panel data regressi on | The result revealed that interest tax savings behaviour and depreciation savings behaviour had a negative but significant relationship with firm size while effective tax rate had a negative and an insignificant relationship with firm size. | The study concluded that the lower the firm size the higher the tax savings behaviour, and vice versa, of quoted companies in Nigeria. |

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| Odunayo and John (2019) | Investigated the relationship between corporate tax planning and financial performance of quoted non‐financial companies |  | panel vector autoregr essive approac h with structur al analysis | The results of the study revealed that tax saving had a direct relationship with financial performance, while tax avoidance had an inverse relationship with financial performance. The financial variables under consideration mainly contributed to their own shocks or forecast errors. | They that therefore recommended firms should  not only engage in tax planning, but also ensure that their tax planning was legal, and led to tax saving for the companies, such that no excessive or multiple tax would be paid and hence, a better financial performance would be achieved. |
| Silvy (2019) aims to empirically examine the effect of tax planning on firm value. The  population of | Aimed to empirically examine the effect of tax planning on firm value. The population of  the research | Indo nesi an Stoc k Exc hang e | Multipl e regressi ons | The empirical results showed that tax planning that was measured by the cash effective tax rate had a negative effect on firm value, while tax planning measured by effective cash rate and tax savings | The study recommended the need for firms to institute more robust tax planning practices that would help reduce their effective tax liabilities and therefore, improve their overall value. Firms which  engaged in better tax |

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| this research consists of manufacturing companies listed on the Indonesian Stock Exchange (IDX) from  2014 to 2016. | consisted of manufacturin g companies listed on the Indonesian Stock Exchange (IDX) from 2014 to  2016. |  |  | had no effect on firm value | planning practices were likely to a get higher firm value. |
| Teja (2019) | Provided evidence on how firm usage of debt tax shield and non-debt tax shield (NDTS)  changed when tax rates change  in Indonesia. | Indo nesi a | Multiva riate regressi on | This research finds when tax rates decrease, the public firm increases their usage of NDTS with a lag of one year and debt financing remain increased alongside with non-debt tax shield. | This finding provides support to debt tax shield and DTS as a complement |

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| Gatot (2018) | examines the level to which corporate tax avoidance activity was valued by investors in a large sample of Indonesian  firms | Indo nesi an firm s |  | The author finds that the tax avoidance strategies – proxied by long run GAAP effective tax rates and cash effective tax rates – are negatively associated with firm value, which lends credence to the risk minimization motive. |  |
| Razali, Ghazali, Lunyai and Hwang, (2018), | Determined the impact of tax planning on firm value of firms listed in Bursa Malaysia. | Mal aysi a. | Regress ion | The regression results show that ETR has a significant and positive relationship with firm value while BTDs has insignificant negative relationship with firm value. | Firm with less tax planning activities may signal investors that the firm is more transparent in publishing their financial information. |
| Nwaobia, Kwarbai and Ogundajo,  (2018) | The study examined the effect of tax |  | Panel regressi on  model | While Effective tax rate (ETR), Dividend (DIV) and Firm age (FAG) are  positively and | The study concluded that wholistic approach to tax planning and optimal mix  of tax planning strategies |

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|  | planning on firm value. |  |  | significantly related to firm value, firm size, leverage and tangibility exert negative effect on firm value. | are important  determinants of their effect on firm value. |
| Salawo, Ogundipe and Yeye (2017) | Investigated corporate tax planning and firm value of non-financial firms listed on the Nigerian Stock Exchange for the period  2004 to 2014 | Nige rian Stoc k Exc hang e | Vector autoregr ession and granger causalit y | The result showed that there is a significant non- directional causality between tax planning (ETR) and Firm Value. |  |
| Tang (2017) | Examines the value implications of tax avoidance of  42,107 firm- |  |  | Overall, the results suggest that tax avoidance creates value for shareholders, and that the value of tax avoidance is  driven by the | However, no evidence of the association between aggregate earnings quality and tax avoidance is found**.** |

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|  | year observations from 46 countries over the 2001-2010  period |  |  | heterogeneous agency costs associated with different institutions |  |
| Salawu, Ogundipe and Yeye (2017) | examined the causal relationship between corporate tax planning and firm value of non-financial quoted companies in Nigeria between 2004 and  2014 | Nige ria | VAR  Granger Causalit y | This implies tax planning did not granger causes firm value and vice-versa. This result indicates that causality do not runs in any direction between Tax Planning (ETR) to Firm Value (Tobin Q). | These suggest that there is a significant non- directional causality between Tax Planning (ETR) to Firm Value (Tobin Q) meaning that the two null hypotheses are accepted. That is, there was no significant casual nexus between Tax Planning (ETR) to Firm Value (Tobin Q). |

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| Blaufus, Möhlmann, and Schwäbe (2016) | investigated whether corporate tax minimization increases firm value, they analyze the stock price reaction to news concerning corporate tax avoidance or  evasion | Ger man y |  | Their results did not indicate any reputation effect of legal tax minimization. | Conversely, the positive market reaction to tax avoidance news is associated with firms that face high reputation risk. |
| Ilaboya, Izevbekhai and Ohiokha (2016), | review extant literature that concern tax planning and firm value, in which desktop- study  methodology |  |  |  | They argue that companies are always looking for means of reducing their corporate tax liabilities and this has led to high-level corporate fraud involving tax evasion in both developed  and developing countries. |

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|  | was adopted base on the deductions from the literature  reviewed. |  |  |  |  |
| Nwaobia, Kwarbai and Ogundajo (2016) | conducted a study on tax planning and firm value of listed consumer goods industrial sector in Nigeria between 2010 and  2014 | Nige ria | Panel regressi on model | The result of the analysis suggests a positive significant association between effective tax rate, dividend and firm age on firm value. | Also, the study revealed a negative association between firm size, tangibility and financial leverage on firm value. |
| Lestari and Wardhani (2015) | the impact activities tax planning  (TP) to firm | Indo nesi a | Modera ted Regress  ion | the results of the sensitivity test with the full model and the full  sample suggested that TP | Thus, it is needful that association between tax planning activities and  firm value be investigated |

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|  | value with board diversity as moderating variable. |  |  | had robust positive effect in increasing firm value, then the moderating influence of board diversity (Bstudy and Minority) on the relationship between TP and firm value was consistent but other variables of board diversity (Age) are not consistent | to establish the prevalent direction between them. Research is not conclusive on this relationship in Nigeria |
| Lestari and Wardhani (2015) | investigated tax planning and firm value of listed non- banking and financial firms in Indonesia for the period  2010 to 2011 | Indo nesi a | Multipl e regressi on model | The result suggests that a positive association between tax planning and firm value. | Also, that board diversity increases the positive influence of tax planning and firm value. |

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| Nanik and Ratna (2015) | carried out a research in order to analyse the impact activities of tax planning to firm value with moderating variable such as board  diversity | Indo nesi a stoc k exch ange |  |  | They opine that tax planning had robust positive effect in increasing firm value, then the moderating influence of board diversity on the relationship between tax planning and firm value was consistent but other variables of board diversity such as age are not consistent. |
| Galica (2015) | examined the complexities of corporate tax planning, with a focus on tax deferral strategies employed by  United States | Unit ed State |  |  | The study included a foundational background on corporate tax havens, the benefits of deferred taxation, and an outsider’s perspective on the subject matter – namely, the difference in perception of the general public versus  that of a shareholder. |

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|  | multinational corporations, providing a financial and ethical analysis of corporate tax  entities |  |  |  |  |
| Christine (2014) | investigated the effect of tax avoidance on financial performance of all the companies listed on the Nairobi Securities  Exchange | Ken ya | regressi on techniq ue | tax planning had a negative and significant impact on the value of the firm. | He concluded that tax planning had a negative and significant impact on the value of the firm. |
| Ftouhi, Ayed  and Zemzem (2013) | Tax planning  and firm value: | Euro pean | General  ized Least | The correlation analysis  reveals that there is significant and negative | the study found that tax  planning can be considered as steps taken |

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|  | evidence from European  companies’ |  | Squares (GLS) | relationship between tax planning and firm value. | by taxpayers so as to reduce tax liability in obtaining the tax saving  benefits. |
| Kawor & Kportorgbi (2012) | examined the effect of tax planning on firms’ market Performance in Ghana’ using 22  non-financial companies listed on the Ghana Stock Exchange between 2000 and  2011. | Gha na |  | The study found that as tax rates increased, firms intensified tax planning activities. | Firm performance and sales growth and firm size are found to be positively associated while firm’s age and financial leverage are negatively associated with firms’ market performance. |
| Guenther, Matsunaga and Williams  (2012) | examined whether tax avoidance  strategies are |  |  | They  find that low tax rates tend to be more persistent than high tax rates and that | They  find that low tax rates tend to be more persistent than high tax rates and that |

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|  | associated with greater firm risk, using regression analysis developed a measure of tax risk by applying the traditional definition of risk of taxes, measured by stock return  volatility. |  |  | measures of tax avoidance commonly used in literature are generally not acceptable. | measures of tax  avoidance commonly used in literature are generally not acceptable. |
| Danielle, Thomas and John (2011) | examined whether a firm’s business strategy is associated  with its level |  |  | They found that firms following  Miles and Snows’ Prospector (innovation and risk seeking) strategy avoid more taxes than  both Defender firms (cost | They found that firms following  Miles and Snows’ Prospector (innovation and risk seeking) strategy avoid more taxes than  both Defender firms (cost |

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|  | of tax avoidance. |  |  | leadership and risk aversion) and firms following a more general  (Analyzer) strategy. | leadership and risk aversion) and firms following a more general  (Analyzer) strategy. |
| Wang (2010) | examines the relationship between tax avoidance, corporate transparency, and firm  value. |  |  | The author found a positive significant relationship between tax avoidance and firm value. | The author found a positive significant relationship between tax avoidance and firm value. |
| Desai and Dhamarpala (2009) | investigated the relationship between tax avoidance activities and firm value using a sample of 862 U.S  firms | U.S  firm s |  | They found no significant direct relationship between tax avoidance activities and firm value. | The reasons for this indirect and insignificant relationship are the complex nature and tax implications of the transactions; hence, it becomes difficult for stakeholders to evaluate the performance of the firm fully |

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| Desai and Hines (2008) | provide evidence on firm performance and tax planning behavior of  firms. | US  firm s | Simple regressi on | Desai and Hines established that intensive tax planning is associated with higher firm performance. | On the other hand, the study reported that tightening of the tax system is positively associated with higher market performance of firms. |
| Desai and Dharmapala (2007) | provided a comprehensi ve study that incorporates tax planning, corporate governance and firm performance |  | OLS  model and the IV  estimati on model | The study however reports a positive association between tax planning savings and performance for well- governed firms. | Desai and Dharmapala (2007) thus concluded that corporate governance mediates the tax  planning-firm performance relationship. The IV estimate shows a higher effect of corporate governance on firm  performance |
| Abdul-Wahab (2006) | study sought to establish a relationship between tax  planning | Lon don stoc k | panel regressi on | The results indicate a negative relationship between firm value and tax planning activities. | Abdul-Wahab (2010) explains the relationship with reference to tax planning cost and risk.  The study suggested that |

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|  | savings of firms and their value. | exch ange |  |  | tax planning cost and risks associated with tax planning have the potential of derailing the benefits that should have  accrued to shareholders |
| Seyram & Holy (2005) | ascertain the level of tax planning of firms and to explore the relationship between tax planning and firms’ market performance | Gha na Stoc k Exc hang e |  | The results indicate that that firms’ tendency to engage in intensive tax planning activities reduces when tax authorities maintain low corporate income tax rates. Secondly, tax planning has a neutral influence on firms’  performance. | This finding challenges the general perception that every cedi of tax savings from tax planning reflect in the pocket of investors. It is concluded that investors must institute systems to ensure tax planning benefits reflect significantly in  their pockets. |
| Ftouhi, Ayed & Zemzem (2004) | ‘Tax planning and firm value: evidence from | Euro pean com pani es’ | General ized Least Squares (GLS) | The correlation analysis reveals that the correlation coefficients between various independent and control variables are significant. | As control variables, the study found that tax planning can be considered as steps taken by taxpayers so as to reduce tax liability in |

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|  | European companies’ |  | regressi on |  | obtaining the tax saving benefits. |

**Authors’ Compilation (2021)**

## Theoretical Review

This project work was based on agency, political and resource based theories, however, it was supported by agency theory

## Agency Theory

The proponent of the agency theory, Desai and Dharmapala (2006) and Desai, Dyck and Zingales (2007) considered the interaction of tax planning activities and the agency problems inherent in public companies. The theory argued that obfuscatory tax planning activities could create a shield for managerial opportunism thus the diversion of rents. They posited that straightforward diversion and subtle forms of earnings manipulation could be facilitated when managers undertook tax planning activities. They believed view that tax planning had the direct effect of increasing corporate profitability and firm value only for firms with strong governance institutions. Where there are weak governance institutions, increased opportunities for managerial rent diversion dominate these effects. Tax avoidance incorporates more dimensions of the agency tension between managers and investors. According to the agency perspective of tax, the problem that needs to be solved by investors is simply managerial shirking. Avoidance also constitutes another form of the agency problem, managerial opportunism or resource diversion (Desai & Dharmapala, 2009). Desai and Dharmapala (2006) argued that complex tax avoidance transactions could provide management with the tools, masks, and justifications for opportunistic managerial behaviours such as earnings manipulations, related party transactions and other resource-diverting activities. In other words, tax avoidance and managerial diversion can be complementary.

## Resource Based Theory

Resource Based View (RBV) holds that firms can earn sustainable super-normal returns if, and only if, they have superior tangible resources that are protected by some form of isolating mechanism which prevents their diffusion throughout the industry. According to Wernerfelt and Rumelt (1984) in Christine (2014), the fundamental principle of the RBV is that the basis for a competitive advantage of a firm lies primarily in the application of the bundle of valuable resources at the firm’s disposal. To transform a short-run competitive advantage into a continuous competitive advantage requires that the resources are diverse in nature and not perfectly mobile (Christine, 2014). Essentially, the valuable resources become a source of sustained competitive advantage when they are neither perfectly imitable nor substitutable without great effort (Barney, 1991). In a nutshell, therefore, to achieve the above mentioned sustainable average returns, the firm’s bundle of resources must be valuable, rare, imperfectly imitable and not easily substitutable (Barney, 1991). The extent to which external and internal factors affect managerial discretion will depend on, among other factors, the manager’s locus of control, the perception of discretion and the amount of power that people perceive the manager to possess. Thus, tax avoidance behaviour of some firms may be explained by the RBV theory as studies have shown that large firms may avoid more tax than small firms, especially in non-state-owned firms.

## Political Power Theory

The Political cost theory which was advanced by Salamon and Siegfried (1977), maintained that larger firms held superior economic and political power relative to small firms. Larger firms take advantage of their economic and political power to lessen their tax burden as they are able to engage in aggressive tax planning and can manipulate the political process in their favour. In support of that theory, Porcalo (1986) submitted that larger firms had smaller effective

tax rates (ETRs) while Rego (2003) posited that economies of scale could significantly affect a firm’s ability to reduce its tax burden. Loretz and Moore (2009) however, argued that tax planning decisions, similar to a firm’s operational decisions, were made in a competitive environment. It implies that where tax payments made by the company deviate significantly from those of the peer group, they it, could lead to “reputational loss.” According to them, managers have to balance the benefits of reduced tax burden against the costs of a loss of reputation if they deviate too much from the behaviour of their peer group. Ambiguous results have led to a number of empirical studies. Several authors have estimated directly the size of the company's effective tax rate. Siegfried (1972) estimated such a relationship in the U.S. and although the results seemed to be influenced by a large presence of big companies in some sectors, he found a negative relationship between size (measured by assets) and effective taxation. His results were consistent with the theory of political power A similar relationship was also found by Pocarno (1986). Such a negative relationship is however, in contrast with the findings of Watts and Zimmerman (1978). They used

U.S. data in 1948-1981 and believed that in 1971, the largest fifty companies were faced with significantly higher rates of tax actual profit which confirmed a rather political cost theory. In other studies, Gupta and Newberry (1997) for the U.S. and Janseen and Buijink (2000) for the Netherlands found no strong evidence of a relationship, after using total assets to measure firm size.

## CHAPTER THREE

**METHODOLOGY**

## Introduction

This section deals with the methodology that was employed by the researcher in conducting the research work. The chapter covers the research design, population of the study, sample size, sampling technique, sources of data, method of data analysis and model specification.

## Research Design

The *ex-post facto* research design was used in the analysis of the data. This enable the prediction of possible causes behind any effects that the *ex post* events or variable should have occurred. Kerlinger (1970) noted that *ex post facto* research was one in which the independent variable or variables had already occurred and the researcher started with the observation of a dependent variable or variables. Essentially, the researcher studies the independent variable or variables in retrospect for their possible relationship to, and effects on, the dependent variable or variables.

## Population and Sample

The population of this study is made up of all non-financial companies which were listed on the floor of the Nigerian Stock Exchange Market for the period 2010 and 2019. However, as at 31st

|  |  |  |
| --- | --- | --- |
| December 2019, there were | 106 | non-financial companies listed on the floor of the Nigerian |
| Exchange Group. |  |  |
| Consumer Services Sector | = | 15 |
| Healthcare Sector | = | 10 |
| Basic Materials Sector | = | 11 |
| Consumer Goods Sector | = | 26 |
| Industrial Sector | = | 24 |
| Oil & Gas Sector | = | 13 |

|  |  |  |
| --- | --- | --- |
| Technology Sector | = | 07 |
| Total | = | **106** |

**Source:** Nigerian Exchange Group (NGX) Website, Central Bank Yearly Bulletin.

## Sample and Sampling Technique

In deriving the sample size from the total population, this study adopted Krejcie and Morgan’s (1970) sample size computation. Krejcie and Morgan's sample size calculation was based on p =

0.05 where the probability of committing type I error is less than 5 % or p <0.05. The sample size was computed below as:

S = 𝑥2𝑁𝑃(1−𝑃)

𝑑2(𝑁−1) + 𝑥2𝑃(1−𝑃)

S = 1.962 𝑋 106 𝑋 0.5 (1−0.5)

0.052(106−1) + 1.962 𝑋 0.5 (1−0.5)

S = 3.8416 𝑋 106 𝑋 0.5 (1−0.5)

0.0025 (106−1) + 3.8416 𝑋 0.5 (1−0.5)

S = 407.2096 𝑋 0.5 (0.5)

0.0025 (106−1) + 3.8416 𝑋 0.5 (1−0.5)

S = 407.2096 𝑋 0.5 (0.5)

0.0025 (105) + 3.8416 𝑋 0.5 (0.5)

S = 407.2096 𝑋 0.25

0.2625 + 3.8416 𝑋 0.25

S = 101.8024

0.2625 + 0.9604

S = 101.8024

1.2229

# S = 83.25

The above computation revealed that, with a population size of 106, the sample size became 83. However, it is a balanced panel data together with a homogenous sample which represent the nature of the study. Hence, its deselected companies which required information was either incomplete or not disclosed in its annual reports. Furthermore, any company that joined the Nigerian Exchange Group after 2011 were considered too young and it is avoided because of sample bias. However, in the final analysis, ten (10) companies were left out bringing the final sample size to seventy-three (73)

## Sources of Data Collection

The sources of secondary data are government publications, books and journal articles. In this study, we employed the secondary data source which justified the studies by Jayeola, Agbatogun and Akinrinlola (2017). The data for the sampled are listed non-financial companies sourced from the Nigerian Exchange Group Fact Books and related companies’ annual financial reports for the periods covered in the study.

## Method of Data Analysis

In this study, a numbers of litany of analyses which included pre & post regression analyses. For the pre regression analyses, focused was on describing the statistics using the descriptive structure including mean, standard deviation, maximum and minimum. This provides information on the sum statistics. Next to that were the test for normality of residual and then the test for collinearity (correlation) of the data set employed in this study. For the post regression analyses, the panel least square regression analyses technique was first employed in analysing the data set. Conducting the analysis enabled us to carry out some critical diagnostic tests to validate the estimates as prescribed

by Gujarati (2003). In that respect, some text were carry out to include the test for multicollinearity, heteroscedasticity, fixed effect errors and random effect errors.

## Diagnostic Tests

**Pre-regression analysis** is a reliable and dependable method of selecting which variable has an impact on a topic of interest. It is used to describe the relationship between a set of independent and depended variable

## Descriptive Statistics

Descriptive statistics helps to describe the nature of the data by revealing the mean (average), median, maximum, minimum, standard deviation and count for each of the variables.

## Normality of Residua

The assumption of normality of residua requires that the samples be drawn from a normally distributed population if we must rely on the t-statistics. In other words, the observations follow a normal (Gaussian) distribution. Therefore, it is assumed that the population from which the samples are collected is normally distributed. However, the null hypothesis is that the sample distribution is normal. If the test is valid (significant), the distribution is non-normal. Mendes and Pala (2003) concluded that Shapiro-Wilk test was the most powerful normality test hence we adopt Shapiro-Wilk test procedure in conducting the normality of this study.

## Test for Collinearity (Correlation)

Although the concepts of correlation and regression are intimately related, nevertheless, they are different (Warren, 1971). Correlation may be described as the degree of association between two

variables, whereas regression expresses the form of the relationship between specified values of one (the independent, exogenous, explanatory, regressor, carrier or predictor) variable and the means of all corresponding values of the second (the dependent, outcome, response variable; variable being explained) variable. In general, the study of interdependence leads to the investigation of correlations (Moore, 1980) while the study of dependence leads to the theory of regression. When the x variable is a random covariate to the y variable, that is, x and y vary (continuous variables), we are more interested in determining the strength of the linear relationship than in prediction; The sample correlation coefficient, rxy (r), is the statistics (Aknazarova & Kafarov 1982). Generally, the literature suggests that extremely non-normal distributions can sometimes inflate Type I error rates for tests of the Pearson correlation coefficient and increasing sample size does not necessarily alleviate the problem. The power benefit of Spearman’s r may be the result of rank-ordering causing outliers to contract toward the centre of the distribution (Fowler, 1987; Gauthier, 2001). Based on that understanding, and noting that the data set followed a non-normal distribution, we employed the Spearman Rank Correlation technique to show the possible correlation (association) between the variables of interest.

## Post Regression Analysis

A post regression Analysis is a model that predicts the outcome of variable within a specific range, e.g., to be Q, linear and logistic are all post regression analysis models.

## Test for Multicollinearity

Multicollinearity occurs when the explanatory variables in a regression model are correlated suggesting that there is a strong relationship among the independent variables which violates the model's estimation. Correlation is a problem because independent variables should be independent.

If the degree of correlation between variables is high enough, it can cause problems when you fit the model and interpret the results. In this study, like in most other related studies, we employed the variance inflation factor (VIF) technique to diagnose the presence or absence of multicollinearity in the model. Variance inflation factors (VIF) measures how much the variance of the estimated regression coefficients is inflated as compared to when the predictor variables are not linearly related. A cut-off value of 10 is given for regarding a VIF as high (Gujarati 2004)

## Test for Homoscedasticity

The assumption of homoscedasticity states that if the errors are heteroscedastic, then it will be difficult to trust the standard errors of the least square estimates. Hence, the confidence intervals will be either too narrow or too wide. The presence of heteroscedasticity tends to produce p-values that are smaller than they should be due to increased variance of the coefficient estimates and, unfortunately, least squares estimators do not detect this increase. In this study, the Breusch-Pagan test was employed to conduct the heteroscedasticity test for both models of price to earnings ratio and Tobin Q. Following the recommendation by Gujarati (2003), the assumption of homoscedasticity was violated at low P-values which were statistically significant at 1% or 5% level.

* + - 1. **Test for Fixed Effect (FE) Error**

When using an FE estimator, we assumed that something within the cross sections may impact or bias the predictor or outcome variables hence, we need to control for this. This is the rationale behind the assumption of the correlation between an entity’s error term and predictor variables.

FE removes the effect of those time-invariant characteristics from the predictor variables so we can assess the predictors’ net effect. Another important assumption of the FE model is that those time-invariant characteristics are unique to the cross sections and should not be correlated with other individual characteristics. Each entity is different; therefore, the entity’s error term and the constant (which captures individual characteristics) should not be correlated with the others (Stock &Watson, 2003). The rule of the thumb of the null hypotheses (H0) of this test suggested that there was no presence of fixed effects (no fixed effects) in the model hence adopting the ordinary least square regression estimator would yield best linear unbiased estimates for such model specification (Greene, 2008). This study adopted the LSDV to control for fixed effect errors and heteroscedasticity in relation to the Tobin Q model.

## Test for Random Effect Error

The rationale behind random effects model is that, unlike the fixed effect model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model: “…the crucial distinction between fixed and random effects is whether the unobserved individual effect embodies elements that are correlated with the regressors in the model, not whether these effects are stochastic or not” (Greene, 2008). Following the rule of thumb, the null hypotheses (H0) of this test suggested that there was no presence of random effects (no random effects) in the model hence adopting the ordinary least square regression estimator would yield best linear unbiased estimates for such model specification (Greene, 2008). In this study, we found the presence of random effect errors in the price to earnings ratio hence we controlled for the error together with the presence of heteroscedasticity by employing a hierarchical regression analysis technique.

## Hausman Specification Test

The Hausman specification test is employed to select the most appropriate model between fixed effect regression and random effect regression. In this study, the specification test suggested the random effect as the most appropriate for Tobin Q model hence, we adopted the hierarchical regression estimator to control for random effects and heteroscedasticity errors. However, in the case where the specification test suggested the fixed effect model, we adopted the least square dummy variable estimator. All those were done to improve the reliability of the resulting estimates.

## Hierarchical Regression

Researchers are often interested in testing theoretical assumptions and examining the influence of several predictor variables in a sequential way, such that the relative importance of a predictor may be judged based on how much it adds to the prediction of a criterion over and above that which can be accounted for by other important predictors. As Cohen (2001) and Wampold & Freund (1987) noted, hierarchical regression was designed to test such specific, theory-based hypotheses. In hierarchical regression, the focus is on the change in the predictability associated with predictor variables entered later in the analysis over and above that contributed by predictor variables entered earlier in the analysis. Changes in R2 (∆R2) statistics are computed by entering predictor variables into the analysis at different steps. A predetermined, theoretically based plan for the order of predictor variable entry, held at the discretion of the researcher, is imposed on the data. Statistics associated with predictor variables entered in later steps are computed with respect to predictor variables entered in earlier steps. Thus, ∆R2 and its corresponding change in F (∆F) and p-values are the statistics of greatest interest when using hierarchical regression (Wampold & Freund, 1987). The corresponding ∆F value for ∆R2 would allow a researcher to determine if the ∆R2 statistics significantly improved the model’s ability to predict the effect of the independent variable

on the dependent variable. With a focus on ∆R2 rather than on β or structure coefficients (Courville & Thompson, 2001; Thompson & Borrello, 1985), less attention is given to how predictor variables are reevaluated based on their corresponding βs and structure coefficients when other predictors are added to the analysis as is often done in stepwise regression.

## Robust Least Square Dummy Variable Estimator

In panel data models, dummy variables may be introduced to the least squares to explain the effect of each individual unit of a cross section which is unobserved but correctly specifies the model. Just like the ordinary least square (OLS), the least square dummy variable (LSDV) estimator is also applied to the equations in a level form and all the cross sections is are applied in the actual estimation (Islam, 1994, Greene, 2003). It can give estimates of variances of αit and εit separately. In the least square dummy variable estimation, the individual effect is assumed to be fixed over time in each individual. The fixed effects model is a useful specification for explaining cross section heterogeneity in the panel data. The LSDV is generally implemented by the insertion of relevant dummies but it is mindful of the dummy variable trap and application of OLS on the enlarged model. Computationally, it is simpler to obtain LSDV through an estimation (Greene, 2003).

## Model Specification

Two econometric models were specified in this study. They were the panel least square and moderated analyses models. For the purpose of this study, we adopted the panel least square model by Aganyo, (2014) which was re-specified to suit the variables of this present study and the one

by of Khaoula & Moez (2019) was adopted and modified to suit the moderated regression model study which centred on corporate tax saving strategy and firm value, the moderating role of audit committee size of listed non-financial companies in Nigeria. However, the specified econometric forms were stated as;

## Model 1 Firm Value Panel Least Square Regression Model

***Tobin Qit =*** ***0 +*** ***1CETRit +*** ***2IETRit +*** ***3Debtaxit +*** ***4NDtaxit***

**PE =** ***0 +*** ***1CETRit +*** ***2IETRit +*** ***3Debtaxit +*** ***4NDtaxit***

## Model 2 Firm Value Moderated Regression Analyses Model

***Tobin Qit =*** ***0 +*** ***1CETRit +*** ***2IETRit +*** ***3Debtaxit +*** ***4NDtaxit +*** ***CETR\*ACSit +***

***7IETR\*ACSit +*** ***8Debtax\*ACSit +*** ***9NDtax\*ACSit***

**PE *=*** ***0 +*** ***1CETRit +*** ***2IETRit +*** ***3Debtaxit +*** ***4NDtaxit +*** ***CETR\*ACSit +***

***7IETR\*ACSit +******8Debtax\*ACSit +*** ***9NDtax\*ACSit +***

## Where;

**Dependent Variables**

|  |  |  |
| --- | --- | --- |
| Tobin Q | = | Tobin Q |
| PE | = | Price-to-Earnings Ratio |

## Moderator Variable

ACS = Audit Committee Size

## Independent Variables

CETR = Cash Effective Tax IETR = Income Effective Tax Debtax= Debt Tax Shield NDtax = Non-Debt Tax Shield

CETR\*ACS = Product of cash Effective Tax & Audit Committee Size IETR\*ACS = Product of Income Effective Tax & Audit Committee Size Debtax\*ACS = Product of Debt Tax & Audit Committee Size NDtax\*ACS = Product of Non-Debt & Audit Committee Size

“i" for cross sections (firms in the study) “t” for time period

eit for error term

## Operationalization of Variables

The operational definitions of the variables used in the study for both the dependent and independent variables were tabulated below.

## Table 3.1 Operationalization of Variables and Justification

|  |  |  |
| --- | --- | --- |
| **Variables** | **Measurement** | **Source** |
| Tobin Q  (Dependent Variable) | Tobin Q in numbers was computed as Market Capitalisation + Total Liabilities -Cash flow divided by  Total asset | Aganyo, (2014), Tang, (2017) |
| PE  (Dependent Variable) | Price to earnings per share ratio was computed as December year end share price divided by  earnings per share | Lee, (2020); Lestari, & Wardhani, (2015) |
| CETR  (Independent Variable) | Cash effective tax in percentage was computed as income tax paid in cash flow statement divided by  profit before tax | Aganyo (2014) |
| IETR  (Independent Variable) | Income effective tax in percentage was computed as income tax expenses in profit and loss account  divided by profit before tax | Aganyo (2014) |

|  |  |  |
| --- | --- | --- |
| Debtax  (Independent Variable) | Debt tax shield in percentage was  computed as finance cost divided by total assets | Lubis (2019) |
| NDtax  (Independent Variable) | Non-debt tax shield in percentage was computed as depreciation and  amortisation divided by total asset. | Lubis (2019) |
| ACS  (Independent Variable) | Audit Committee Size in numbers was calculated as total number of audit committee members | Kesner (2017); Orlando,  (2017). |

**Source: Researcher’s Compilation, 2021**

## CHAPTER FOUR

**DATA PRESENTATION ANALYSIS AND DISCUSSION**

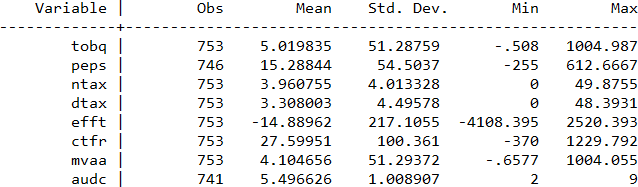
## Introduction

In this chapter, the results obtained from various statistical and econometric analyses are presented with data. This is followed with the disrupted structure in section below.

## Data Presentation

The study evaluated the moderating effect of audit committee size on the relationship between corporate tax saving strategy and firm value of non-financial firms listed on the Nigerian Exchange Group for a 10-year period, ranging from 2011 to 2020. The independent variables of interest in this study were non-debt tax shield, debt tax shield, income effective tax rate and cash effective tax rate while two dependent variables which included Tobin’s Q and price to earnings per share which served as the dependent variables. In other to ascertain the possible moderating effect of audit committee size on the relationship between corporate tax saving strategy and firm value in non financial firm in Nigeria and to improve the efficiency of the model, market to book value was used as a control variable. The results from Table 4.1 which described the nature of the data by revealing the mean (average), median, maximum, minimum, standard deviation and count for each of the variables. Correlation analyses was also conducted to find out whether there is any perfect or near perfect correlation among the variables of interest. Overall, the result obtained from the descriptive statistics tables provided some insights into the nature of the selected listed non-finance firms in Nigeria that were used for this study.

## Table 4.1a Descriptive Statistics



**Authors’ Computation**

## Descriptive Statistics

The Table above described the data employed in this study. From the Table we observed that on average, Tobin Q was 5.02 with a standard deviation of 51.29 and a minimum and maximum value of -0.51 and 1004.99 respectively. We also found that, on average, price to earnings ratio was

15.29 with a standard deviation of 54.50 and a minimum and maximum value of -255 and 612.67 respectively. Non-debt tax was 3.96, on average, while debt tax was 3.31, on average, during the period under investigation. The Table above also revealed that, on average, income effective tax was -14.89 while cash effective tax was 27.60. We found that market value which was added as a control variable was 4.10, on average, while the moderating variable of audit committee size indicated that on, average, 5 members sat on the audit committee board during the period under investigation.

## Table 4.1b Descriptive Statistics in terms of Firm Year

**year | tobq peps ntax dtax efft ctfr mvaa audc**

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2011 |** | **1.520266** | **19.33707** | **4.427811** | **1.867232** | **-12.52141 21.66081** | **.6087868** | **5.342105** |
| **|** | **1.184237** | **64.60194** | **5.237052** | **1.782124** | **39.31214 61.58331** | **1.19612** | **.973689** |
| **|** | **.4824** | **-58** | **.0695** | **0** | **-157.0787 -241.5266** | **-.4254** | **2** |
| **|** | **7.5227** | **490** | **36.1098** | **7.4509** | **74.0554 223.234** | **6.7984** | **6** |
| **|** | **115.5402** | **1469.618** | **336.5136** | **141.9096** | **-951.6272 1646.222** | **46.2678** | **406** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2012 |** | **1.564095** | **28.97223** | **4.192064** | **2.588139 -4.757304** | **50.04138** | **.6485474** | **5.407895** |
| **|** | **1.302053** | **89.07855** | **4.918445** | **2.491782 46.65728** | **161.832** | **1.320108** | **.9822102** |
| **|** | **.3105** | **-81.6667** | **.3661** | **0 -161.2288** | **-53.1275** | **-.4593** | **2** |
| **|** | **6.809** | **612.6667** | **37.8059** | **10.3961 215.0447** | **1229.792** | **5.8518** | **7** |
| **|** | **118.8712** | **2172.917** | **318.5969** | **196.6986 -361.5551** | **3803.145** | **49.2896** | **411** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2013 |** | **1.835661** | **15.40946** | **3.970979** | **2.695279 -28.12937** | **17.63591** | **.9262461** | **5.447368** |
| **|** | **1.819447** | **34.64536** | **3.072748** | **2.557111 133.2855** | **98.88316** | **1.854904** | **.9577019** |
| **|** | **.3833** | **-93.5** | **.4414** | **0 -755.6673** | **-370** | **-.4327** | **2** |
| **|** | **11.2986** | **245** | **17.6549** | **12.985 806.6755** | **735.0643** | **10.7788** | **7** |
| **|** | **139.5102** | **1171.119** | **301.7944** | **204.8412 -2137.832** | **1340.329** | **70.3947** | **414** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2014 |** | **1.610729** | **16.21878** | **3.988288** | **3.012661** | **4.521179 21.51394** | **.6766776** | **5.473684** |
| **|** | **1.510139** | **29.39475** | **2.833386** | **3.072528** | **220.422 77.27456** | **1.529502** | **.8713772** |
| **|** | **.2592** | **-39.5** | **.3365** | **0** | **-134.2676 -190.4219** | **-.6042** | **4** |
| **|** | **8.8005** | **156.1429** | **18.1983** | **15.8754** | **1883.773 629.1075** | **8.1547** | **7** |
| **|** | **122.4154** | **1232.627** | **303.1099** | **228.9622** | **343.6096 1635.059** | **51.4275** | **416** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2015 |** | **1.518218** | **13.62401** | **4.180918** | **3.981233 -9.877443** | **16.76658** | **.6015592** | **5.421053** |
| **|** | **1.365386** | **26.4543** | **3.059356** | **5.089178 77.68854** | **46.77178** | **1.393755** | **.9968371** |
| **|** | **.1241** | **-45.5417** | **.3893** | **0 -91.7694** | **-198.657** | **-.6128** | **3** |

**| 7.7273 140.3333 20.0943 28.7763 581.7729 282.9511 7.2742 8**

**| 115.3846 1035.424 317.7498 302.5737 -750.6857 1274.26 45.7185 412**

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2016 |** | **1.289707** | **12.36399** | **3.841926** | **4.503687 -8.089311** | **26.06357** | **.3977197** | **5.513158** |
| **|** | **1.042799** | **28.4785** | **3.408457** | **6.707317 144.6076** | **69.23156** | **1.062569** | **.9864877** |
| **|** | **.279** | **-61.9776** | **.1954** | **0 -174.0567** | **-81.5812** | **-.5829** | **4** |
| **|** | **5.3102** | **182.2727** | **26.369** | **48.3931 1179.322** | **336.9309** | **4.3363** | **8** |
| **|** | **98.0177** | **939.6629** | **291.9864** | **342.2802 -614.7876** | **1980.832** | **30.2267** | **419** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2017 |** | **1.439442** | **25.16912** | **3.602922** | **5.092492 -76.53405 48.10172** | **.554479** | **5.684932** |
| **|** | **1.36915** | **80.57259** | **3.6312** | **6.345134 483.9574 131.1111** | **1.394143** | **1.177057** |
| **|** | **.3212** | **-73** | **0** | **0 -4108.395 -112.9458** | **-.568** | **4** |
| **|** | **8.9926** | **512** | **20.4867** | **36.2661 586.5471 762.4883** | **8.0957** | **9** |
| **|** | **109.3976** | **1912.853** | **273.8221** | **387.0294 -5816.588 3655.731** | **42.1404** | **415** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2018 |** | **1.320485** | **14.11785** | **3.569611** | **4.137656 -37.50113 17.39301** | **.4028893** | **5.707692** |
| **|** | **1.199821** | **71.45811** | **2.988725** | **5.293841 100.0123 60.24324** | **1.232113** | **1.02657** |
| **|** | **.383** | **-82.5** | **0** | **0 -719.4685 -249.1865** | **-.6076** | **4** |
| **|** | **7.8446** | **470** | **18.7583** | **29.9054 157.3957 325.4521** | **6.9417** | **8** |
| **|** | **99.0364** | **1030.603** | **267.7208** | **310.3242 -2812.585 1304.476** | **30.2167** | **371** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2019 |** | **1.219297** | **3.472948** | **3.504784** | **2.690108 32.32002** | **39.18538** | **.3120893** | **5.625** |
| **|** | **1.115562** | **36.54501** | **2.940438** | **3.270002 349.6948** | **159.1122** | **1.117975** | **1.106161** |
| **|** | **.2572** | **-255** | **.0015** | **0 -229.4768** | **-50.655** | **-.5903** | **3** |
| **|** | **6.7536** | **99** | **15.2686** | **16.2461 2520.393** | **1227.492** | **5.7896** | **8** |
| **|** | **91.4473** | **253.5252** | **262.8588** | **201.7581 2424.001** | **2938.903** | **23.4067** | **405** |

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2020 |** | **39.01853 2.707603** | **4.342192** | **2.458434 -7.518835** | **16.95032** | **38.05236** | **5.386667** |
| **|** | **164.1526 26.91147** | **6.541196** | **4.386605 60.89621** | **31.9469** | **164.1833** | **.9849315** |
| **|** | **-.508 -185.0606** | **0** | **0 -67.9443** | **-19.4789** | **-.6577** | **2** |

**| 1004.987 59.5745 49.8755 33.9234 393.7771 210.36 1004.055 7**

**| 2770.316 186.8246 308.2956 174.5488 -533.8373 1203.473 2701.717 404**

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Total |** | **5.019835** | **15.28844** | **3.960755** | **3.308003 -14.88962** | **27.59951** | **4.104656** | **5.496626** |
| **|** | **51.28759** | **54.5037** | **4.013328** | **4.49578 217.1055** | **100.361** | **51.29372** | **1.008907** |
| **|** | **-.508** | **-255** | **0** | **0 -4108.395** | **-370** | **-.6577** | **2** |
| **|** | **1004.987** | **612.6667** | **49.8755** | **48.3931 2520.393** | **1229.792** | **1004.055** | **9** |
| **|** | **3779.936** | **11405.17** | **2982.448** | **2490.926 -11211.89** | **20782.43** | **3090.806** | **4073** |

**------------------------------------------------------------------------------------------**

## Authors’ Computation

The Table above showed the descriptive statistics of the study by firm year category. From the Table, it was found that average, Tobin Q increased from 1.52 in year 2011 to 1.56 in year 2012, and 1.84 in year 2014. However, on average, it was found a decline in Tobin Q from year 2015 through to year 2019. But then, Tobin Q was highest in year 2020 (39.02). Price to earnings ratio, on average, was 19.34 in year 2011, 28.97 in year 2012, 15.41 in year 2013 and 16.22 in year 2014. It was found that price to earnings ratio was the lowest during year 2020 (2.71) closely followed by year 2019 (3.47). Non-debt tax shield reduced from 4.42 in year 2011 to 4.19 in year 2012, 3.97

in year 2013, 3.99 in year 2014, 3.60 in year 2017, 3.57 in year 2018, and 3.50 in year 2019. But then, we observed that where non-debt tax shield was low, debt tax shield was high, implying that where the firms in our sample did not conceal tax liability through non-debt tax shield, they did so through debt tax shield. Specifically, on average, debt tax shield increased from 1.87 in year 2011 to 2.59 in year 2012, 2.69 in year 2013, 3.01 in year 2014, 3.98 in year 2015 to the highest, 5.09 in year 2017. Income effective tax rate on average was -12.52 in year 2011, -4.76 in year 2012, -

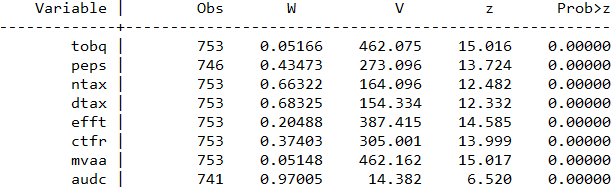
28.13 I year 2013, 4.52 in year 2014. But then, it was also observed a negative income effective

tax rate during the period under study except for year 2014 (4.52). For cash effective tax rate, we find that on average it was highest in year 2012 (50.04) closely flowed by year 2017 (48.10). However, it was the lowest in year 2015 (16.77) closely followed by year 2020 (16.95). Our control variable of market value added was highest on average, in year 2020 (38.05) and lowest in year 2019 (0.31). Audit committee size being our moderating variable, was 5, on average, during the period under study.

## Test for Normality of Residual

In this study normality of residual test using Shapiro Wilk test was conducted and the procedure as shown in the Table 4.2.

## Table 4.2 Shapiro Wilk Test for Normality of Residual



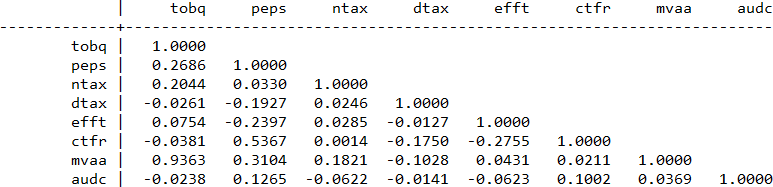
**Author’s Computation 2021**

From the Table above, it was observed that the dependent variable of Tobin’s Q (Prob > z = 0.00000) and price to earnings ratio (Prob > z = 0.00000) as well as the independent variables of Non-Debt Tax shield (Prob > z = 0.00000), Debt Tax shield (Prob > z = 0.00000), Income Effective t

Tax rate (Prob > z = 0.00000), Cash Effective Tax rate (Prob > z = 0.00000), Audit Committee Size (Prob > z = 0.00000), and the control variable of market value added (Prob > z = 0.00000) were not normally distributed since the probability of the z-statistics was significant at 1% levels. That was justified following the study by Bera and Jarque (1982).

## Correlation Analysis

**Table 4.3 Spearman Rank Test for Correlation**



## Author’s Computation, 2021

Specifically, the Analysis of the spearman rank correlation matrix showed that Non Debt Tax (0.2044),Income Effective Tax (0.0754) and market value added (0.9363) were positively associated with Tobin Q. However, it was found that debt tax (-0.0261), cash effective tax rate (- 0.0381) and audit committee size (-0.0238) were negatively correlated with Tobin Q. Further, the table shows that non debt tax (0.0330), cash effective tax (0.5367), market value added (0.3104) and audit committee size (0.1265) are positively associated with the dependent variable of price to earnings ratio. it was observed that debt tax (-0.1927) and income effective tax (-0.2397) were negatively associated with the dependent variable of price to earnings ratio. All associations were seen to be weak hence, there was no room to suspect the presence of collinearity in the estimated model. More so, to confirm the absence of multicollinearity among the independent variables, we employed a more robust check of the Variance Inflation Factor Test (VIF) was used.

## Table 4.4 Presentation of Regression Analysis Result

**Variable | PLS PEPS FE PEPS RE PEPS HIREG\_PEPS PLS TOBIN FE TOBIN RE TOBIN RLSDV REG**

**-------------+--------------------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ntax** | **|** | **-1.3334281** | | **-.61160503** | **-.61240001** | **-1.3334281** | **.17527127** | **-.40871449** | **.17527127** | **.01002411** |
|  | **|** | **.83754122** | | **.49347009** | **.49398835** | **.83754122** | **.88745101** | **.8657395** | **.88745101** | **.00425458** |
|  | **|** | **-1.59** | | **-1.24** | **-1.24** | **-1.59** | **0.20** | **-0.47** | **0.20** | **2.36** |
|  | **|** | **0.1121** | | **0.2156** | **0.2151** | **0.1121** | **0.8435** | **0.6371** | **0.8434** | **0.0190\*\*** |
| **dtax** | **|** | **-.86242829** | | **-1.2434759** | **-1.12531** | **-.86242829** | **-.08462091** | **-.05002142** | **-.08462091** | **.00925224** |
|  | **|** | **.54601529** | | **.45180558** | **.44216087** | **.54601529** | **.57834871** | **.5779987** | **.57834871** | **.0031218** |
|  | **|** | **-1.58** | | **-2.75** | **-2.55** | **-1.58** | **-0.15** | **-0.09** | **-0.15** | **2.96** |
|  | **|** | **0.1150** | | **0.0061\*** | **0.0109\*\*** | **0.1150** | **0.8837** | **0.9311** | **0.8837** | **0.0032\*\*** |
| efft | | .05018718 .0128503 .01001583 .05018718 | | | | | .00495619 | -.00031411 .00495619 -.00006209 | | | |
| **|** | | | **.03111848** | **.00908906** | **.00906906** | **.03111848** | **.0329402** | **.03246444** | **.0329402** | **.00013415** |
| **|** | | | **1.61** | **1.41** | **1.10** | **1.61** | **0.15** | **-0.01** | **0.15** | **-0.46** |
| **|** | | | **0.1075** | **0.1578** | **0.2694** | **0.1075** | **0.8805** | **0.9923** | **0.8804** | **0.6438** |
| **ctfr |** | | | **.20165321** | **.0547665** | **.05965656** | **.20165321** | **.05978865** | **.06599146** | **.05978865** | **.00008165** |
| **|** | | | **.0383075** | **.01981492** | **.01975541** | **.0383075** | **.03996411** | **.03910188** | **.03996411** | **.00017758** |
| **|** | | | **5.26** | **2.76** | **3.02** | **5.26** | **1.50** | **1.69** | **1.50** | **0.46** |
| **|** | | | **0.0000\*\*\*** | **0.0059\*\*** | **0.0025\*\*** | **0.0000\*\*\*** | **0.1354** | **0.0922** | **0.1346** | **0.6460** |
| **logmva |** | | | **4.783537** |  |  | **4.783537** | **15.448082** | **14.328381** | **15.448082** | **.26385027** |
| **|** | | | **1.6333948** |  |  | **1.6333948** | **1.7278749** | **1.7074906** | **1.7278749** | **.00945169** |
| **|** | | | **2.93** |  |  | **2.93** | **8.94** | **8.39** | **8.94** | **27.92** |
| **|**  **mvaa |** | | | **0.0036\*\*** | **.04322945** | **.02418746** | **0.0036** | **0.0000\*\*\*** | **0.0000\*\*\*** | **0.0000\*\*\*** | **0.0000\*\*\*** |
| **|** | | |  | **.0391205** | **.03839947** |  |  |  |  |  |
| **|** | | |  | **1.11** | **0.63** |  |  |  |  |  |
| **|** | | |  | **0.2695** | **0.5288** |  |  |  |  |  |
| **\_cons |** | | | **29.346094** | **20.318072** | **19.830322** | **29.346094** | **18.687251** | **19.805674** | **18.687251** | **1.7192561** |
| **|** | | | **4.8979258** | **3.1180593** | **3.1239224** | **4.8979258** | **5.1862083** | **5.042843** | **5.1862083** | **.0766052** |
| **|** | | | **5.99** | **6.52** | **6.35** | **5.99** | **3.60** | **3.93** | **3.60** | **22.44** |
| **|** | | | **0.0000\*\*\*** | **0.0000\*\*\*** | **0.0000\*\*\*** | **0.0000** | **0.0004\*\*** | **0.0001\*\*** | **0.0003\*\*** | **0.0000\*\*\*** |

**-----+-------------------------------------------------------------------------------------------------------**

**r2 | .08893609 .02920367 .08893609 .16372234 .14736412 .97168924**

**VIF | 1.04 1.04**

**Hetero | 0.0000\*\*\* 0.0000\*\*\***

**Fixed Effect| 0.0005\*\* 0.0064\*\***

**Random Effect| 0.0002\*\* 1.0000**

**Hausman Test| 0.0776**

**-------------+----------------------------------------------------------------------------------------------**

**Where: \*\* represents 5% & \*\*\*\* represent 1% level of statistical significance**

## Source: Authors’ Computations (2021)

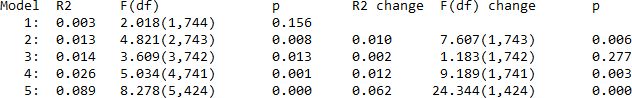
* 1. **Regression Analysis**

To test the objectives of this study, panel least square (PLS) regression analysis was used, PLS to check for possible violations of the basic assumption of the least square regressions. The results obtained from the panel least square regression for price to earnings ratio and Tobin’s Q models were shown in the Table. The test for multicollinearity in PLS model for price to earnings (PLS\_PEPS) showed a result of mean VIF = 1.04 which suggested that there was no evidence of multicollinearity in the specified model since the mean VIF was within the threshold of 10 as suggested by Gujarati (2004). However, the test for heteroscedasticity in the same model (PLS\_PEPS) using the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity suggested a strong presence of heteroskedasticity in the model seen from very low Prob > chi2 = 0.0000 value which is statistically significant at 1%. The presence of heteroscedasticity violates the assumption of homoscedasticity hence, the effects regression estimators (fixed and random) were employed to help cushion the effect of heteroscedasticity that was present in the specified price to earnings per share model. In this study, both models were estimated and a selection using Hausman Specification test procedure, suggested the random effect model as the best for price to earnings ratio. However, estimated price to earnings model was estimated by employing the **hierarchical**

**regression analyses technique** which controls the presence of heteroscedasticity and random effect.

Specifically, the price to earnings model summary obtained from the Hierarchical regression is presented below:

## Table 4.5 Hierarchical Regression Summary



**Author’s Computation, 2021**

From The Table above, revealed that the addition of a second predictor variable (debt tax shield) brought about a significant change in R2 from 0.003 to 0.013. It’s indicated that about 1% (0.010) change in firm value proxied by price to earnings ratio was explained by the inclusion of the predictor variable Debt Tax shield to Non-Debt Tax shield. In the same vein, the inclusion of a third predictor variable of Income Effective Tax rate brought about a significant change in R2 from

0.013 to 0.014. it indicates that about 1% (0.002) of the change in firm value proxied by price to earnings ratio was explained by the inclusion of the predictor variable Income Effective Tax rate to Debt Tax shield” and Non-Debt Tax shield”. Similarly, the addition of a fourth predictor variable (Cash Effective Tax rate) yielded a significant change in R2 from 0.014 to 0.026. This indicates that about 1% (0.012) change in firm value proxied by price to earnings ratio is explained by the inclusion of Cash Effective rate to Income Effective Tax rate, Debt Tax shield, and Non- Debt Tax shield as predictor variables. Furthermore, the model summary showed that including a control variable (market value added) brought about a significant change in R2 from 0.026 to 0.089

suggesting that about 6% (0.062) of the change in firm value proxied by price to earnings ratio was explained by the inclusion of market value added to cash effective rate, income effective tax rate, debt tax shield, and non-debt tax shield as the predictor variables. Furthermore, a look at the change in F-statistics revealed an overall increase (24.344) when compared to previous models. The p-value of 0.000 indicated that the overall change in F-statistics was significant at 1%.

Also, the results obtained from the panel least square regression for Tobin Q (PLS Tobin) model revealed the test for multicollinearity as mean VIF = 1.04 which indicated that there was no evidence of multicollinearity in the specified model since the mean VIF was within the threshold of 10 as suggested by Gujarati (2004). However, the test for heteroscedasticity in the same model (PLS\_TOBIN) using the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity suggested the strong presence of heteroskedasticity in the model seen from very low Prob > chi2 = 0.0000 value which was statistically significant at 1%. The presence of heteroscedasticity violates the assumption of homoscedasticity hence, the effects regression estimators (fixed and random) were employed to help cushion the effect of heteroscedasticity which was present in the specified Tobin Q model. In this study, both models were estimated and, while the fixed effect was significantly present (0.0006), the absence of random effect (1.0000) was revealed hence, the use of a selection using Hausman Specification test procedure was not required. However, we estimated Tobin Q model by employing **robust least square dummy variable regression analyses technique** which was built to control for the presence of heteroscedasticity and fixed effect. Specifically, the study provided an interpretation and made policy recommendations with the Tobin Q model. The model goodness of fit as captured by the Fisher statistics 175.08 and the corresponding probability value (0.000) showed a 1% statistically significant level suggesting that the entire model was fit and

could be employed for interpretation and policy implication. An R2 value of 0.97 indicates that about 97% of the variation in the dependent variable was being explained by all the independent and control variables in the model.

## Test of Research Hypotheses

**Hypotheses 1 There is no significant relationship between Cash Effective Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.**

The results obtained from the hierarchical regression model of Price to Earnings Ratio revealed that Cash Effective Tax Rate had a significant positive relationship with firm value of listed non- finance firms during the period under investigation. It was shown as, cash effective tax rate (Coef.

= 0.060, t = 3.03 and P -value = 0.003). However, the Tobin’s Q, model showed that cash effective tax rate had an insignificant and positive relationship with firm value of listed non-finance firms in the period under investigation. It is shown as, cash effective tax rate (Coef. = 0.001, t = 0.46 and P -value = 0.648). the coefficient shows that it is *ceteris paribus* (all things been equal) an increase in the provision for cash effective tax would lead to a significant rise in firm value although only for firm value proxy for price to earnings ratio. The findings were inconsistent with the stated null hypothesis hence; we restated that there was a significant relationship between cash effective tax rate and firm value of listed non-finance firms in Nigeria.

## Hypotheses 2 There is no significant relationship between Income Effective Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.

The hierarchical regression model of price to earnings ratio revealed that income effective tax rate had an insignificant relationship with firm value of listed non-finance firms during the period under investigation it was shown as income effective tax rate (Coef. = 0.010, t = 1.09 and P -value = 0.277). Similarly, the results from Tobin’s Q, model as obtained from the robust least square dummy variable regression revealed that income effective tax rate had an insignificant relationship with firm value of listed non-finance firms during the period under investigation. It was shown as income effective tax rate (Coef. = --0.001, t = -0.46 and P -value = 0.643). The outcome was consistent with the stated null hypothesis hence, in this study, we accepted that there was no significant relationship between income effective tax rate and firm value of listed non-finance firms in Nigeria.

## Hypotheses 3 There is no significant relationship between non-debt tax saving strategy and firm value of listed non-financial firms in Nigeria.

The result obtained from price to earnings ratio model using the hierarchical regression analysis technique in Table 4.6 above revealed that Non-Debt Tax shield had an insignificant relationship with firm value of listed non-finance firms in Nigeria during the period under investigation. It was shown as non-debt tax shield (Coef. = -0.704, t = -1.42 and P -value = 0.156). Tobin’s Q, model evaluated by least square dummy variable regression indicated that Non-Debt Tax shield had a significant positive relationship with firm value of listed Non-finance firms in Nigeria during the period under investigation; non-debt tax shield (Coef. = 0.001, t = 2.35 and P -value = 0.019). Therefore, the increased adoption of Non-Debt Tax Saving Strategy significantly improved Tobin’s Q but was inconclusive on firm value proxy for price to earnings ratio. However, the findings were inconsistent with the stated null hypothesis hence, restated the hypothesis that there

was a significant relationship between non-debt tax shield and firm value of listed non-finance firms in Nigeria.

## Hypotheses 4 There is no significant relationship between Debt Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria.

The results obtained from the hierarchical regression model of price to earnings ratio in Table 4.6 above revealed that Debt Tax shield had a significant negative relationship with firm value. It was shown as debt tax shield (Coef. = -1.223, t = -2.76 and P -value = 0.006). However, firm value proxy of Tobin’s Q from least square dummy variable regression showed a significant positive relationship with debt tax shield of listed non-finance firms during the period under investigation.; debt tax shield (Coef. = 0.009, t = 2.97 and P -value = 0.003). The outcome negated the stated null hypothesis hence, we restated it that there was a significant relationship between debt tax shield and firm value of listed non-finance firms in Nigeria.

In this study, hypotheses five (5) was tested which related the moderating effect of audit committee size to the relationship between tax saving strategy and firm value by relying on the estimates obtained from the moderated robust least square regression analyses technique and moderated robust least square dummy variable regression analyses technique for price to earnings model and Tobin’s Q model respectively as provided in the Table below:

## Table 4.6 Hierarchical Regression Summary

Variable | PEPS\_M\_RLS M\_RLSDV\_TOBIN

+

|  |  |  |  |
| --- | --- | --- | --- |
| ntax | | | -2.0592233 | .03783454 |
|  | | | .86546705 | .02623237 |
|  | | | -2.38 | 1.44 |
|  | | | 0.0178\*\* | 0.1501 |
| dtax | | | -.91323394 | .02212624 |
|  | | | .70801825 | .01635664 |
|  | | | -1.29 | 1.35 |
|  | | | 0.1978 | 0.1770 |
| efft | | | .07537256 | -.00034044 |
|  | | | .0887145 | .00204325 |
|  | | | 0.85 | -0.17 |
|  | | | 0.3960 | 0.8678 |
| ctfr | | | .1397285 | -.00148054 |
|  | | | .0638332 | .00126811 |
|  | | | 2.19 | -1.17 |
|  | | | 0.0292\*\* | 0.2438 |
| ntax\_acs | | | .33325658 | -.0090956 |
|  | | | .15039154 | .00449725 |
|  | | | 2.22 | -2.02 |
|  | | | 0.0272\*\* | 0.0439\*\* |
| dtax\_acs | | | .11570697 | -.00284303 |
|  | | | .13036257 | .00307287 |
|  | | | 0.89 | -0.93 |
|  | | | 0.3753 | 0.3555 |
| efft\_acs | | | -.01985964 | .00004449 |
|  | | | .01600838 | .00034422 |

|  |  |  |
| --- | --- | --- |
| | | -1.24 | 0.13 |
| | | 0.2155 | 0.8972 |
| ctfr\_acs | | .00946452 | .00030304 |
| | | .01252339 | .00024284 |
| | | 0.76 | 1.25 |
| | | 0.4502 | 0.2129 |
| logmva | | 2.2006515 | .26174149 |
| | | .32605186 | .00963436 |
| | | 6.75 | 27.17 |
| | | 0.0000\*\*\* | 0.0000\*\*\* |

+

r2 | .59881338 .97183306

F 68.33 (0.0000) F 163.19 (0.0000)

**Where: \*\* represents 5% level of statistical significance**

## Source: Author’s Computations (2021)

Specifically, the study provided an interpretation and made policy recommendation with the moderated robust regression estimator for price to earnings model and moderated robust least square dummy variable estimator for Tobin’s Q model. For price to earnings ratio model, it was found that the model goodness of fit as captured by the Fisher statistics (68.33) together with its corresponding probability value (0.000) shows a 1% statistically significant level indicating that the entire model is fit and can be employed for interpretation and policy implication. An R2 value of 0.5988 indicates that about 60% of the variation in the dependent variable is being explained by all the independent variables including the moderated and control variables in the model. This also

means that about 40% of the variation in the dependent variable is left unexplained but have been captured in the error term. However, for the moderated robust least square dummy variable regression employed to estimate Tobin’s Q model revealed model goodness of fit (163.19) as captured by the Fisher statistics and its corresponding probability value (0.000) shows a 1% statistically significant level suggesting that the entire model is good fit and can be employed for interpretation and policy implication. An R2 value of 0.9718 indicates that about 97% of the variation modeling in the dependent variable is being explained by all the independent variables the moderated variables and the control variables in the model. Therefore, about 3% of the variation in the dependent variable is left unexplained but have been captured in the error term.

## Hypotheses 5 Audit committee size has no significant moderating effect on the relationship between tax saving strategy and firm value of listed non- financial firms in Nigeria.

The price to earnings ratio model shown in the Table 4.6 above revealed that Audit Committee size had a significant moderating effect on the relationship between Tax Savings Strategy and Firm Value of listed Non-finance firms during the period under investigation. However, the effect (interaction) was felt only the on Tax Saving Strategy of non-debt tax as (Coef. = 0.333, t = 2.22 and P -value = 0.0272) among all other independent variables of interest (debt tax, cash effective tax and income effective tax). Clearly, the outcome indicated a moderating effect which was positive and statistically significant for non-financial listed firms in Nigeria during the period under review. In relation to hypotheses 3, the outcome emphasized the relevance of a moderator (audit committee size) in boosting firm value. The result implied that, *ceteris paribus*, increasing the application of non-debt tax as an effort towards boosting firm value should be complemented

with a simultaneous increase in audit committee size. Therefore, a unit increase in non-debt tax together with the inclusion of one more member into the audit committee would led to an increase in firm value by 0.333 unit during the period under review.

Particularly, a reverse effect was seen for Tobin’s Q model which revealed that audit committee size significantly moderated the relationship between tax savings strategy and firm value of listed non-finance firms during the period under investigation. Again, we observe that the effect (interaction) was felt only on the tax saving strategy of non-debt tax as (Coef. = -0.009, t = -2.02 and P -value = 0.0439) among all other independent variables of interest (debt tax, cash effective tax and income effective tax). Clearly, the outcome indicated a moderating effect which was negative and statistically significant for non-financial listed firms in Nigeria during the period under review. In relation to hypotheses 3, we found that the outcome emphasized the importance of a moderator (audit committee size) in discovering the true relationship between tax saving strategy and firm value. The result implied that, ceteris paribus, increasing the application of non- debt tax as an effort towards boosting firm value when complemented with a simultaneous increase in audit committee size would worsen the firm value position. Therefore, a unit increase in non- debt tax, together with the inclusion of one more member into the audit committee would led to a decrease in firm value by 0.009 unit during the period under review.

## CHAPTER FIVE

**DISCUSSION OF RESULT AND TEST OF HYPOTHESES**

## Introduction

This chapter discusses the findings obtained from the statistical analysis conducted to evaluate Corporate Tax Saving Strategy and to determine the moderating effect of Audit Committee size on the relationship between Tax Saving Strategy and Firm Value of listed Non-financial firms in Nigeria. In doing this the chapter compares the findings with of process of finding and seek the possible explanations to the results obtained from the regression analyses. Thus, in this chapter, we provide a detailed discussion of the results which were obtained from the regression analyses.

## Discussion of Findings

In hypotheses one it was found that Cash Effective Tax rate has a significant and positive effect on firm value (price to earnings ratio) while income effective tax rate had no significant effect on firm value proxies for both price to earnings ratio and Tobin’s Q model. Specifically, the results imply that more application of cash effective tax would improve firm value. This findings were consistent with those obtained in the study by Tang (2017) and Lestari and Wardhani (2015) which revealed that aggressive firms, in terms of tax policies, improved the value of the firm. But the findings were seen to be inconsistent with those of Wahab and Holland (2012) which indicated a negative association between effective tax and firm value and Akbari et al., (2019). Salawu et al.,(2017).

Further it was found in hypotheses two that there was a negative insignificant relationship between non-debt tax shield and firm value proxy for price to earnings ratio but a positive and significant relationship between non-debt tax shield and firm value proxy for Tobin’s Q. It implied that non-

debt tax shield would improve firm value in terms of Tobin’s Q. Specifically, firm management would exploit the tax deductibility of interest payment to reduce their tax payment hence the trade- off theory predicted that firms tended to issue more debts when corporate tax rates were higher to improve firm value (Baker & Martin, 2011).

There is a negative and significant relationship between debt tax shield and firm value using price to earnings ratio proxy and a positive significant relationship between debt tax shield and firm value using Tobin’s Q proxy. The tax benefits of debt were the tax savings that resulted from deducting interest from taxable earnings. The intentional debt focused structure caused a company to pay a high amount of interest expenses. Since tax regulation typically allows interest expenses to be tax-deductible, the income of the company that is subject to taxation can be lowered. Therefore, using this strategy a company’s tax burden will also be reduced. According to Gbonjubola (2015), the use of higher levels of debt, when compared to equity, influences taxation such that enterprises with high debt funding would enjoy tax reliefs on interest charges unlike dividend. This is so as interest is exempt from tax and charged until the borrowing company's profit is calculated. This makes debt funding more appealing to businesses with the goal of transferring income for tax avoidance purposes.

Audit committees can better ensure the quality of information. Due to the presence of independent directors and financial experts on the audit committee who substantially improve the committee's efficiency in monitoring and controlling financial information and external audits. In this study, we found that audit committee size had a negative significant moderating effect on the relationship between non-debt tax and firm value when proxied by Tobin Q. it implied that increasing audit

committee size would not improve the value of the firm when a non-debt tax savings strategy was activated. The result supported the one by Yang and Krishnan (2005) which showed that audit committee size negatively correlated with tax saving strategy. It implied that an audit committee with the minimum number of members would be relevant to financial information quality and thus improve firm value. Specifically, we opined that when audit committee was large, control and accounting processes and financial monitoring functions decreased and also, also reflected in a decreased firm value as reported in our empirical finding

Conversely, Anderson, Mansi and Reeb (2004) found that large committees were likely to protect and control the accounting and financial processes by providing greater transparency in financial reporting. Therefore, a very large audit committee may greatly diffuse responsibilities. Audit committee members are the only ones who are able to identify and evaluate risky tax strategies. In addition, the directors were likely to focus on aggressive tax planning which positively affected firm value as seen in this study. However, the resulting positive result was reflected on price to earnings when a non-debt tax strategy was activated. The findings supported the fact that audit committee members were expected to solve problems that were related to the complexity of financial information, the assessment of subjective accounting policies, understanding auditors’- decisions, and the quality of financial reports. The result supported the ones by Dhaliwal, Naiker, and Navissi (2010).

## CHAPTER SIX

**SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

## Summary of Findings

The findings of the Corporate Tax Saving Strategy and Firm Value in Non firm in Nigeria are summarized as follows

* + 1. It was revealed that there was a positive and significant relationship between cash effective tax and firm value proxy of price to earnings ratio but a positive insignificant relationship between cash effective tax rate and firm value proxy for Tobin Q.
    2. There was a positive and insignificant relationship between income effective tax and firm value proxy for price to earnings ratio, and a negative insignificant relationship between income effective tax and firm value proxy for Tobin Q.
    3. We found a negative and insignificant relationship between non-debt tax and firm value proxy for price to earnings ratio, and a positive significant relationship between non-debt tax and firm value proxy for Tobin Q.
    4. In this study, a negative and significant relationship between debt tax and firm value proxy for price to earnings ratio, and a positive significant relationship between debt tax and firm value proxy for Tobin’s Q.
    5. It is revealed that Audit Committee size has a positive and negative significant moderating effect on the relationship between tax saving strategy and firm value. The positive effects is noticed on the relationship between Non debt tax and price to earning while the negative effect is noticed on the relationship between non debt tax and Tobin’s

## Conclusion

In this study, the moderating effect of audit committee size on the relationship between tax saving strategy and firm value of listed non-finance firms in Nigeria was evaluated . The scope of this study was a 10-year period, ranging from 2011 to 2020. Two dependent variables of firm value measurements, Tobin Q and Price to earnings ratio, were employed to construct the econometric models which were employed in this study. The independent variables of interest which we employed to ascertain the possible moderating effect included non-debt tax shield, debt tax shield, income effective tax rate and cash effective tax rate while audit committee size represented the moderator variable. Specifically, we conducted a pre regression analysis which included descriptive statistics, correlation matrix, and normality of residua analysis. Basically, the panel ordinary least square regression analysis was diagnosed to ensure if it violated the basic Gauss Markov Theorem and assumptions (Woodridge, 2002). These post regression test included tests for multicollinearity, homoscedasticity as well as test for fixed and random effect. In this study, hierarchical regression, least square dummy variable regression and moderated regression analysis techniques were employed to test the hypotheses of the study.

## Recommendations

In this study policy recommendations are provided based on findings for results that were observed to be statistically significant since we could confidently attest to their outcomes when given practical recognition. Hence, we recommended that:

* + 1. Corporate policies that allowed the sole application of increased cash effective tax as a corporate saving strategy for non-financial firms should be considered. However, this policy was selective on price to earnings ratio as against the firm value measure of Tobin

Q. This recommendation was consistent with the positive effect which cash effective tax strategy posed on firm value.

* + 1. The application of income effective tax strategy in a bid to improve firm value in terms of price to earnings and Tobin Q value should be relaxed. The recommendation was consistent with the insignificant effect which income effective tax strategy posed on both measures of firm value.
    2. Corporate policies that allowed the sole application of non-debt (such as depreciation expenses) as a tax saving strategy for non-financial firms should be considered. The recommendation was consistent with the positive effect which non-debt tax strategy poses on firm value
    3. In this study, we found that the application of more debt tax as a saving strategy was detrimental to firm value measured in terms of price to earnings ratio but positive for firm value measure of Tobin Q hence, we advocated a re-examination of policies that tended to increase leverage facilities (debt financing) of non-financial listed firms in Nigeria.
    4. We recommended the use of a non-debt tax saving strategy as a tool for improved value (with respect to Tobin Q). However, the increase in the application of a non-debt strategy should be intertwined with a deliberate increase in the size of its audit committee. The application of such vital policies was empirically verified hence, we believed it would go a long way in reducing agency rift and enhance the firm value of non-financial companies in Nigeria.

## Suggestion for Further Studies

Just like most previous related studies, this research work would not be complete without providing few suggestions for other scholars who might wish to carry out similar studies. Consequently, we suggested that, similar studies should be carried out by incorporating other companies that are within the service subsector. Furthermore, corporate governance variables could also be considered because we believe that such inclusions would provide a broader scope and a wide representation of possible policy recommendations.

## Contribution to Knowledge

This study which harped on the moderating role of audit committee size on the relationship between tax saving strategy and firm value is very unique. First, we succesfully provided vital empirical evidence that encompased more recent information (year 2020 data) which related studies conducted in Nigeria had sparsely employed. In relation to the measurments of a tax saving strategy, we successfully explored more measurment options (income tax saving, non-debt tax and debt tax) by bringing into the literarure of tax saving firm performance nexus far fetching and robust information which would accommodate a wider spectrum of the study.

# REFERENCES

Abdul-Wahab, N.S. (2010). *Tax planning and corporate governance: Effect on shareholders’ valuation.* Unpublished PhD hesis, University of Southampton, UK. Adegbie, F.F.,

Aiken, L.S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions.

Thousand Oaks, CA: Sage.Bradley, R. H., & Corwyn, R. F. (2000). *American Tax Association* 25 (1), 1–2

Akintoye, I. R. & Isiaka, B. (2019). Evaluation of integrated reporting and the value of listed manufacturing firms in Nigeria, *European Journal of Accounting, Auditing & Finance Research*, 7(7), 31-59.

Amidu, M., Kwakye, T.O, Harvey, S. & Yorke, S.M (2016). Do firms manage earnings and avoid tax in corporate social responsibility? *Journal of Accounting and Taxation.* 8(2),1127.

Anderson, R.C., S.A. Mansi & D.M. Reeb (2004) ‘Board Characteristics, Accounting Report Integrity, and the Cost of Debt’, *Journal of Accounting and Economics*, 37 (3), 315–342.

Armstrong, C.S., Blouin, J.L., & Larcker, D.F. (2013). Corporate governance, incentives and tax avoidance, Rock Centre for corporate governance *working paper*

Ayemere, I.L & Afensimi, E. (2015). “Audit Committee Attributes and Earnings Management: Evidence from Nigeria”, *International Journal of Business and Social Research*, 5(4), 14 – 23.

Ayers, N., Jiang, R., & Laplante, N. (2009). Taxable Income As a performance Measure: The effect of tax lanning and earnings quality. *Contemporary Accounting Research*, 26(1), 15- 54.

Bao, B. H., & Bao, D. H. (1989). Arm empirical investigation of the association N between productivity and firm value. *Journal of Business Finance &Accounting, 16*(5), 699-717.

Barth, C & Carlsnan, K (1998). General explanation on tax legislation enacted in (1997). The joint committee on taxation congress of (Beasley, Carcello, Hermanson, & Neal, (2010). Audit committee Oversight Process. The Contemporary Accounting Research 26(1)63:126

Beaver, W. Lambert. R., **&** Morse, D. (1980).The information content of security prices. *Journal of Accounting and Economics,* 2(1), 3-28. *Journal of Multinational Financial Management,* 17(2),142-154**.**

*Bhagiawan, Giovan & Mukhlasin Mukhlasin (2020).* Effect of Corporate Governance on Tax Planning & Firm Value. International journal for commence and finance

Blaufus, K., Bob, J., Lorenz, D., & Trinks, M. (2015).How will the court decide?–Tax experts versus laymen’s predictions. *European Accounting Review*, 1–22.

Blaufus, K., Möhlmann, A., & Schwäbe, A. (2016). Corporate tax minimization and stock price reactions,arqus Discussion Paper, No. 204, Arbeitskreis Quantitative Steuerlehre (ARQUS), Berlin.

Bobek, D. D., & Hatfield, R. C. (2003). An investigation of the theory of planned behaviour and the role of moral obligation in tax compliance. *Behavioural Research in*

*Accounting*, 15(1), 13–38.

Brown, K. B. (2011). *A comparative look at regulation of corporate tax avoidance*, 12. Springer Netherlands.

Burgasher, T & Dicker, V (1997). Vehicle taxation in the European Union (1997).European Commission. Brussels. Refxx1/301/98-En.Chamber English Dictionary. New Delhi: Allide Publishers

Chadefaux, M. & Rossignol J.-L. (2006) ‘La performance fiscale des entreprises’, Revue de Droit Fiscal, 30(1), 1450–1456

Chen, S., Chen, X., Cheng, Q. & Shevlin, T.J. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, 95, 41-61.

Choles, M. S., & Wolfson, M. A. (1992). *Taxes and Business Strategy: A Planning Approach*.

New Jersey: Prentice Hall.

Christian Aid (2009).Christian aid pushes for tax justice in war on poverty. Press. Retrieved Christine, A., A. (2014). *The effects of corporate tax planning on firm value for companies listed*

*at the Nairobi securities exchange .*M.B.A, School of Business, University of Nairobi, Nairobi.

Chukwudi, U.V., Okonkwo, O.T. & Asika, E.R. (2020). Effect of tax planning on firm value of quoted consumer good manufacturing firms in Nigeria. International Journal of Finance and Banking Research, 6(1),

Cooper, W.W., & Ijiri, Y. (1984). *Kohler’s dictionary for accountants*. New Delhi: Prentice Hall of India Private Ltd.

Cooter, R. (1998). Expressive law and economics. *The Journal of Legal Studies*, 27(2), 585–608. Cooter, R. (2000). Do good laws make good citizens? An economic analysis of internalized norms.

*Virginia Law Review*, 1577–1601.

Curry, P. A., Hill, C. A., & Parisi, F. (2007). Creating failures in the market for tax planning.

*Virginia Tax Review*, 26(4), 943-969.

Danielle, H., Thomas, C. O., & John, D. P. (2013). The influence of a firm’s business strategy on its tax aggressiveness. DeAngelo, H., and R.W. Masulis, "Optimal Capital Structure under Corporate and Personal Taxation," *Journal of Financial Economics* 8, 3-29 *JEL classification*: H25, L21, L22, M19,

De Waegenaere, A., & Wielhouwer, J. L. (2011). Dynamic tax depreciation strategies. OR Spectrum, 33, 419–444. Edgerton, J. (2010). Investment incentives and corporate tax asymmetries. *Journal of Public Economics*, 94, 936–952.

Desai, M & Dharmapala, D (2009). *Corporate tax avoidance and firm value*. Lindquist Collegeof Business, University of Oregon Eugene, or 97403, USA.

Desai, M. A. & Dharmapala, D. (2006). Corporate tax avoidance and high- powered incentives.

*Journal of Financial Economics*, 79, 145-179.

Desai, M. A. & Dharmapala, D. (2009). Corporate tax avoidance and firm value. *The Review of Economics and Statistics*, 91,537-546.

Desai, M. A. & Dharmapala, D. (2009). Earnings management, corporate tax shelters, and book- tax alignment. *National Tax Journal*, 62, 169-186.

Desai, M. A., & Dharmapala, D. (2008). Tax and corporate governance: An economic approach.

*MPI Studies on Intellectual Property, Competition and Tax Law*, 3,13-30.

Desai, M. A., & Hines, J. R. Jr. (2002). Expectations and expatriations: Tracing the causes and consequences of corporate inversions. *National Tax Journal, 55*, 409–441.

Desai, M.A (2012). A Better Way to Tax U.S Businesses. Harvard Business Review.

Desai, M.A., Dyck, A. & Zingales, L. (2007). “Theft and taxation”. *Journal of Financial Economics,* 84, 591 – 623.

Dhaliwal, D. & Wang, S. (2016). The effect of book income adjustment in the 1986 alternative minimum tax on corporate reporting. *Journal of Accounting and Economics*, 15 (1), 7-26.

Dhaliwal, D., Naiker, V., & Navissi, F. (2010). The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees.

*Contemporary Accounting Research*, 27(3), 787-827. https://doi.org/10.1111/j.1911- 3846.2010.01027.x

Dyreng, S., Hanlon, M., & Maydew, E. (2010). The effects of executives on corporate tax avoidance. The Accounting Review, 85(4), 1163–1189.

Egger Peter & Christian Keuschnigg & Valeria Merlo & Georg Wamser, 2014. "[Corporate Taxes](https://ideas.repec.org/a/aea/aejpol/v6y2014i2p54-93.html) [and Internal Borrowing within Multinational Firms](https://ideas.repec.org/a/aea/aejpol/v6y2014i2p54-93.html)," [*American Economic Journal:*](https://ideas.repec.org/s/aea/aejpol.html)[*Economic Policy,*](https://ideas.repec.org/s/aea/aejpol.html) *American Economic Association*, 6(2), 54-93.

Fagbemi, T.O., Olaniyi, O.F. & Ogundipe, A.A. (2019). The corporate tax planning and performance of systematically important banks in Nigeria. *Economic Horizons*, 21(1), 15- 16.

Fajrin, A., Diana, N. & Mawardi, M. C. (2018). The effect of tax planning on company value with company transparency as a moderation variable (Study on Manufacturing Companies on the Indonesia Stock Exchange Period 2013-2016). *Journal of Accounting Research, 7*(2).

Farrar J. & Mawani A (2008). Debt-Equity Limitations in Thin Capitalization Rules: Annual Conference Paper, SSRN: [https://ssrn.com/abstract=1080639](https://ssrn.com/abstract%3D1080639) or [http://dx.doi.org/10.2139/ssrn.1080639](https://dx.doi.org/10.2139/ssrn.1080639)

Fashina, O. A., Asaleye, A.J., Ogunjobi, J.O., & Lawal, A.I. (2018). Foreign aid, human capital and economic growth nexus: Evidence from Nigeria. *Journal of International Studies*, 11(2), 104-117.

Frank Z.Murray & Vidhan K. Goyal (2008). Capital Structure Decisions: Which Factors Are Reliably Important?

Frischmann, P. J., Shevlin, T., & Wilson, R. (2008).Economic consequences of increasing the conformity in accounting for uncertain tax benefits. *Journal of Accounting and Economics*, 46(2), 261–278.

Ftouhi, K., Ayed, A., & Zemzem, A. (2010). Tax planning and firm value: Evidence from European companies. *International Journal of Economics and Strategic Management of Business Process,4,*

Gallemore, J. Maydew, E. L.Thornock, & J. R. (2014). The reputational costs of tax avoidance.

*Contemporary Accounting Research*, 31(4), 1103–1133

Geetha, C. A. (2012). A Study on Tax Planning Measures Adopted by the Salaried Class in Kerala', thesis, Mahatma Ghandi University, Goh Beng Wee, Jemmy Lee, Chee Yeow Lim (2016). The effect of corporate tax avoidance on cost of equity. The Accounting Review 91. Meridian Allenpress.com

Graham, J. R., & Tucker, A. L. (2006). Tax shelters and corporate debt policy. *Journal of Financial Economics*, 3, 563-594. <http://dx.doi.org/10.1016/j.jfineco.2005.09>. 002

Guenther D.A., Matsunaga, S.R, & Williams, B.M (2016) Is tax avoidance related to firm risk.

*Accounting Review*.

Guenther, D.A, Matsunaga, S. R & Williams, B. M (2012). Corporate tax aggressiveness and firm risk.

Gupta, S., & Newberry, K. (1997). Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16(1), 1-34.

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics,*127–178.

Hanlon, M., & Slemrod, J. (2009). What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics*, 93(1), 126–141.

Healy, P. M & Wahlen, J.M (1999). A review of the earnings management literature and it implications for standard setting *An International Journal of American Accounting Association* (AAA0 13(4), 365-383.

Hidayat, R., Wahyudi, S., Muharam, H., Shaferi, I., & Puspitasari, I. (2019). The improve level of firm value with liquidity, debt policy and investment in Indonesian emerging market, Revista Espacious, 40(40), 1

Hill, M. D., Kubick, T. R., Lockhart, G. B., & Wan, H. (2013). The effectiveness and valuation of political tax minimization. *Journal of Banking* & *Finance*, 37(8), 2836–2849.

Hoffman, W. H. (1961).The theory of tax planning. *The Accounting Review,* 36(2), 274–281.

Hoi-wu, C.K & Zhang, H (2013). Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from Irresponsible CSR Activities. *The Accounting Review.* 88(6), 2025-2059.

Hossain D. Mahboob & Khan A. Rahman (2006): *Audit Committee: A Summary of the Findings of Some Existing Literature.* Published in: The Cost and Management No. 34(5), 40-57.

Hussaini B., & Gugong, B. (2015). Audit committee characteristics and earnings quality.

*International Journal of Accounting, Auditing and Taxation*, 2 (8), 216-227.

Ihuoma, C.A. (2013). *The Impact of Tax Avoidance and Evasion to the Economic Development of a Nation: A case study of Abia state.* (Unpublished Bachelor Degree Project in Accountancy). Caritas University, Amoji Nike, Enugu State.

Ilaboya, O.J., Izevbekhai, M.O., & Ohiokha, F.I. (2016). Tax planning and firm value: a review of literature. *Business and Management Research,* 5(2)**,** 81-91.

Janssen, B. & Buijnk, W. (2000). Determinants of the Variability of Corporate Effective Tax Rates: Evidence for the Netherlands. *MARC Working Paper*, 2000-08.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics,* 3(4), 305-360.

Jeongho, K & Chaenling, V (2017). Corporate tax reform and wages theory and evidence.*Journal of the Council of Economic Advisers*.

John-Akamelu, R. C., Ifurueze, M. S. & Iyidiobi, F. C. (2018).Tax aggressiveness and firm size: evidence from Nigerian deposit money banks. *International Journal of Advanced Academic Research, 4*(11), 50-66.

Joseph U. M., Ben-Caleb, E., Adedoyin I. L. & Uche T. A. (2020). Firm size and tax saving behaviour of listed companies in Nigeria. *Academic Journal of Interdisciplinary Studies*, 9(3), 184 - 193.

Josson, B. (2007). Does the size matter?The relationship between size and profitability of Icelandic firms. *Bifrost Journal of Social Sciences*, 1, 43-55.

Kawor, S. & Kportorgbi, H. K. (2014). Effect of Tax Planning on Firms Market Performance: Evidence from Listed Firms in Ghana, *International Journal of Economics and Finance*, 6(3), 162-168.

Kiabel, B. D. & Akenbor, C. O. (2014). Tax Planning and Corporate Governance in Nigerian Banks**.** *European Journal of Business and Management*, 6(2), 235-243.

Kim, K.-S. & Sin, S.-C. J. (2011). Selecting quality sources: Bridging the gap between the perception and use of information sources. *Journal of Information Science*, 37 (2), 182– 192.

Kirchler, E., Maciejovsky, B., & Schneider, F. (2003). Everyday representations of tax avoidance, tax evasion, and tax flight: Do legal differences matter? *Journal of Economic Psychology*, 24(4), 535–553.

Klein (2002). Audit Committee, Board of Director Characteristic and Earning Managements. *The Accounting Review*, 77.

Kolay, M., Schallheim, J., & Wells, K. (2013). A New Measure for Non-debt Tax Shields and the Impact on Debt Policy. Retrieved from <http://glxy.swjtu.edu.cn/UpLoadFiles/files/2014-05->16/20142416112400.pd

L Isola, A. I., Frank, A. & Leke, B. K. (2015). Can Nigeria achieve millennium development goals? *Journal of Social Science Research 1*(6), 72-78.

Lakhotia, R. N., & Lakhotia, S. (1998). *Corporate tax planning*. New Delhi: Vision Books.

Lawal, A. (2020). Firm size and tax saving behaviour of listed companies in Nigeria. Academic

*Journal of Interdisciplinary Discipline*, 19(1)

Lawal, A. I., Asaleye, A.J., IseOlorunkanmi, J. & Popoola, O. R. (2018c). Economic growth, agricultural output and tourism development in Nigeria: An application of the ARDL bound testing approach. *Journal of Environmental Management and Tourism*, *9*(4), 786

- 794.

Lee, B. B. Alfreda, D. & Minton, S. (2015). Theories and Empirical Proxies for Corporate Tax Avoidance. *Journal of Applied Business and Economics, 17*(3).

Lee, J. (2009). Does size matter in firm performance? Evidence from U.S public firms

*International Journal of the Economics of Business, 16*(2), 189-203.

Lemmon, Michael L.& Karl V. Lins (2003) “Ownership Structure, Corporate Governance, and Firm Value: Evidence from the East Asian Financial Crisis.” *Journal of Finance* 58(4): 1445-1468.

Lestari N. &Wardhani R. (2015). The Effect of the Tax Planning to Firm Value with Moderating Board Diversity, *International Journal of Economics and Financial Issues*, 5, 315-323

Lestari, N., & Wardhani, R. (2015). The effect of the tax planning to firm value with moderating board diversity. International Journal of Economics and Financial Issues, 5, 315- 323.

Lisowsky, P., Robinson, L., & Schmidt, A. (2013).Do publicly disclosed tax reserves tell us about privately disclosed tax shelter activity? *Journal of Accounting Research*, 51(3), 583–629.

Loretz, S. & Moore, P.J. (2009). Corporate tax competition between firms**.** Madugba, J. U., Ben- Caleb, E., Agburuga, U. T., &

Mary Margaret Frank, Luann Lynch & Sonja Olhalt Rego (2012).Tax reporting aggressiveness and its relation to aggressive financial reporting. American Accounting Association. 84, 2.

Maydew F.M. & Erickson M.. (2010). Investments on tax planning. *Journal of American taxation association* 20,

McGuire, S., T. Omer, & D. Wang. 2012. Tax planning: Does tax-specific industry expertise make a difference? *The Accounting Review,* 87: 975-1003

Mills, L., M. Erickson, & E. Maydew. 1998. Investments in tax planning. Journal of the

Mills, L.F& Newsberry, K.J (2001). The influence of tax and non-tax costs on book-tax reporting difference: public and private firms. *The Journal of American Taxation Association.* 23(1), 1-19.

Minnick, K., & Noga, T. (2010). Do corporate governance characteristics influence tax management? *Journal of Corporate Finance*, 16, 703-718.

Modigliani, F., & Miller, M. (1961).Corporate income taxes and the cost of capital: A correction.

*The American Economic Review,* 53(3), 433-444.

Moses, T., Ofurum, C. O. & Egbe, S. (2016). Audit committee characteristics and quality of financial reporting in quoted Nigerian banks. *International Journal of Advanced Academic Research*, 2(5), 1-8

Nanik, L.& Ratna, W. (2015). The Effect of the Tax Planning to Firm Value with Moderating Board Diversity, *International Journal of Economics and Financial Issues,5(Special issue)* 315-323

Nike, Yulisma, Zaitul, & Yunilma (2014). The Effect of Tax Planning and Corporat Governance on Firm Value. *Journal Fakultas Ekonomi*, 4(1).

Nurshamimi S. (2011).*Tax planning and corporate Governance: evidence from Shariah- compliant Companies,* Unpublished Masters’ Dissertation submitted in partial fulfilment of the requirements for the degree of Master of Accountancy, Universiti Teknologi Malaysia

Nwakaji, P.E. & Ewah, K.A. (2010).*Principles of Property Rating and Taxation.* Auchi: Prosper Prints.

Nwaobia A.N, Jerry K.D & Ayodeji A. T (2015) Corporate risk management and firms’value: Empirical evidence from selected listed manufacturing companies in Nigeria.*Program on policy, Conflict & Strategic Studies International Journal Series* 2(1)

Nwaobia N. Appolos, Kwarbai Jerry & Ogundajo O. Grace (2018) Tax Planning and Firm Value: Empirical Evidence from Nigerian Consumer Goods Industrial Sector Research *Journal of Finance and Accounting* [www.iiste.org](http://www.iiste.org/) ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online) 7(1).

Nwaobia, A.N., Kwarbai, J.D., & Ogundajo, G.O. (2016). Tax Planning and Firm Value: Empirical Evidence from Nigerian Consumer Goods Industrial Sector.*Research Journal of Finance and Accounting,* 7(12) ISSN 2222-28

Odunayo M. O. & John A. O. (2019). Corporate tax planning and financial performance in Nigerian non‐financial quoted companies. *African Development Review, 31*(2), 202– 215

OECD (1988). Harmful tax competition: An emerging global issue. More Information on the Harmful Tax Practices Work.

Ohlson. J.A (1995). Earnings, Book Value and Dividends in Equity Valuations, *Contemporary Accounting Research*.

Omesi, I. & Appah, E. (2020a). Tax structure and economic growth in Nigeria: An auto regressive distributive lag evidence from 1980 to 2018. International Journal of Innovations in Marketing and Accounting Research, 8(1), 108-124.

Oxfam (2009). Tax haven crackdown could deliver $12Obn a year to fight poverty-Oxfam.News.

Oyeshile O. Kayode & Adegbie F. Folajinmi (2020) Corporate Tax Planning and Financial Performance of Quoted Food and Beverages Firms in Nigeria. Journal of Finance and Accounting. Vol. 8, No. 6, 2020, pp. 266- 275. doi: 10.11648/j.jfa.20200806.13

Oyeyemi, G. O. & Onakayo A B. (2016).Tax Planning and Financial Performance of Nigerian Manufacturing Companies. *Advance Academic Research Social and Management Sciences*. 2(7).

Pocarno, T. (1986).Corporate Tax Rates: Progressive, Proportional, or Regressive. *Journal of the American Taxation Association.* 7(2), 17 – 31.

Pohan, C. A. (2013).*Tax Planning Strategy of Tax Planning and Business*. Jakarta: PT Gramedia Pustaka Utama.Galica, J. (2015). Corporate tax havens: analysis of an aggressive tax

approach as a strategic necessity for large multinational corporations. *Honors Scholar Theses*. 436.

Razali, M. W. M., Ghazali, S. S., Lunyai, J., & Hwang, J. Y. T. (2018). Tax Planning and Firm Value: Evidence from Malaysia. International Journal of Academic Research in Business and Social Sciences, 8(11), 210–222.

Rego, S. (2003).Tax-avoidance Activities of U.S. Multinational Corporations. *Contemporary Accounting Research, 20* (4), 1-35.

Robinson, J. R., Xue, Y., & M. H. Zhang, 2012. Tax planning and financial expertise in the audit committee. Working paper, University of Texas at Austin

Robinson, L. A., & Schmidt, A. P. (2013). Firm and investor responses to uncertain tax benefit disclosure requirements. *The Journal of the American Taxation Association*, 35(2), 85– 120.

Ruf, M. (2008). How can firms choose their leverage? – Tax planning for implementing tax induced debt finance how can firms choose their leverage, 30-31.

Salawu, R. O. & Adedeji, Z. A. (2017). Corporate governance and tax planning among non- financial quoted companies in Nigeria. *AFRREV,* 11 (3), 47, 42-59

Salawu, R. O., Ogundipe L. O. & Yeye O. (2017). Granger causality between corporate tax planning and firm value of non-financial quoted companies in Nigeria. *International Journal of Business and Social Science,8(9),91-103.*

Salihu, I. A. (2014). Investigating the determinants of corporate tax avoidance among Malaysian public listed companies (Doctoral Dissertation). International Islamic University Malaysia, Kuala Lumpu

Saunders, M., Lewis, P., & Thornhill, A. (2016). Research methods for business students (7th ed.).

Harlow, England: Pearson Education L

Scholes S.M. & Mark A.W. (1992). T*axes and Business Strategy: A Global Planning Approach.*

*Journal of International Business Studies.* 24(3).

Seyram, K. & Holy, K.K. (2014) Effect of Tax Planning on Firms Market Performance: Evidence from Listed Firms in Ghana; *International Journal of Economics and Finance*; 6(3); 2014

ISSN 1916-971X E-ISSN 1916-9728 Published by Canadian Center of Science and Education

Shefrin, H. M., & Statman, M. (1984). Explaining investor preference for cash dividend(s).

*Emerging Markets Quarterly,* 5**,** 39-49.

Siegfried, J.J. (1972). *The Relationship between Economic Structure and the Effect of Political Influence: Empirical Evidence from the Corporation Income Tax Program*, PhD. Dissertation, University of Wisconsin.

Silvy C. (2019). The effect of corporate tax planning on firm value. *Acc. Financial. Review 4* (1) 01 –04.

Slemrod, J. (2004). The economics of corporate tax selfishness. *National Tax Journal,* 57(4),877-899. Stanford University, Stanford. Aronmwan Edosa & Chinwuba okafor (2019). Corporate tax avoidance.

Review of measure and prospect. International Journal of Accounting and Finance (IJAF) 18.

Suandy Erly (2011). Perencanarn Pajak, Jakata, Salaemba Empat. The Guardian (2009) *Firms’ secret tax avoidance schemes cost UK billions: Investigation into the complex and confidential world of tax*. Tax Gap Reporting.

Tang, T.Y.H., Mo, P. & Chan, K. H. (2017). Tax collector or tax avoider? An investigation of intergovernmental agency conflicts. *The Accounting Review*, 92, 247-270.

Teja Adrian (2019). Tax Rate and Non-Debt Tax Shield, *Journal Riset Manajemen dan Bisnis (JRMB) Fakultas Ekonomi UNIAT* . 4(2), Juni 2019: 257 - 268 P-ISSN 2527–7502 E-

ISSN 258

*The British Accounting Review*, 44, 111-124. Wang (2010). *Tax Avoidance, Corporate Transparency, and Firm Value*” *Working Paper.*

Trade Union Congress (2009). The missing billions the UK tax gap. Touchstone Pamphlets Usman T. Onechojon, Okaiwele M. Izilin & Ndifreke Bassey Asuquo (2020) Corporate Tax

Planning, Board Compensation and Firm Value in Nigeria International Accounting and

Taxation Research Group, Faculty of Management Sciences, University of Benin, Benin City, Nigeria.

Wahab, N. S., & Holland, K. (2010). Tax planning, corporate governance and equity value.

Wang, L.L. (2010) Financial crisis, financial constraints and corporate tax avoidance. *Nankai Business Review* 19(1): 155–16

Watts, R. and Zimmerman, J. (1978). Towards a Positive Theory of the Determination of Accounting Standards. *The Accounting Review*, 53 (1), 112-134.

Wheatcroft, G.S.A. (1955). *The Modern Law Review: The Attitude of the Legislature and the Courts to Tax Avoidance. A University of London Special Lecture in Laws, delivered at the London School of Economics and Political Science,18(3),* 209-230.Wiley Online Library.

Wilson, R. 2009. An examination of corporate tax shelter participations. *The Accounting Review*

84 (3): 969–999.

Zangani. E & Caiumi, A (2017). Tax Uncertainty: Economic Evidence and Policy Response.

European Commission, *Taxation Paper (working paper)* No. 67.

Zemzem, A., & Ftouhi, K. (2013). Moderating Effects of Board of Directors on the Relationship between Tax Planning and Bank Performance: Evidence from Tunisia. *European Journal of Business and Management,* 5(32), 148-154.

Zemzem, A., & Ftouhi, K. (2016). External corporate governance, tax planning, and firm performance. *Corporate Ownership & Control*, 13(3-3), 523-532.

## APPENDIX

**. gen logmva=log( mvaa)**

**(327 missing values generated)**

**. summarize tobq peps ntax dtax efft ctfr mvaa audc, separator(9)**

**---**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable |** | **Obs** | **Mean** | **Std. Dev.** | **Min** | **Max** |
| **----------+---------------------------------------------------------**  **tobq | 753 5.019835 51.28759 -.508 1004.987** | | | | | |
| **peps |** | **746** | **15.28844** | **54.5037** | **-255** | **612.6667** |
| **ntax |** | **753** | **3.960755** | **4.013328** | **0** | **49.8755** |
| **dtax |** | **753** | **3.308003** | **4.49578** | **0** | **48.3931** |
| **efft |** | **753** | **-14.88962** | **217.1055** | **-4108.395** | **2520.393** |
| **ctfr |** | **753** | **27.59951** | **100.361** | **-370** | **1229.792** |
| **mvaa |** | **753** | **4.104656** | **51.29372** | **-.6577** | **1004.055** |
| **audc |** | **741** | **5.496626** | **1.008907** | **2** | **9** |

**. tabstat tobq peps ntax dtax efft ctfr mvaa audc, statistics( mean sd min max sum ) by(year)**

**Summary statistics: mean, sd, min, max, sum by categories of: year (Year)**

**year | tobq peps ntax dtax efft ctfr mvaa audc**

**---------+--------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2011 |** | **1.520266** | **19.33707** | **4.427811** | **1.867232** | **-12.52141 21.66081** | | **.6087868** | **5.342105** |
| **|** | **1.184237** | **64.60194** | **5.237052** | **1.782124** | **39.31214 61.58331** | | **1.19612** | **.973689** |
| **|** | **.4824** | **-58** | **.0695** | **0** | **-157.0787 -241.5266** | | **-.4254** | **2** |
| **|** | **7.5227** | **490** | **36.1098** | **7.4509** | **74.0554 223.234** | | **6.7984** | **6** |
| **|** | **115.5402** | **1469.618** | **336.5136** | **141.9096** | **-951.6272 1646.222** | | **46.2678** | **406** |
| **2012 | 1.564095 28.97223 4.192064 2.588139 -4.757304 50.04138 .6485474 5.407895** | | | | | | | | |
| **|** | **1.302053** | **89.07855** | **4.918445** | **2.491782 46.65728** | | **161.832** | **1.320108** | **.9822102** |
| **|** | **.3105** | **-81.6667** | **.3661** | **0 -161.2288** | | **-53.1275** | **-.4593** | **2** |
| **|** | **6.809** | **612.6667** | **37.8059** | **10.3961 215.0447** | | **1229.792** | **5.8518** | **7** |
| **|** | **118.8712** | **2172.917** | **318.5969** | **196.6986 -361.5551** | | **3803.145** | **49.2896** | **411** |
| **2013 | 1.835661 15.40946 3.970979 2.695279 -28.12937 17.63591 .9262461 5.447368** | | | | | | | | |
| **|** | **1.819447** | **34.64536** | **3.072748** | **2.557111 133.2855** | | **98.88316** | **1.854904** | **.9577019** |
| **|** | **.3833** | **-93.5** | **.4414** | **0 -755.6673** | | **-370** | **-.4327** | **2** |
| **|** | **11.2986** | **245** | **17.6549** | **12.985 806.6755** | | **735.0643** | **10.7788** | **7** |
| **|** | **139.5102** | **1171.119** | **301.7944** | **204.8412 -2137.832** | | **1340.329** | **70.3947** | **414** |
| **2014 | 1.610729 16.21878 3.988288 3.012661 4.521179 21.51394 .6766776 5.473684** | | | | | | | | |
| **|** | **1.510139** | **29.39475** | **2.833386** | **3.072528** | **220.422 77.27456** | | **1.529502** | **.8713772** |
| **|** | **.2592** | **-39.5** | **.3365** | **0** | **-134.2676 -190.4219** | | **-.6042** | **4** |
| **|** | **8.8005** | **156.1429** | **18.1983** | **15.8754** | **1883.773 629.1075** | | **8.1547** | **7** |
| **|** | **122.4154** | **1232.627** | **303.1099** | **228.9622** | **343.6096 1635.059** | | **51.4275** | **416** |
| **2015 | 1.518218 13.62401 4.180918 3.981233 -9.877443 16.76658 .6015592** | | | | | | | | **---------**  **5.421053** |
| **|** | **1.365386** | **26.4543** | **3.059356** | **5.089178** | **77.68854** | **46.77178** | **1.393755** | **.9968371** |
| **|** | **.1241** | **-45.5417** | **.3893** | **0** | **-91.7694** | **-198.657** | **-.6128** | **3** |
| **|** | **7.7273** | **140.3333** | **20.0943** | **28.7763** | **581.7729** | **282.9511** | **7.2742** | **8** |
| **|** | **115.3846** | **1035.424** | **317.7498** | **302.5737** | **-750.6857** | **1274.26** | **45.7185** | **412** |

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**---------+-------------------------------------------------------------------------------- 2016 | 1.289707 12.36399 3.841926 4.503687 -8.089311 26.06357 .3977197 5.513158**

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **|** | **1.042799** | **28.4785** | **3.408457** | **6.707317 144.6076** | | **69.23156** | **1.062569** | **.9864877** |
| **|** | **.279** | **-61.9776** | **.1954** | **0 -174.0567** | | **-81.5812** | **-.5829** | **4** |
| **|** | **5.3102** | **182.2727** | **26.369** | **48.3931 1179.322** | | **336.9309** | **4.3363** | **8** |
| **|** | **98.0177** | **939.6629** | **291.9864** | **342.2802 -614.7876** | | **1980.832** | **30.2267** | **419** |
| **-------+--------------------------------------------------------------------------------**  **2017 | 1.439442 25.16912 3.602922 5.092492 -76.53405 48.10172 .554479 5.684932** | | | | | | | | |
| **|** | **1.36915** | **80.57259** | **3.6312** | **6.345134 483.9574 131.1111** | | | **1.394143** | **1.177057** |
| **|** | **.3212** | **-73** | **0** | **0 -4108.395 -112.9458** | | | **-.568** | **4** |
| **|** | **8.9926** | **512** | **20.4867** | **36.2661 586.5471 762.4883** | | | **8.0957** | **9** |
| **|** | **109.3976** | **1912.853** | **273.8221** | **387.0294 -5816.588 3655.731** | | | **42.1404** | **415** |
| **-------+--------------------------------------------------------------------------------**  **2018 | 1.320485 14.11785 3.569611 4.137656 -37.50113 17.39301 .4028893 5.707692** | | | | | | | | |
| **|** | **1.199821** | **71.45811** | **2.988725** | **5.293841 100.0123 60.24324** | | | **1.232113** | **1.02657** |
| **|** | **.383** | **-82.5** | **0** | **0 -719.4685 -249.1865** | | | **-.6076** | **4** |
| **|** | **7.8446** | **470** | **18.7583** | **29.9054 157.3957 325.4521** | | | **6.9417** | **8** |
| **|** | **99.0364** | **1030.603** | **267.7208** | **310.3242 -2812.585 1304.476** | | | **30.2167** | **371** |
| **2019 | 1.219297 3.472948 3.504784 2.690108 32.32002 39.18538 .3120893 5.625** | | | | | | | | |
| **|** | **1.115562** | **36.54501** | **2.940438** | **3.270002 349.6948** | | **159.1122** | **1.117975** | **1.106161** |
| **|** | **.2572** | **-255** | **.0015** | **0 -229.4768** | | **-50.655** | **-.5903** | **3** |
| **|** | **6.7536** | **99** | **15.2686** | **16.2461 2520.393** | | **1227.492** | **5.7896** | **8** |
| **|** | **91.4473** | **253.5252** | **262.8588** | **201.7581 2424.001** | | **2938.903** | **23.4067** | **405** |
| **2020 | 39.01853 2.707603 4.342192 2.458434 -7.518835 16.95032 38.05236 5.386667** | | | | | | | | |
| **|** | **164.1526 26.91147** | | **6.541196** | **4.386605** | **60.89621** | **31.9469** | **164.1833** | **.9849315** |
| **|** | **-.508 -185.0606** | | **0** | **0** | **-67.9443** | **-19.4789** | **-.6577** | **2** |
| **|** | **1004.987 59.5745** | | **49.8755** | **33.9234** | **393.7771** | **210.36** | **1004.055** | **7** |
| **|** | **2770.316 186.8246** | | **308.2956** | **174.5488** | **-533.8373** | **1203.473** | **2701.717** | **404** |
| **Total | 5.019835 15.28844 3.960755 3.308003 -14.88962 27.59951 4.104656 5.496626** | | | | | | | | |
| **|** | **51.28759** | **54.5037** | **4.013328** | **4.49578 217.1055** | | **100.361** | **51.29372** | **1.008907** |
| **|** | **-.508** | **-255** | **0** | **0 -4108.395** | | **-370** | **-.6577** | **2** |
| **|** | **1004.987** | **612.6667** | **49.8755** | **48.3931 2520.393** | | **1229.792** | **1004.055** | **9** |
| **|** | **3779.936** | **11405.17** | **2982.448** | **2490.926 -11211.89** | | **20782.43** | **3090.806** | **4073** |

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**. swilk tobq peps ntax dtax efft ctfr mvaa audc**

**Shapiro-Wilk W test for normal data**

**Variable | Obs W V z Prob>z**

**-------------+------------------------------------------------------**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **tobq |** | **753** | **0.05166** | **462.075** | **15.016** | **0.00000** |
| **peps |** | **746** | **0.43473** | **273.096** | **13.724** | **0.00000** |
| **ntax |** | **753** | **0.66322** | **164.096** | **12.482** | **0.00000** |
| **dtax |** | **753** | **0.68325** | **154.334** | **12.332** | **0.00000** |
| **efft |** | **753** | **0.20488** | **387.415** | **14.585** | **0.00000** |
| **ctfr |** | **753** | **0.37403** | **305.001** | **13.999** | **0.00000** |
| **mvaa |** | **753** | **0.05148** | **462.162** | **15.017** | **0.00000** |
| **audc |** | **741** | **0.97005** | **14.382** | **6.520** | **0.00000** |

**. spearman tobq peps ntax dtax efft ctfr mvaa audc (obs=728)**

**| tobq peps ntax dtax efft ctfr mvaa audc**

**-------------+------------------------------------------------------------------------**

**tobq | 1.0000**

**peps | 0.2686 1.0000**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **0.2044** | **0.0330** | **1.0000** |  |  |  | | |
| **dtax |** | **-0.0261** | **-0.1927** | **0.0246** | **1.0000** |  |
| **efft |** | **0.0754** | **-0.2397** | **0.0285** | **-0.0127** | **1.0000** |
| **ctfr |** | **-0.0381** | **0.5367** | **0.0014** | **-0.1750** | **-0.2755** | **1.0000** |  |  |
| **mvaa |** | **0.9363** | **0.3104** | **0.1821** | **-0.1028** | **0.0431** | **0.0211** | **1.0000** |  |
| **audc |** | **-0.0238** | **0.1265** | **-0.0622** | **-0.0141** | **-0.0623** | **0.1002** | **0.0369** | **1.0000** |

**MODEL 1: UNMODERATED REGRESSION**

**. reg peps ntax dtax efft ctfr logmva**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **430** |
| **-------------+----------------------------------** | | | | **F(5, 424)** | **=** | **8.28** |
| **Model | 142161.957 5 28432.3914** | | | | **Prob > F** | **=** | **0.0000** |
| **Residual | 1456312.41 424 3434.69908** | | | | **R-squared** | **=** | **0.0889** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.0782** |
| **Total | 1598474.37 429 3726.04747** | | | | **Root MSE** | **=** | **58.606** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-1.333428** | **.8375411** | **-1.59** | **0.112** | **-2.979678** | **.3128212** |
| **dtax |** | **-.8624289** | **.5460152** | **-1.58** | **0.115** | **-1.935663** | **.2108048** |
| **efft |** | **.0501873** | **.0311185** | **1.61** | **0.108** | **-.0109785** | **.111353** |
| **ctfr |** | **.2016528** | **.0383075** | **5.26** | **0.000** | **.1263567** | **.276949** |
| **logmva |** | **4.783535** | **1.633395** | **2.93** | **0.004** | **1.572976** | **7.994094** |
| **\_cons |** | **29.3461** | **4.897925** | **5.99** | **0.000** | **19.71887** | **38.97334** |

**------------------------------------------------------------------------------**

**. vif**

**Variable | VIF 1/VIF**

**-------------+----------------------**

|  |  |  |
| --- | --- | --- |
| **ctfr |** | **1.06** | **0.941675** |
| **efft |** | **1.05** | **0.948927** |
| **ntax |** | **1.04** | **0.956968** |
| **logmva |** | **1.03** | **0.970778** |
| **dtax |** | **1.03** | **0.971093** |

**-------------+----------------------**

**Mean VIF | 1.04**

**. hettest**

**Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance**

**Variables: fitted values of peps**

**=**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **chi2(1)** |  | **144.57** |  |  | |
| **Prob > chi2** |  | **0.0000** |  |
| **. xtreg peps ntax dtax** |  | **efft ctfr mvaa,** | **fe** |
| **Fixed-effects (within)** |  | **regression** |  | **Number of obs =** | **746** |
| **Group variable: croid** |  |  |  | **Number of groups =** | **76** |
| **R-sq:**  **within = 0.0191** |  |  |  | **Obs per group:**  **min =** | **7** |

**=**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **between =** | **0.0260** |  | **avg** | **=** | **9.8** |
| **overall =** | **0.0201** |  | **max** | **=** | **10** |
|  |  | **F(5,665)** |  | **=** | **2.59** |
| **corr(u\_i, Xb)** | **= 0.0180** | **Prob > F** |  | **=** | **0.0249** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.3375821** | **.6914574** | **-0.49** | **0.626** | **-1.695285** | **1.020121** |
| **dtax |** | **-.2283812** | **.5655246** | **-0.40** | **0.686** | **-1.33881** | **.8820477** |
| **efft |** | **.0166501** | **.009233** | **1.80** | **0.072** | **-.0014792** | **.0347794** |
| **ctfr |** | **.0601424** | **.0202909** | **2.96** | **0.003** | **.0203004** | **.0999845** |
| **mvaa |** | **.0107628** | **.0390579** | **0.28** | **0.783** | **-.065929** | **.0874545** |
| **\_cons |** | **15.91117** | **3.678076** | **4.33** | **0.000** | **8.689133** | **23.13321** |

**-------------+----------------------------------------------------------------**

|  |  |  |
| --- | --- | --- |
| **sigma\_u |** | **21.961856** |  |
| **sigma\_e |** | **52.16517** |
| **rho |** | **.15055998** | **(fraction of variance due to u\_i)** |
| **------------------------------------------------------------------------------** | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **F test that all u\_i=0: F(75, 665) = 1.68** | **Prob** | **> F =** | **0.0005** |
| **. estimate store fe** |  |  |  |
| **. xtreg peps ntax dtax efft ctfr mvaa, re** |  |  |  |
| **Random-effects GLS regression** | **Number of obs** | **=** | **746** |
| **Group variable: croid** | **Number of groups** | **=** | **76** |
| **R-sq:** | **Obs per group:** |  |  |
| **within = 0.0167** | **min** | **=** | **7** |
| **between = 0.0912** | **avg** | **=** | **9.8** |
| **overall = 0.0266** | **max** | **=** | **10** |
|  | **Wald chi2(5)** | **=** | **17.49** |
| **corr(u\_i, X) = 0 (assumed)** | **Prob > chi2** | **=** | **0.0037** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. z P>|z| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.5352521** | **.5334828** | **-1.00** | **0.316** | **-1.580859** | **.510355** |
| **dtax |** | **-.8936171** | **.4664925** | **-1.92** | **0.055** | **-1.807926** | **.0206913** |
| **efft |** | **.0123544** | **.008963** | **1.38** | **0.168** | **-.0052127** | **.0299216** |
| **ctfr |** | **.0598756** | **.019574** | **3.06** | **0.002** | **.0215112** | **.09824** |
| **mvaa |** | **.019868** | **.0379401** | **0.52** | **0.601** | **-.0544932** | **.0942292** |
| **\_cons |** | **18.74659** | **3.526374** | **5.32** | **0.000** | **11.83502** | **25.65815** |

**-------------+----------------------------------------------------------------**

**sigma\_u | 12.815783**

**sigma\_e | 52.16517**

**rho | .05692157 (fraction of variance due to u\_i)**

**------------------------------------------------------------------------------**

**. estimate store re**

**. xttest0**

**Breusch and Pagan Lagrangian multiplier test for random effects**

**peps[croid,t] = Xb + u[croid] + e[croid,t]**

**Estimated results:**

**| Var sd = sqrt(Var)**

**---------+----------------------------- peps | 2970.653 54.5037**

**e | 2721.205 52.16517**

**u | 164.2443 12.81578**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test:** | **Var(u) = 0** |  | | |
| **chibar2(01) =** | | | **12.45** | |
| **Prob > chibar2 =** | | | **0.0002** | |
| **. hausman fe re** |  | |  |  |
| **|** | **---- Coefficients ----**  **(b) (B)** | | **(b-B)** | **sqrt(diag(V\_b-V\_B))** |
| **|** | **fe re** | | **Difference** | **S.E.** |
| **-------------+----------------------------------------------------------------** | | | | |
| **ntax |** | **-.3375821** | **-.5352521** | **.1976699** | **.4398971** |
| **dtax |** | **-.2283812** | **-.8936171** | **.6652359** | **.3196918** |
| **efft |** | **.0166501** | **.0123544** | **.0042956** | **.0022164** |
| **ctfr |** | **.0601424** | **.0598756** | **.0002669** | **.005346** |
| **mvaa |** | **.0107628** | **.019868** | **-.0091052** | **.0092775** |

**------------------------------------------------------------------------------**

**b = consistent under Ho and Ha; obtained from xtreg B = inconsistent under Ha, efficient under Ho; obtained from xtreg**

**Test: Ho: difference in coefficients not systematic chi2(5) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)**

**= 9.92**

**Prob>chi2 = 0.0776**

**. hireg peps (ntax) (dtax) (efft) (ctfr) ( logmva ) Model 1:**

**Variables in Model:**

**Adding : ntax**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **746** |
| **-------------+----------------------------------** | | | | **F(1, 744)** | **=** | **2.02** |
| **Model | 5985.62937 1 5985.62937** | | | | **Prob > F** | **=** | **0.1559** |
| **Residual | 2207151.22 744 2966.60111** | | | | **R-squared** | **=** | **0.0027** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.0014** |
| **Total | 2213136.85 745 2970.65349** | | | | **Root MSE** | **=** | **54.467** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ntax | -.7044769** | **.495954** | **-1.42** | **0.156** | **-1.678113** | **.269159** |
| **\_cons | 18.09324** | **2.806365** | **6.45** | **0.000** | **12.5839** | **23.60258** |

**------------------------------------------------------------------------------**

**Model 2:**

**Variables in Model: ntax Adding : dtax**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **746** |
| **-------------+----------------------------------** | | | | **F(2, 743)** | **=** | **4.82** |
| **Model | 28352.7768 2 14176.3884** | | | | **Prob > F** | **=** | **0.0083** |
| **Residual | 2184784.08 743 2940.49001** | | | | **R-squared** | **=** | **0.0128** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.0102** |
| **Total | 2213136.85 745 2970.65349** | | | | **Root MSE** | **=** | **54.226** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.5749589** | **.4959947** | **-1.16** | **0.247** | **-1.548677** | **.3987591** |
| **dtax |** | **-1.223002** | **.443437** | **-2.76** | **0.006** | **-2.093541** | **-.3524639** |
| **\_cons |** | **21.62221** | **3.07304** | **7.04** | **0.000** | **15.58933** | **27.65509** |

**------------------------------------------------------------------------------**

**R-Square Diff. Model 2 - Model 1 = 0.010 F(1,743) = 7.607 p = 0.006**

**Model 3:**

**Variables in Model: ntax dtax Adding : efft**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **746** |
| **-------------+----------------------------------** | | | | **F(3, 742)** | **=** | **3.61** |
| **Model | 31830.2031 3 10610.0677** | | | | **Prob > F** | **=** | **0.0131** |
| **Residual | 2181306.65 742 2939.76637** | | | | **R-squared** | **=** | **0.0144** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.0104** |
| **Total | 2213136.85 745 2970.65349** | | | | **Root MSE** | **=** | **54.22** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.5856391** | | **.4960309** | **-1.18** | **0.238** | **-1.55943** | **.388152** | |
| **dtax |** | **-1.210538** | | **.4435305** | **-2.73** | **0.006** | **-2.081262** | **-.3398142** | |
| **efft |** | **.0099137** | | **.0091151** | **1.09** | **0.277** | **-.0079808** | **.0278082** | |
| **\_cons |** | **21.77176** | | **3.075737** | **7.08** | **0.000** | **15.73357** | **27.80994** | |
| **------------------------------------------------------------------------------** | | | | | | | | |
| **R-Square Diff. Model 3** | | **- Model 2 = 0.002** | | **F(1,742) = 1.183 p =** | | | **0.277** |  |
| **Model 4:**  **Variables in Model:** | | **ntax dtax efft** | |  | | |  |  |
| **Adding :** | | **ctfr** | |  | | |  |  |
| **Source | SS** | | **df** | | **MS Number of obs** | | | **=** | **746** |
| **-------------+----------------------------------** | | | | | **F(4, 741)** | | **=** | **5.03** |
| **Model | 58549.3376 4 14637.3344** | | | | | **Prob > F** | | **=** | **0.0005** |
| **Residual | 2154587.52 741 2907.67546** | | | | | **R-squared** | | **=** | **0.0265** |
| **-------------+----------------------------------** | | | | | **Adj R-squared** | | **=** | **0.0212** |
| **Total | 2213136.85 745 2970.65349** | | | | | **Root MSE** | | **=** | **53.923** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.5991033** | **.4933361** | **-1.21** | **0.225** | **-1.567606** | **.3693996** |
| **dtax |** | **-1.131416** | **.4418746** | **-2.56** | **0.011** | **-1.998891** | **-.2639404** |
| **efft |** | **.0100311** | **.0090653** | **1.11** | **0.269** | **-.0077656** | **.0278279** |
| **ctfr |** | **.0598539** | **.0197449** | **3.03** | **0.003** | **.0210914** | **.0986164** |
| **\_cons |** | **19.89255** | **3.121088** | **6.37** | **0.000** | **13.76532** | **26.01978** |

**------------------------------------------------------------------------------**

**R-Square Diff. Model 4 - Model 3 = 0.012 F(1,741) = 9.189 p = 0.003**

**Model 5:**

**Variables in Model: ntax dtax efft ctfr Adding : logmva**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **430** |
| **-------------+----------------------------------** | | | | **F(5, 424)** | **=** | **8.28** |
| **Model | 142161.957 5 28432.3914** | | | | **Prob > F** | **=** | **0.0000** |
| **Residual | 1456312.41 424 3434.69908** | | | | **R-squared** | **=** | **0.0889** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.0782** |
| **Total | 1598474.37 429 3726.04747** | | | | **Root MSE** | **=** | **58.606** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-1.333428** | **.8375411** | **-1.59** | **0.112** | **-2.979678** | **.3128212** |
| **dtax |** | **-.8624289** | **.5460152** | **-1.58** | **0.115** | **-1.935663** | **.2108048** |
| **efft |** | **.0501873** | **.0311185** | **1.61** | **0.108** | **-.0109785** | **.111353** |
| **ctfr |** | **.2016528** | **.0383075** | **5.26** | **0.000** | **.1263567** | **.276949** |
| **logmva |** | **4.783535** | **1.633395** | **2.93** | **0.004** | **1.572976** | **7.994094** |
| **\_cons |** | **29.3461** | **4.897925** | **5.99** | **0.000** | **19.71887** | **38.97334** |

**------------------------------------------------------------------------------**

**R-Square Diff. Model 5 - Model 4 = 0.062 F(1,424) = 24.344 p = 0.000**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model** | **R2** | **F(df)** | **p** | **R2 change** | **F(df) change** | **p** |
| **1:** | **0.003** | **2.018(1,744)** | **0.156** |  |  |  |
| **2:** | **0.013** | **4.821(2,743)** | **0.008** | **0.010** | **7.607(1,743)** | **0.006** |
| **3:** | **0.014** | **3.609(3,742)** | **0.013** | **0.002** | **1.183(1,742)** | **0.277** |
| **4:** | **0.026** | **5.034(4,741)** | **0.001** | **0.012** | **9.189(1,741)** | **0.003** |
| **5:** | **0.089** | **8.278(5,424)** | **0.000** | **0.062** | **24.344(1,424)** | **0.000** |

**. reg tobq ntax dtax efft ctfr logmva**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **432** |
| **-------------+----------------------------------** | | | | **F(5, 426)** | **=** | **16.68** |
| **Model | 322177.117 5 64435.4234** | | | | **Prob > F** | **=** | **0.0000** |
| **Residual | 1645648.02 426 3863.02352** | | | | **R-squared** | **=** | **0.1637** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.1539** |
| **Total | 1967825.14 431 4565.71958** | | | | **Root MSE** | **=** | **62.153** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **.1752699** | **.8874498** | **0.20** | **0.844** | **-1.569055** | **1.919595** |
| **dtax |** | **-.0846213** | **.5783479** | **-0.15** | **0.884** | **-1.221392** | **1.052149** |
| **efft |** | **.0049561** | **.0329402** | **0.15** | **0.880** | **-.0597894** | **.0697017** |
| **ctfr |** | **.0597884** | **.039964** | **1.50** | **0.135** | **-.0187628** | **.1383396** |
| **logmva |** | **15.44807** | **1.727872** | **8.94** | **0.000** | **12.05185** | **18.84428** |
| **\_cons |** | **18.68724** | **5.186201** | **3.60** | **0.000** | **8.493515** | **28.88097** |

**------------------------------------------------------------------------------**

**. vif**

**Variable | VIF 1/VIF**

**-------------+----------------------**

|  |  |  |
| --- | --- | --- |
| **ctfr |** | **1.06** | **0.944964** |
| **efft |** | **1.05** | **0.951620** |

|  |  |  |
| --- | --- | --- |
| **ntax |** | **1.04** | **0.956991** |
| **dtax |** | **1.03** | **0.970316** |
| **logmva |** | **1.03** | **0.971122** |

**-------------+----------------------**

**Mean VIF | 1.04**

**. hettest**

**Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance**

**Variables: fitted values of tobq**

**chi2(1) = 2821.22**

**Prob > chi2 = 0.0000**

**. xtreg tobq ntax dtax efft ctfr logmva, fe**

|  |  |  |  |
| --- | --- | --- | --- |
| **Fixed-effects (within) regression** | **Number of obs** | **=** | **432** |
| **Group variable: croid** | **Number of groups** | **=** | **67** |
| **R-sq:** | **Obs per group:** |  |  |
| **within = 0.2521** | **min** | **=** | **1** |
| **between = 0.0750** | **avg** | **=** | **6.4** |
| **overall = 0.1611** | **max** | **=** | **10** |
|  | **F(5,360)** | **=** | **24.26** |
| **corr(u\_i, Xb) = -0.5288** | **Prob > F** | **=** | **0.0000** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-1.054989** | **1.071875** | **-0.98** | **0.326** | **-3.162911** | **1.052933** |
| **dtax |** | **.1397189** | **.7864866** | **0.18** | **0.859** | **-1.406966** | **1.686404** |
| **efft |** | **-.0068872** | **.033798** | **-0.20** | **0.839** | **-.0733534** | **.0595791** |
| **ctfr |** | **.0545378** | **.0447394** | **1.22** | **0.224** | **-.0334457** | **.1425212** |
| **logmva |** | **26.10532** | **2.381203** | **10.96** | **0.000** | **21.4225** | **30.78813** |
| **\_cons |** | **31.16477** | **5.945717** | **5.24** | **0.000** | **19.47207** | **42.85747** |

**-------------+----------------------------------------------------------------**

|  |  |  |
| --- | --- | --- |
| **sigma\_u |** | **36.395339** |  |
| **sigma\_e |** | **59.644134** |  |
| **rho |** | **.27132506** | **(fraction of variance due to u\_i)** |

**------------------------------------------------------------------------------**

**F test that all u\_i=0: F(66, 360) = 1.55 Prob > F = 0.0064 estimate store fe**

|  |  |  |
| --- | --- | --- |
| **. xtreg tobq ntax dtax efft ctfr logmva, re** |  | |
| **Random-effects GLS regression** | **Number of obs =** | **432** |
| **Group variable: croid** | **Number of groups =** | **67** |
| **R-sq:** | **Obs per group:** |  |
| **within = 0.2466** | **min =** | **1** |
| **between = 0.0857** | **avg =** | **6.4** |
| **overall = 0.1637** | **max =** | **10** |
|  | **Wald chi2(5) =** | **83.40** |
| **corr(u\_i, X) = 0 (assumed)** | **Prob > chi2 =** | **0.0000** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. z P>|z| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **.1752699** | **.8874498** | **0.20** | **0.843** | **-1.5641** | **1.914639** |
| **dtax |** | **-.0846213** | **.5783479** | **-0.15** | **0.884** | **-1.218162** | **1.04892** |
| **efft |** | **.0049561** | **.0329402** | **0.15** | **0.880** | **-.0596055** | **.0695177** |
| **ctfr |** | **.0597884** | **.039964** | **1.50** | **0.135** | **-.0185396** | **.1381164** |
| **logmva |** | **15.44807** | **1.727872** | **8.94** | **0.000** | **12.0615** | **18.83463** |
| **\_cons |** | **18.68724** | **5.186201** | **3.60** | **0.000** | **8.522476** | **28.85201** |

**-------------+----------------------------------------------------------------**

**sigma\_u | 0**

**sigma\_e | 59.644134**

**rho | 0 (fraction of variance due to u\_i)**

**------------------------------------------------------------------------------**

**. estimate store re**

**. xttest0**

**Breusch and Pagan Lagrangian multiplier test for random effects tobq[croid,t] = Xb + u[croid] + e[croid,t]**

**Estimated results:**

**| Var sd = sqrt(Var)**

**---------+----------------------------- tobq | 4565.72 67.57011**

**e | 3557.423 59.64413**

**u | 0 0**

**Test: Var(u) = 0**

**chibar2(01) = 0.00**

**Prob > chibar2 = 1.0000**

**. rreg tobq ntax dtax efft ctfr logmva i.croid**

**Huber iteration 1: maximum difference in weights = .96235989 Huber iteration 2: maximum difference in weights = .60863148 Huber iteration 3: maximum difference in weights = .80079009 Huber iteration 4: maximum difference in weights = .58314821 Huber iteration 5: maximum difference in weights = .63700713 Huber iteration 6: maximum difference in weights = .418973 Huber iteration 7: maximum difference in weights = .2405849 Huber iteration 8: maximum difference in weights = .11658375 Huber iteration 9: maximum difference in weights = .08571252 Huber iteration 10: maximum difference in weights = .06958483 Huber iteration 11: maximum difference in weights = .04750464**

**Biweight iteration 12: maximum difference in weights = .29958761 Biweight iteration 13: maximum difference in weights = .39063176 Biweight iteration 14: maximum difference in weights = .44537349 Biweight iteration 15: maximum difference in weights = .20624769 Biweight iteration 16: maximum difference in weights = .14368553 Biweight iteration 17: maximum difference in weights = .09698944 Biweight iteration 18: maximum difference in weights = .07652394 Biweight iteration 19: maximum difference in weights = .05760645**

**Biweight iteration 20: maximum difference in weights = .04700374 Biweight iteration 21: maximum difference in weights = .04050532 Biweight iteration 22: maximum difference in weights = .03810871 Biweight iteration 23: maximum difference in weights = .02894316 Biweight iteration 24: maximum difference in weights = .01835863 Biweight iteration 25: maximum difference in weights = .01088174 Biweight iteration 26: maximum difference in weights = .00608631**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Robust regression** | **Number of** | **obs** | **=** | **432** |
|  | **F( 71,** |  | **360) =** | **175.08** |
|  | **Prob > F** |  | **=** | **0.0000** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ntax** | **|** | **.0099768** | **.0042429** | **2.35** | **0.019** | **.0016328** | **.0183207** |
| **dtax** | **|** | **.0092337** | **.0031132** | **2.97** | **0.003** | **.0031114** | **.0153561** |
| **efft** | **|** | **-.000062** | **.0001338** | **-0.46** | **0.643** | **-.0003251** | **.0002011** |
| **ctfr** | **|** | **.0000808** | **.0001771** | **0.46** | **0.648** | **-.0002674** | **.0004291** |
| **logmva** | **|** | **.2634248** | **.0094257** | **27.95** | **0.000** | **.2448886** | **.2819611** |
|  | **|** |  |  |  |  |  |  |
| **croid** | **|** |  |  |  |  |  |  |
| **2** | **|** | **-.1693142** | **.1431663** | **-1.18** | **0.238** | **-.4508615** | **.1122331** |
| **3** | **|** | **1.511657** | **.1120433** | **13.49** | **0.000** | **1.291316** | **1.731999** |
| **4** | **|** | **-.0134844** | **.1169849** | **-0.12** | **0.908** | **-.2435441** | **.2165753** |
| **5** | **|** | **.0287625** | **.1132623** | **0.25** | **0.800** | **-.1939763** | **.2515013** |
| **7** | **|** | **-.2670892** | **.1303262** | **-2.05** | **0.041** | **-.5233855** | **-.010793** |
| **8** | **|** | **-.1698003** | **.1295012** | **-1.31** | **0.191** | **-.4244741** | **.0848735** |
| **9** | **|** | **-.2706466** | **.1832779** | **-1.48** | **0.141** | **-.6310764** | **.0897833** |
| **10** | **|** | **-.2534015** | **.1061246** | **-2.39** | **0.017** | **-.4621035** | **-.0446995** |
| **11** | **|** | **-.2443691** | **.12209** | **-2.00** | **0.046** | **-.4844682** | **-.0042699** |
| **12** | **|** | **.1474773** | **.1145808** | **1.29** | **0.199** | **-.0778546** | **.3728091** |
| **13** | **|** | **.0290766** | **.1839284** | **0.16** | **0.874** | **-.3326324** | **.3907857** |
| **14** | **|** | **-.06799** | **.1244928** | **-0.55** | **0.585** | **-.3128144** | **.1768344** |
| **15** | **|** | **2.56011** | **.1073056** | **23.86** | **0.000** | **2.349085** | **2.771134** |
| **17** | **|** | **-.4213706** | **.1308957** | **-3.22** | **0.001** | **-.6787869** | **-.1639543** |
| **18** | **|** | **-.8529633** | **.2481418** | **-3.44** | **0.001** | **-1.340953** | **-.3649736** |
| **19** | **|** | **-.1652404** | **.1066819** | **-1.55** | **0.122** | **-.3750385** | **.0445577** |
| **20** | **|** | **.5134249** | **.1065055** | **4.82** | **0.000** | **.3039738** | **.722876** |
| **21** | **|** | **-.1870882** | **.105939** | **-1.77** | **0.078** | **-.3954252** | **.0212487** |
| **23** | **|** | **1.154086** | **.1065351** | **10.83** | **0.000** | **.9445771** | **1.363596** |
| **24** | **|** | **.444276** | **.1886808** | **2.35** | **0.019** | **.073221** | **.815331** |
| **25** | **|** | **-.172069** | **.140654** | **-1.22** | **0.222** | **-.4486756** | **.1045377** |
| **26** | **|** | **-.056206** | **.1368408** | **-0.41** | **0.682** | **-.3253137** | **.2129017** |
| **27** | **|** | **-.1198693** | **.1121439** | **-1.07** | **0.286** | **-.3404088** | **.1006701** |
| **28** | **|** | **-.2962393** | **.1087456** | **-2.72** | **0.007** | **-.5100957** | **-.0823829** |
| **29** | **|** | **-.0675134** | **.1135014** | **-0.59** | **0.552** | **-.2907225** | **.1556957** |
| **30** | **|** | **-.2238529** | **.1563306** | **-1.43** | **0.153** | **-.5312888** | **.0835829** |
| **31** | **|** | **.137229** | **.1861871** | **0.74** | **0.462** | **-.228922** | **.50338** |
| **32** | **|** | **.7108758** | **.1067947** | **6.66** | **0.000** | **.500856** | **.9208957** |
| **33** | **|** | **.1305854** | **.1072987** | **1.22** | **0.224** | **-.0804255** | **.3415964** |
| **34** | **|** | **.1787591** | **.1417429** | **1.26** | **0.208** | **-.0999889** | **.4575071** |
| **36** | **|** | **-.160819** | **.1176603** | **-1.37** | **0.173** | **-.3922069** | **.0705689** |
| **37** | **|** | **-.080209** | **.116784** | **-0.69** | **0.493** | **-.3098736** | **.1494556** |
| **39** | **|** | **-.1134834** | **.1147973** | **-0.99** | **0.324** | **-.339241** | **.1122742** |
| **41** | **|** | **-.10976** | **.1222722** | **-0.90** | **0.370** | **-.3502175** | **.1306976** |
| **43** | **|** | **-.0679381** | **.1174249** | **-0.58** | **0.563** | **-.2988631** | **.162987** |
| **45** | **|** | **-.1296647** | **.1350588** | **-0.96** | **0.338** | **-.3952679** | **.1359386** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **46** | **|** | **-.0477542** | **.105942** | **-0.45** | **0.652** | **-.2560972** | **.1605888** |
| **47** | **|** | **-.244687** | **.1318741** | **-1.86** | **0.064** | **-.5040273** | **.0146534** |
| **48** | **|** | **-.345615** | **.1123788** | **-3.08** | **0.002** | **-.5666163** | **-.1246137** |
| **49** | **|** | **-.0587529** | **.1192185** | **-0.49** | **0.622** | **-.2932051** | **.1756993** |
| **50** | **|** | **4.412639** | **.1083196** | **40.74** | **0.000** | **4.199621** | **4.625658** |
| **51** | **|** | **1.545133** | **.1085862** | **14.23** | **0.000** | **1.33159** | **1.758676** |
| **52** | **|** | **-.0292038** | **.108354** | **-0.27** | **0.788** | **-.24229** | **.1838825** |
| **53** | **|** | **-.267474** | **.129526** | **-2.07** | **0.040** | **-.5221967** | **-.0127513** |
| **54** | **|** | **.2021463** | **.1642496** | **1.23** | **0.219** | **-.120863** | **.5251556** |
| **55** | **|** | **.0411144** | **.1057062** | **0.39** | **0.698** | **-.1667647** | **.2489936** |
| **56** | **|** | **-.3312836** | **.248309** | **-1.33** | **0.183** | **-.8196019** | **.1570347** |
| **57** | **|** | **-.2055625** | **.1068472** | **-1.92** | **0.055** | **-.4156855** | **.0045606** |
| **58** | **|** | **2.942236** | **.107592** | **27.35** | **0.000** | **2.730648** | **3.153824** |
| **59** | **|** | **-.0599792** | **.1096106** | **-0.55** | **0.585** | **-.2755367** | **.1555784** |
| **60** | **|** | **.0274522** | **.112104** | **0.24** | **0.807** | **-.1930088** | **.2479132** |
| **61** | **|** | **-.0917074** | **.1506184** | **-0.61** | **0.543** | **-.3879099** | **.204495** |
| **62** | **|** | **-.2625492** | **.1234863** | **-2.13** | **0.034** | **-.5053943** | **-.019704** |
| **63** | **|** | **-.0522361** | **.1579063** | **-0.33** | **0.741** | **-.3627707** | **.2582985** |
| **65** | **|** | **-.2302284** | **.1843344** | **-1.25** | **0.212** | **-.592736** | **.1322791** |
| **66** | **|** | **-.1173188** | **.1092262** | **-1.07** | **0.284** | **-.3321204** | **.0974828** |
| **67** | **|** | **-.2065994** | **.10611** | **-1.95** | **0.052** | **-.4152728** | **.0020739** |
| **68** | **|** | **-.072524** | **.1265132** | **-0.57** | **0.567** | **-.3213218** | **.1762738** |
| **69** | **|** | **-.1458325** | **.1831951** | **-0.80** | **0.427** | **-.5060994** | **.2144345** |
| **70** | **|** | **-.0879167** | **.1559565** | **-0.56** | **0.573** | **-.3946169** | **.2187835** |
| **71** | **|** | **-.2076648** | **.2011378** | **-1.03** | **0.303** | **-.6032175** | **.1878879** |
| **72** | **|** | **.1139777** | **.1557335** | **0.73** | **0.465** | **-.1922838** | **.4202393** |
| **73** | **|** | **1.841613** | **.1061767** | **17.34** | **0.000** | **1.632809** | **2.050418** |
| **74** | **|** | **-.0448958** | **.18429** | **-0.24** | **0.808** | **-.4073159** | **.3175244** |
| **75** | **|** | **.0972587** | **.1876988** | **0.52** | **0.605** | **-.2718652** | **.4663826** |
| **76** | **|** | **-.0609345** | **.1256135** | **-0.49** | **0.628** | **-.307963** | **.186094** |
|  | **|** |  |  |  |  |  |  |
| **\_cons** | **|** | **1.718434** | **.0763941** | **22.49** | **0.000** | **1.568199** | **1.868669** |

**------------------------------------------------------------------------------**

**MODEL 2: MODERATED REGRESSION**

**reg peps ntax dtax efft ctfr audcpca logmva**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **424** |
| **-------------+----------------------------------** | | | | **F(6, 417)** | **=** | **7.39** |
| **Model | 153341.218 6 25556.8697** | | | | **Prob > F** | **=** | **0.0000** |
| **Residual | 1442606.19 417 3459.48727** | | | | **R-squared** | **=** | **0.0961** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.0831** |
| **Total | 1595947.41 423 3772.92532** | | | | **Root MSE** | **=** | **58.817** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-6.19085** | **2.628039** | **-2.36** | **0.019** | **-11.35671** | **-1.024994** |
| **dtax |** | **-5.834452** | **2.625715** | **-2.22** | **0.027** | **-10.99574** | **-.6731653** |
| **efft |** | **.0586102** | **.0315306** | **1.86** | **0.064** | **-.0033686** | **.120589** |
| **ctfr |** | **.3152395** | **.0699402** | **4.51** | **0.000** | **.1777602** | **.4527188** |
| **audcpca |** | **5.890679** | **3.021164** | **1.95** | **0.052** | **-.0479308** | **11.82929** |
| **logmva |** | **4.755032** | **1.645951** | **2.89** | **0.004** | **1.519637** | **7.990426** |
| **\_cons |** | **62.40738** | **17.6095** | **3.54** | **0.000** | **27.79293** | **97.02183** |

**------------------------------------------------------------------------------**

**. hettest**

**Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance**

**Variables: fitted values of peps**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **chi2(1)** | **=** | **154.99** | | | |
| **Prob > chi2** | **=** | **0.0000** | | | |
| **. xtreg peps ntax dtax** | | **efft ctfr audcpca logmva** | **, fe** |  |  |
| **Fixed-effects (within)** | | **regression** | **Number of obs** | **=** | **424** |
| **Group variable: croid** | |  | **Number of groups** | **=** | **66** |
| **R-sq:** | |  | **Obs per group:** |  |  |
| **within = 0.0690** | |  | **min** | **=** | **1** |
| **between = 0.1487** | |  | **avg** | **=** | **6.4** |
| **overall = 0.0772** | |  | **max** | **=** | **10** |
|  | |  | **F(6,352)** | **=** | **4.35** |
| **corr(u\_i, Xb) = 0.0149** | |  | **Prob > F** | **=** | **0.0003** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-4.118269** | **3.244279** | **-1.27** | **0.205** | **-10.49888** | **2.26234** |
| **dtax |** | **-2.598866** | **3.026195** | **-0.86** | **0.391** | **-8.550563** | **3.352832** |
| **efft |** | **.0518447** | **.0332282** | **1.56** | **0.120** | **-.0135059** | **.1171954** |
| **ctfr |** | **.2806391** | **.0807449** | **3.48** | **0.001** | **.121836** | **.4394423** |
| **audcpca |** | **3.595259** | **3.586286** | **1.00** | **0.317** | **-3.457984** | **10.6485** |
| **logmva |** | **2.048086** | **2.323422** | **0.88** | **0.379** | **-2.521449** | **6.61762** |
| **\_cons |** | **42.38029** | **20.97586** | **2.02** | **0.044** | **1.126507** | **83.63407** |

**-------------+----------------------------------------------------------------**

|  |  |  |
| --- | --- | --- |
| **sigma\_u |** | **26.780481** |  |
| **sigma\_e |** | **57.825391** |
| **rho |** | **.17660662** | **(fraction of variance due to u\_i)** |
| **------------------------------------------------------------------------------** | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **F test that all u\_i=0: F(65, 352) = 1.22** | **Prob** | **> F =** | **0.1321** |
| **. estimate store fe** |  |  |  |
| **. xtreg peps ntax dtax efft ctfr audcpca logmva** | **, re** |  |  |
| **Random-effects GLS regression** | **Number of obs** | **=** | **424** |
| **Group variable: croid** | **Number of groups** | **=** | **66** |
| **R-sq:** | **Obs per group:** |  |  |
| **within = 0.0580** | **min** | **=** | **1** |
| **between = 0.3009** | **avg** | **=** | **6.4** |
| **overall = 0.0961** | **max** | **=** | **10** |
|  | **Wald chi2(6)** | **=** | **44.32** |
| **corr(u\_i, X) = 0 (assumed)** | **Prob > chi2** | **=** | **0.0000** |

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. z P>|z| [95% Conf. Interval]**

**-------------+---------------------------------------------------------------- ntax | -6.19085 2.628039 -2.36 0.018 -11.34171 -1.039988**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **dtax |** | **-5.834452** | **2.625715** | **-2.22** | **0.026** | **-10.98076** | **-.6881454** |
| **efft |** | **.0586102** | **.0315306** | **1.86** | **0.063** | **-.0031888** | **.1204091** |
| **ctfr |** | **.3152395** | **.0699402** | **4.51** | **0.000** | **.1781592** | **.4523198** |
| **audcpca |** | **5.890679** | **3.021164** | **1.95** | **0.051** | **-.0306945** | **11.81205** |
| **logmva |** | **4.755032** | **1.645951** | **2.89** | **0.004** | **1.529028** | **7.981035** |
| **\_cons |** | **62.40738** | **17.6095** | **3.54** | **0.000** | **27.89339** | **96.92136** |

**-------------+----------------------------------------------------------------**

|  |  |  |
| --- | --- | --- |
| **sigma\_u |** | **0** |  |
| **sigma\_e |** | **57.825391** |  |
| **rho |** | **0** | **(fraction of variance due to u\_i)** |

**------------------------------------------------------------------------------**

**. estimate store re**

**. xttest0**

**Breusch and Pagan Lagrangian multiplier test for random effects peps[croid,t] = Xb + u[croid] + e[croid,t]**

**Estimated results:**

**| Var sd = sqrt(Var)**

**---------+----------------------------- peps | 3772.925 61.42414**

**e | 3343.776 57.82539**

**u | 0 0**

**Test: Var(u) = 0**

**chibar2(01) = 0.00**

**Prob > chibar2 = 1.0000**

**. rreg peps ntax dtax efft ctfr audcpca logmva**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Huber** | **iteration** | **1:** | **maximum** | **difference** | **in** | **weights** | **=** | **.9614505** |
| **Huber** | **iteration** | **2:** | **maximum** | **difference** | **in** | **weights** | **=** | **.73751887** |
| **Huber** | **iteration** | **3:** | **maximum** | **difference** | **in** | **weights** | **=** | **.30056919** |
| **Huber** | **iteration** | **4:** | **maximum** | **difference** | **in** | **weights** | **=** | **.14867994** |
| **Huber** | **iteration** | **5:** | **maximum** | **difference** | **in** | **weights** | **=** | **.05225077** |
| **Huber** | **iteration** | **6:** | **maximum** | **difference** | **in** | **weights** | **=** | **.01033512** |
| **Biweight** | **iteration** | **7:** | **maximum** | **difference** | **in** | **weights** | **=** | **.29183192** |
| **Biweight** | **iteration** | **8:** | **maximum** | **difference** | **in** | **weights** | **=** | **.18150967** |
| **Biweight** | **iteration** | **9:** | **maximum** | **difference** | **in** | **weights** | **=** | **.07204556** |

**Biweight iteration 10: maximum difference in weights = .02912482 Biweight iteration 11: maximum difference in weights = .01315263 Biweight iteration 12: maximum difference in weights = .00589138**

**Robust regression Number of obs = 423**

**F( 6, 416) = 118.52**

**Prob > F = 0.0000**

**------------------------------------------------------------------------------**

**peps | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.8786531** | **.5312674** | **-1.65** | **0.099** | **-1.922956** | **.1656502** |
| **dtax |** | **-1.051456** | **.5311778** | **-1.98** | **0.048** | **-2.095583** | **-.0073286** |
| **efft |** | **-.0414203** | **.0118604** | **-3.49** | **0.001** | **-.064734** | **-.0181066** |
| **ctfr |** | **.1993077** | **.0141931** | **14.04** | **0.000** | **.1714086** | **.2272068** |
| **audcpca |** | **.8183324** | **.6113137** | **1.34** | **0.181** | **-.3833165** | **2.019981** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **logmva |** | **2.16883** | **.3345699** | **6.48** | **0.000** | **1.511172** | **2.826488** |
| **\_cons |** | **16.01974** | **3.554471** | **4.51** | **0.000** | **9.032774** | **23.0067** |

**------------------------------------------------------------------------------**

**reg tobq ntax dtax efft ctfr audcpca logmva**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source |** | **SS** | **df** | **MS** | **Number of obs** | **=** | **426** |
| **-------------+----------------------------------** | | | | **F(6, 419)** | **=** | **13.75** |
| **Model | 323710.115 6 53951.6859** | | | | **Prob > F** | **=** | **0.0000** |
| **Residual | 1643848.21 419 3923.26542** | | | | **R-squared** | **=** | **0.1645** |
| **-------------+----------------------------------** | | | | **Adj R-squared** | **=** | **0.1526** |
| **Total | 1967558.33 425 4629.54901** | | | | **Root MSE** | **=** | **62.636** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.4172265** | **2.789195** | **-0.15** | **0.881** | **-5.899785** | **5.065332** |
| **dtax |** | **-.5609384** | **2.789769** | **-0.20** | **0.841** | **-6.044625** | **4.922748** |
| **efft |** | **.0061442** | **.0335351** | **0.18** | **0.855** | **-.0597738** | **.0720622** |
| **ctfr |** | **.0736029** | **.0743502** | **0.99** | **0.323** | **-.072543** | **.2197488** |
| **audcpca |** | **.6847285** | **3.208433** | **0.21** | **0.831** | **-5.621902** | **6.991359** |
| **logmva |** | **15.54606** | **1.748452** | **8.89** | **0.000** | **12.10923** | **18.98289** |
| **\_cons |** | **22.40583** | **18.68187** | **1.20** | **0.231** | **-14.31605** | **59.1277** |

**------------------------------------------------------------------------------**

**. hettest**

**Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance**

**Variables: fitted values of tobq**

|  |  |  |  |
| --- | --- | --- | --- |
| **chi2(1) = 2756.73**  **Prob > chi2 = 0.0000** |  |  | |
| **. xtreg tobq ntax dtax efft ctfr audcpca logmva** | **, fe** |
| **Fixed-effects (within) regression** | **Number of obs** | **=** | **426** |
| **Group variable: croid** | **Number of groups** | **=** | **67** |
| **R-sq:** | **Obs per group:** |  |  |
| **within = 0.2548** | **min** | **=** | **1** |
| **between = 0.0744** | **avg** | **=** | **6.4** |
| **overall = 0.1615** | **max** | **=** | **10** |
|  | **F(6,353)** | **=** | **20.12** |
| **corr(u\_i, Xb) = -0.5319** | **Prob > F** | **=** | **0.0000** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-1.058789** | **3.362397** | **-0.31** | **0.753** | **-7.671639** | **5.554061** |
| **dtax |** | **.4624945** | **3.139733** | **0.15** | **0.883** | **-5.71244** | **6.637429** |
| **efft |** | **-.0069208** | **.0345157** | **-0.20** | **0.841** | **-.074803** | **.0609614** |
| **ctfr |** | **.0497877** | **.0838848** | **0.59** | **0.553** | **-.1151891** | **.2147644** |
| **audcpca |** | **-.1751395** | **3.716126** | **-0.05** | **0.962** | **-7.48367** | **7.133391** |
| **logmva |** | **26.37747** | **2.412513** | **10.93** | **0.000** | **21.63277** | **31.12218** |
| **\_cons |** | **30.54598** | **21.72205** | **1.41** | **0.161** | **-12.17493** | **73.2669** |

**-------------+----------------------------------------------------------------**

|  |  |  |
| --- | --- | --- |
| **sigma\_u |** | **36.737906** |  |
| **sigma\_e |** | **60.122189** |
| **rho |** | **.27187313** | **(fraction of variance due to u\_i)** |
| **------------------------------------------------------------------------------** | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **F test that all u\_i=0: F(66, 353) = 1.54** | **Prob** | **> F =** | **0.0074** |
| **. estimate store fe** |  |  |  |
| **. xtreg tobq ntax dtax efft ctfr audcpca logmva** | **, re** |  |  |
| **Random-effects GLS regression** | **Number of obs** | **=** | **426** |
| **Group variable: croid** | **Number of groups** | **=** | **67** |
| **R-sq:** | **Obs per group:** |  |  |
| **within = 0.2486** | **min** | **=** | **1** |
| **between = 0.0856** | **avg** | **=** | **6.4** |
| **overall = 0.1645** | **max** | **=** | **10** |
|  | **Wald chi2(6)** | **=** | **82.51** |
| **corr(u\_i, X) = 0 (assumed)** | **Prob > chi2** | **=** | **0.0000** |

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. z P>|z| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ntax |** | **-.4172265** | **2.789195** | **-0.15** | **0.881** | **-5.883948** | **5.049495** |
| **dtax |** | **-.5609384** | **2.789769** | **-0.20** | **0.841** | **-6.028785** | **4.906908** |
| **efft |** | **.0061442** | **.0335351** | **0.18** | **0.855** | **-.0595834** | **.0718718** |
| **ctfr |** | **.0736029** | **.0743502** | **0.99** | **0.322** | **-.0721209** | **.2193266** |
| **audcpca |** | **.6847285** | **3.208433** | **0.21** | **0.831** | **-5.603685** | **6.973142** |
| **logmva |** | **15.54606** | **1.748452** | **8.89** | **0.000** | **12.11916** | **18.97297** |
| **\_cons |** | **22.40583** | **18.68187** | **1.20** | **0.230** | **-14.20997** | **59.02163** |

**-------------+----------------------------------------------------------------**

**sigma\_u | 0**

**sigma\_e | 60.122189**

**rho | 0 (fraction of variance due to u\_i)**

**------------------------------------------------------------------------------**

**. estimate store re**

**. xttest0**

**Breusch and Pagan Lagrangian multiplier test for random effects tobq[croid,t] = Xb + u[croid] + e[croid,t]**

**Estimated results:**

**| Var sd = sqrt(Var)**

**---------+----------------------------- tobq | 4629.549 68.04079**

**e | 3614.678 60.12219**

**u | 0 0**

**Test: Var(u) = 0**

**chibar2(01) = 0.00**

**Prob > chibar2 = 1.0000**

**. rreg tobq ntax dtax efft ctfr audcpca logmva i.croid**

**Huber iteration 1: maximum difference in weights = .96115415 Huber iteration 2: maximum difference in weights = .62778848 Huber iteration 3: maximum difference in weights = .75829802 Huber iteration 4: maximum difference in weights = .59396484 Huber iteration 5: maximum difference in weights = .62835957 Huber iteration 6: maximum difference in weights = .4252797 Huber iteration 7: maximum difference in weights = .25581495 Huber iteration 8: maximum difference in weights = .11469997 Huber iteration 9: maximum difference in weights = .08923603 Huber iteration 10: maximum difference in weights = .04576473**

**Biweight iteration 11: maximum difference in weights = .2973028 Biweight iteration 12: maximum difference in weights = .41343456 Biweight iteration 13: maximum difference in weights = .50379096 Biweight iteration 14: maximum difference in weights = .34617511 Biweight iteration 15: maximum difference in weights = .15777341 Biweight iteration 16: maximum difference in weights = .15576621 Biweight iteration 17: maximum difference in weights = .12439553 Biweight iteration 18: maximum difference in weights = .0660617 Biweight iteration 19: maximum difference in weights = .04355116 Biweight iteration 20: maximum difference in weights = .04328092 Biweight iteration 21: maximum difference in weights = .0425672 Biweight iteration 22: maximum difference in weights = .04479708 Biweight iteration 23: maximum difference in weights = .04099594 Biweight iteration 24: maximum difference in weights = .03445135 Biweight iteration 25: maximum difference in weights = .02827033 Biweight iteration 26: maximum difference in weights = .01932183 Biweight iteration 27: maximum difference in weights = .01954403 Biweight iteration 28: maximum difference in weights = .01499552 Biweight iteration 29: maximum difference in weights = .00839638**

**Robust regression Number of obs = 424**

**F( 70, 353) = 166.10**

**Prob > F = 0.0000**

**------------------------------------------------------------------------------**

**tobq | Coef. Std. Err. t P>|t| [95% Conf. Interval]**

**-------------+----------------------------------------------------------------**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ntax** | **|** | **.0133507** | **.013607** | **0.98** | **0.327** | **-.0134103** | **.0401116** |
| **dtax** | **|** | **.0359061** | **.0127059** | **2.83** | **0.005** | **.0109173** | **.0608949** |
| **efft** | **|** | **-.0001547** | **.0001397** | **-1.11** | **0.269** | **-.0004294** | **.00012** |
| **ctfr** | **|** | **-.0005579** | **.0003395** | **-1.64** | **0.101** | **-.0012255** | **.0001097** |
| **audcpca** | **|** | **-.0338296** | **.0150385** | **-2.25** | **0.025** | **-.0634058** | **-.0042534** |
| **logmva** | **|** | **.2628366** | **.009763** | **26.92** | **0.000** | **.2436356** | **.2820375** |
|  | **|** |  |  |  |  |  |  |
| **croid** | **|** |  |  |  |  |  |  |
| **2** | **|** | **-.0550053** | **.1479209** | **-0.37** | **0.710** | **-.3459223** | **.2359117** |
| **3** | **|** | **1.5175** | **.1176072** | **12.90** | **0.000** | **1.286201** | **1.748798** |
| **4** | **|** | **-.0238049** | **.1217915** | **-0.20** | **0.845** | **-.2633331** | **.2157232** |
| **5** | **|** | **.0133069** | **.1169885** | **0.11** | **0.910** | **-.2167752** | **.243389** |
| **7** | **|** | **-.1679196** | **.134426** | **-1.25** | **0.212** | **-.4322962** | **.0964569** |
| **8** | **|** | **-.1777847** | **.1334574** | **-1.33** | **0.184** | **-.4402564** | **.084687** |
| **9** | **|** | **-.2627894** | **.1888895** | **-1.39** | **0.165** | **-.6342798** | **.1087009** |
| **10** | **|** | **-.185429** | **.1093997** | **-1.69** | **0.091** | **-.4005862** | **.0297281** |
| **11** | **|** | **-.236048** | **.1258331** | **-1.88** | **0.061** | **-.4835248** | **.0114287** |
| **12** | **|** | **.2652092** | **.11989** | **2.21** | **0.028** | **.0294206** | **.5009978** |
| **13** | **|** | **-.0153178** | **.189561** | **-0.08** | **0.936** | **-.3881287** | **.3574932** |
| **14** | **|** | **-.0974918** | **.1284356** | **-0.76** | **0.448** | **-.3500869** | **.1551033** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **15** | **|** | **2.506869** | **.1106354** | **22.66** | **0.000** | **2.289282** | **2.724457** |
| **17** | **|** | **-.4606785** | **.1349258** | **-3.41** | **0.001** | **-.7260379** | **-.1953191** |
| **19** | **|** | **-.1314885** | **.1099808** | **-1.20** | **0.233** | **-.3477886** | **.0848116** |
| **20** | **|** | **.5800698** | **.1100697** | **5.27** | **0.000** | **.363595** | **.7965446** |
| **21** | **|** | **-.2121715** | **.1091895** | **-1.94** | **0.053** | **-.4269153** | **.0025723** |
| **23** | **|** | **1.12457** | **.1098296** | **10.24** | **0.000** | **.9085677** | **1.340573** |
| **24** | **|** | **.4161283** | **.1948003** | **2.14** | **0.033** | **.0330131** | **.7992434** |
| **25** | **|** | **-.1403518** | **.145119** | **-0.97** | **0.334** | **-.4257585** | **.1450548** |
| **26** | **|** | **-.1604281** | **.1778846** | **-0.90** | **0.368** | **-.5102749** | **.1894187** |
| **27** | **|** | **-.0696848** | **.1156252** | **-0.60** | **0.547** | **-.2970856** | **.157716** |
| **28** | **|** | **-.2981751** | **.112089** | **-2.66** | **0.008** | **-.5186214** | **-.0777289** |
| **29** | **|** | **.075016** | **.1174309** | **0.64** | **0.523** | **-.1559361** | **.3059681** |
| **30** | **|** | **-.2297121** | **.1611361** | **-1.43** | **0.155** | **-.5466197** | **.0871954** |
| **31** | **|** | **.1373485** | **.1918997** | **0.72** | **0.475** | **-.240062** | **.5147589** |
| **32** | **|** | **.6953293** | **.1127869** | **6.16** | **0.000** | **.4735104** | **.9171481** |
| **33** | **|** | **.2667716** | **.1112341** | **2.40** | **0.017** | **.0480068** | **.4855364** |
| **34** | **|** | **.0934986** | **.162156** | **0.58** | **0.565** | **-.2254147** | **.4124119** |
| **36** | **|** | **-.1315272** | **.1213109** | **-1.08** | **0.279** | **-.3701102** | **.1070558** |
| **37** | **|** | **-.0824064** | **.1204809** | **-0.68** | **0.494** | **-.3193571** | **.1545442** |
| **39** | **|** | **-.0790789** | **.1192177** | **-0.66** | **0.508** | **-.3135452** | **.1553875** |
| **41** | **|** | **-.0293555** | **.1266242** | **-0.23** | **0.817** | **-.2783881** | **.2196772** |
| **43** | **|** | **-.0140819** | **.1210636** | **-0.12** | **0.907** | **-.2521786** | **.2240148** |
| **45** | **|** | **-.1539279** | **.1404354** | **-1.10** | **0.274** | **-.4301231** | **.1222673** |
| **46** | **|** | **.0052502** | **.1092624** | **0.05** | **0.962** | **-.209637** | **.2201374** |
| **47** | **|** | **-.1728121** | **.1360107** | **-1.27** | **0.205** | **-.4403052** | **.094681** |
| **48** | **|** | **-.3571734** | **.1160947** | **-3.08** | **0.002** | **-.5854977** | **-.128849** |
| **49** | **|** | **-.0661616** | **.1229965** | **-0.54** | **0.591** | **-.3080597** | **.1757365** |
| **50** | **|** | **4.431206** | **.1119835** | **39.57** | **0.000** | **4.210967** | **4.651445** |
| **51** | **|** | **1.66535** | **.1122921** | **14.83** | **0.000** | **1.444504** | **1.886196** |
| **52** | **|** | **-.0651571** | **.1122049** | **-0.58** | **0.562** | **-.2858312** | **.155517** |
| **53** | **|** | **-.2572081** | **.1334986** | **-1.93** | **0.055** | **-.5197608** | **.0053446** |
| **54** | **|** | **.1803103** | **.1693558** | **1.06** | **0.288** | **-.152763** | **.5133836** |
| **55** | **|** | **.0366433** | **.1089504** | **0.34** | **0.737** | **-.1776303** | **.2509168** |
| **57** | **|** | **-.1475997** | **.1132387** | **-1.30** | **0.193** | **-.3703071** | **.0751077** |
| **58** | **|** | **3.021029** | **.1113915** | **27.12** | **0.000** | **2.801954** | **3.240103** |
| **59** | **|** | **-.0897533** | **.1129748** | **-0.79** | **0.427** | **-.3119417** | **.132435** |
| **60** | **|** | **.0023009** | **.1155701** | **0.02** | **0.984** | **-.2249917** | **.2295934** |
| **61** | **|** | **-.0204395** | **.1765422** | **-0.12** | **0.908** | **-.3676462** | **.3267673** |
| **62** | **|** | **-.1985273** | **.1273567** | **-1.56** | **0.120** | **-.4490006** | **.051946** |
| **63** | **|** | **-.0885641** | **.1630698** | **-0.54** | **0.587** | **-.4092747** | **.2321465** |
| **65** | **|** | **-.1842444** | **.1902928** | **-0.97** | **0.334** | **-.5584946** | **.1900057** |
| **66** | **|** | **-.1174933** | **.1128082** | **-1.04** | **0.298** | **-.339354** | **.1043674** |
| **67** | **|** | **-.2024723** | **.1093893** | **-1.85** | **0.065** | **-.417609** | **.0126645** |
| **68** | **|** | **-.032787** | **.1326388** | **-0.25** | **0.805** | **-.2936486** | **.2280746** |
| **69** | **|** | **-.1171105** | **.188906** | **-0.62** | **0.536** | **-.4886334** | **.2544123** |
| **70** | **|** | **-.1368695** | **.1607821** | **-0.85** | **0.395** | **-.4530808** | **.1793418** |
| **71** | **|** | **-.1364353** | **.2074046** | **-0.66** | **0.511** | **-.5443393** | **.2714687** |
| **72** | **|** | **.1448027** | **.1605225** | **0.90** | **0.368** | **-.170898** | **.4605034** |
| **73** | **|** | **1.875035** | **.1095204** | **17.12** | **0.000** | **1.65964** | **2.090429** |
| **74** | **|** | **-.0450257** | **.1899533** | **-0.24** | **0.813** | **-.4186081** | **.3285568** |
| **75** | **|** | **.0495068** | **.1941538** | **0.25** | **0.799** | **-.3323367** | **.4313504** |
| **76** | **|** | **-.0500885** | **.1298836** | **-0.39** | **0.700** | **-.3055315** | **.2053545** |
|  | **|** |  |  |  |  |  |  |
| **\_cons** | **|** | **1.607346** | **.118572** | **13.56** | **0.000** | **1.37415** | **1.840542** |

**------------------------------------------------------------------------------**

## APPENDIX: DATA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **year** | **companies** | **tobq** | **peps** | **ntax** | **dtax** | **efft** | **ctfr** | **mvaa** | **audc** | **logmva** | **logmva** | **ntax\_acs** | **dtax\_acs** | **efft\_acs** | **ctfr\_acs** |
| 2011 | 11 Plc | 2.3039 | 11.0305 | 2.4515 | 0 | 31.959 | 21.2219 | 1.3251 | 6 | 0.281488 | 0.281488 | 14.709 | 0 | 191.754 | 127.3314 |
| 2012 | 11 Plc | 1.7745 | 12.7629 | 1.938 | 0.8904 | 29.3937 | 55.6325 | 0.7818 | 6 | -0.24616 | -0.24616 | 11.628 | 5.3424 | 176.3622 | 333.795 |
| 2013 | 11 Plc | 1.6172 | 11.4589 | 1.2823 | 0.3731 | -32.0558 | 30.0063 | 0.6409 | 6 | -0.44488 | -0.44488 | 7.6938 | 2.2386 | -192.335 | 180.0378 |
| 2014 | 11 Plc | 1.6817 | 8.9114 | 2.0957 | 0.378 | -24.314 | 26.5383 | 0.6892 | 5 | -0.37222 | -0.37222 | 10.4785 | 1.89 | -121.57 | 132.6915 |
| 2015 | 11 Plc | 1.7234 | 11.8431 | 3.6532 | 0.2276 | -29.4425 | 43.8508 | 0.7829 | 5 | -0.24475 | -0.24475 | 18.266 | 1.138 | -147.213 | 219.254 |
| 2016 | 11 Plc | 2.146 | 12.3397 | 4.2507 | 0.0005 | -32.16 | 5.7615 | 1.2828 | 5 | 0.249045 | 0.249045 | 21.2535 | 0.0025 | -160.8 | 28.8075 |
| 2017 | 11 Plc | 1.5147 | 9.4237 | 4.2308 | 0.1164 | -27.0755 | 22.3813 | 0.5735 | 6 | -0.556 | -0.556 | 25.3848 | 0.6984 | -162.453 | 134.2878 |
| 2018 | 11 Plc | 1.4353 | 7.1705 | 4.5329 | 0.0575 | -31.883 | 18.7912 | 0.4687 | 7 | -0.75779 | -0.75779 | 31.7303 | 0.4025 | -223.181 | 131.5384 |
| 2019 | 11 Plc | 1.0766 | 6.0024 | 3.861 | 0.34 | -32.2259 | 23.4826 | 0.1497 | 6 | -1.89912 | -1.89912 | 23.166 | 2.04 | -193.355 | 140.8956 |
| 2020 | 11 Plc | 1.343 | 27.9412 | 5.5048 | 0.5114 | -48.3681 | 63.0708 | 0.4574 | 6 | -0.7822 | -0.7822 | 33.0288 | 3.0684 | -290.209 | 378.4248 |
| 2011 | Academy | 1.0138 | 9.5652 | 7.1107 | 1.1989 | -46.4956 | 35.5454 | 0.1067 | 6 | -2.23773 | -2.23773 | 42.6642 | 7.1934 | -278.974 | 213.2724 |
| 2012 | Academy | 0.8625 | 9 | 6.2513 | 1.1826 | -40.8931 | 12.9122 | 0.0456 | 6 | -3.08785 | -3.08785 | 37.5078 | 7.0956 | -245.359 | 77.4732 |
| 2013 | Academy | 0.9035 | 19.6154 | 7.3301 | 1.8298 | -33.9754 | 26.3861 | 0.1501 | 6 | -1.89645 | -1.89645 | 43.9806 | 10.9788 | -203.852 | 158.3166 |
| 2014 | Academy | 0.942 | 5.9 | 7.0586 | 3.7431 | -9.2576 | 26.8021 | -0.0544 | 6 |  |  | 42.3516 | 22.4586 | -55.5456 | 160.8126 |
| 2015 | Academy | 0.8932 | -11 | 9.3065 | 8.5028 | 163.636 | -198.657 | -0.1022 | 6 |  |  | 55.839 | 51.0168 | 981.816 | -1191.94 |
| 2016 | Academy | 0.9131 | -2 | 10.3767 | 8.7474 | -17.4401 | -22.3876 | -0.0793 | 6 |  |  | 62.2602 | 52.4844 | -104.641 | -134.326 |
| 2017 | Academy | 0.9961 | -0.625 | 12.7189 | 7.6174 | 32.3301 | -4.2879 | 0.026 | 6 | -3.64966 | -3.64966 | 76.3134 | 45.7044 | 193.9806 | -25.7274 |
| 2018 | Academy | 0.9752 | 2.9412 | 12.6278 | 6.7353 | -719.469 | -13.1607 | -0.0023 | 6 |  |  | 75.7668 | 40.4118 | -4316.81 | -78.9642 |
| 2019 | Academy | 0.9602 | 3.7 | 11.7942 | 2.109 | 2520.39 | 1227.49 | -0.0322 | 6 |  |  | 70.7652 | 12.654 | 15122.34 | 7364.94 |
| 2020 | Academy | 0.9846 | -7.5 | 8.3402 | 4.284 | -11.157 | -19.4789 | -0.0604 | 6 |  |  | 50.0412 | 25.704 | -66.942 | -116.873 |
| 2011 | Afromedia | 0.6753 | -7.1429 | 2.8408 | 2.6647 | 26.5134 | 0 | -0.3239 | 4 |  |  | 11.3632 | 10.6588 | 106.0536 | 0 |
| 2012 | Afromedia | 1.3537 | -0.5051 | 5.5664 | 7.7791 | 0.9442 | -0.2657 | 0.4064 | 4 | -0.90042 | -0.90042 | 22.2656 | 31.1164 | 3.7768 | -1.0628 |
| 2013 | Afromedia | 1.5498 | -2.6316 | 8.1133 | 8.9361 | 0.045 | -0.1269 | 0.5509 | 4 | -0.5962 | -0.5962 | 32.4532 | 35.7444 | 0.18 | -0.5076 |
| 2014 | Afromedia | 2.0323 | -1.5625 | 7.2488 | 15.8754 | -16.1849 | 0 | 1.0325 | 4 | 0.031983 | 0.031983 | 28.9952 | 63.5016 | -64.7396 | 0 |
| 2015 | Afromedia | 3.8096 | -0.8065 | 12.119 | 28.7763 | 0.2222 | 0 | 2.8178 | 4 | 1.035957 | 1.03596 | 48.476 | 115.1052 | 0.8888 | 0 |
| 2016 | Afromedia | 4.8219 | -1.25 | 5.8115 | 12.0207 | 0.3481 | 0 | 3.8382 | 4 | 1.345003 | 1.345 | 23.246 | 48.0828 | 1.3924 | 0 |
| 2017 | Afromedia | 5.1482 | 3.5714 | 19.6113 | 1.4282 | -22.3824 | 0.0174 | 4.1633 | 4 | 1.426308 | 1.42631 | 78.4452 | 5.7128 | -89.5296 | 0.0696 |
| 2018 | Afromedia | 3.9433 | 6.25 | 0.4153 | 0 | 2.8007 | 0.4057 | 3.1234 | 4 | 1.138922 | 1.13892 | 1.6612 | 0 | 11.2028 | 1.6228 |
| 2019 | Afromedia | 3.5594 | 2.8333 | 0.5435 | 0.0076 | 5.3181 | 0 | 2.5747 | 4 | 0.945733 | 0.945733 | 2.174 | 0.0304 | 21.2724 | 0 |
| 2020 | Afromedia | 2.9877 | 1.6667 | 0.6474 | 0 | 10.5519 | 0.1806 | 2.0323 | 4 | 0.709168 | 0.709168 | 2.5896 | 0 | 42.2076 | 0.7224 |
| 2011 | Aluminium Extrusion Indus | 2.4876 | 48.4783 | 1.6165 | 2.7476 | -37.382 | 6.8505 | 1.4891 | 4 | 0.398172 | 0.398172 | 6.466 | 10.9904 | -149.528 | 27.402 |
| 2012 | Aluminium Extrusion Indus | 1.8508 | 50.2381 | 1.7619 | 3.1455 | -41.8367 | 7.5012 | 0.851 | 4 | -0.16134 | -0.16134 | 7.0476 | 12.582 | -167.347 | 30.0048 |

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| 2013 | Aluminium Extrusion Indus | 1.7963 | 16.9355 | 1.7542 | 2.8891 | -2.9738 | 7.1525 | 0.7965 | 4 | -0.22753 | -0.22753 | 7.0168 | 11.5564 | -11.8952 | 28.61 |
| 2014 | Aluminium Extrusion Indus | 1.6684 | 13.5455 | 1.6659 | 2.6391 | -43.0173 | 9.0816 | 0.6692 | 4 | -0.40167 | -0.40167 | 6.6636 | 10.5564 | -172.069 | 36.3264 |
| 2015 | Aluminium Extrusion Indus | 1.4927 | 24.6053 | 1.8089 | 2.1106 | -31.1236 | 12.0966 | 0.4778 | 4 | -0.73856 | -0.73856 | 7.2356 | 8.4424 | -124.494 | 48.3864 |
| 2016 | Aluminium Extrusion Indus | 0.7153 | 24.3947 | 0.8317 | 0.8961 | -30.9737 | 23.2575 | 0.1328 | 4 | -2.01891 | -2.01891 | 3.3268 | 3.5844 | -123.895 | 93.03 |
| 2017 | Aluminium Extrusion Indus | 1.1825 | 24.1579 | 0.1876 | 2.049 | -32.7511 | 37.6691 | 0.1875 | 4 | -1.67398 | -1.67398 | 0.7504 | 8.196 | -131.004 | 150.6764 |
| 2018 | Aluminium Extrusion Indus | 0.9892 | 21.0256 | 0.2212 | 1.7021 | -32.1314 | 40.2216 | -0.0024 | 4 |  |  | 0.8848 | 6.8084 | -128.526 | 160.8864 |
| 2019 | Aluminium Extrusion Indus | 0.9649 | 27.931 | 0.1672 | 1.4045 | -43.6898 | 16.7635 | -0.0295 | 4 |  |  | 0.6688 | 5.618 | -174.759 | 67.054 |
| 2020 | Aluminium Extrusion Indus | 0.8326 | 11.9118 | 0.2897 | 0.1514 | 43.7981 | 27.4858 | -0.0899 | 4 |  |  | 1.1588 | 0.6056 | 175.1924 | 109.9432 |
| 2011 | Ardova Plc (Forte Oil) | 1.066 | -58 | 1.1581 | 3.2927 | 1.8927 | -3.9316 | 0.1469 | 6 | -1.918 | -1.918 | 6.9486 | 19.7562 | 11.3562 | -23.5896 |
| 2012 | Ardova Plc (Forte Oil) | 0.9276 | 8.3118 | 1.7311 | 4.3485 | 12.3758 | 12.3758 | 0.0186 | 6 | -3.98459 | -3.98459 | 10.3866 | 26.091 | 74.2548 | 74.2548 |
| 2013 | Ardova Plc (Forte Oil) | 1.7291 | 25.0694 | 1.1316 | 1.7944 | -23.299 | 20.9381 | 0.7939 | 6 | -0.2308 | -0.2308 | 6.7896 | 10.7664 | -139.794 | 125.6286 |
| 2014 | Ardova Plc (Forte Oil) | 3.8819 | 103.591 | 1.5496 | 3.022 | -25.8009 | 0 | 2.9972 | 6 | 1.097679 | 1.09768 | 9.2976 | 18.132 | -154.805 | 0 |
| 2015 | Ardova Plc (Forte Oil) | 6.2868 | 80.292 | 1.2372 | 4.2263 | 17.3747 | 15.9298 | 5.3829 | 7 | 1.683227 | 1.68323 | 8.6604 | 29.5841 | 121.6229 | 111.5086 |
| 2016 | Ardova Plc (Forte Oil) | 1.7861 | 42.4271 | 2.1002 | 4.3833 | 45.8746 | 32.8351 | 0.9072 | 6 | -0.09739 | -0.09739 | 12.6012 | 26.2998 | 275.2476 | 197.0106 |
| 2017 | Ardova Plc (Forte Oil) | 0.9996 | 15.045 | 3.6077 | 3.8895 | 15.0489 | 11.2921 | 0.0116 | 6 | -4.45675 | -4.45675 | 21.6462 | 23.337 | 90.2934 | 67.7526 |
| 2018 | Ardova Plc (Forte Oil) | 0.8085 | 19.6575 | 1.0047 | 2.1484 | -52.3467 | 73.3383 | -0.1834 | 6 |  |  | 6.0282 | 12.8904 | -314.08 | 440.0298 |
| 2019 | Ardova Plc (Forte Oil) | 1.1164 | 6.0333 | 4.5757 | 10.2627 | -15.8785 | 4.4919 | 0.1586 | 6 | -1.84137 | -1.84137 | 27.4542 | 61.5762 | -95.271 | 26.9514 |
| 2020 | Ardova Plc (Forte Oil) | 0.9484 | 9.5423 | 2.282 | 2.3169 | -36.0531 | 32.9506 | -0.0052 | 6 |  |  | 13.692 | 13.9014 | -216.319 | 197.7036 |
| 2011 | Associated Bus Company | 0.7479 | 10 | 21.5096 | 5.2303 | -34.0174 | 84.2706 | -0.2339 | 4 |  |  | 86.0384 | 20.9212 | -136.07 | 337.0824 |
| 2012 | Associated Bus Company | 0.659 | 2.2727 | 18.0929 | 5.0413 | -38.7867 | 22.97 | -0.2937 | 4 |  |  | 72.3716 | 20.1652 | -155.147 | 91.88 |
| 2013 | Associated Bus Company | 0.7904 | 4.1 | 17.6549 | 4.3172 | -41.4815 | 19.5254 | -0.1826 | 4 |  |  | 70.6196 | 17.2688 | -165.926 | 78.1016 |
| 2014 | Associated Bus Company | 0.8265 | -2.2 | 18.1983 | 6.9057 | 43.5637 | -30.6765 | -0.1605 | 4 |  |  | 72.7932 | 27.6228 | 174.2548 | -122.706 |
| 2015 | Associated Bus Company | 0.7951 | 5.5556 | 20.0943 | 6.4793 | -55.5264 | 24.7231 | -0.1824 | 4 |  |  | 80.3772 | 25.9172 | -222.106 | 98.8924 |
| 2016 | Associated Bus Company | 0.843 | -1.3889 | 26.369 | 11.3165 | 22.2634 | -17.6211 | -0.1372 | 4 |  |  | 105.476 | 45.266 | 89.0536 | -70.4844 |
| 2017 | Associated Bus Company | 0.7124 | 1.6129 | 20.4867 | 4.4784 | -33.0688 | 3.1932 | -0.2489 | 4 |  |  | 81.9468 | 17.9136 | -132.275 | 12.7728 |
| 2018 | Associated Bus Company | 0.8527 | -7.1429 | 18.7583 | 3.7875 | -268.97 | 325.452 | -0.1211 | 4 |  |  | 75.0332 | 15.15 | -1075.88 | 1301.808 |
| 2019 | Associated Bus Company | 0.8193 | 3.75 | 15.2686 | 4.0877 | -52.0259 | 63.2199 | -0.1542 |  |  |  |  |  |  |  |
| 2020 | Associated Bus Company | 0.8232 | 1.3103 | 14.6577 | 4.3077 | 48.0145 | 0 | -0.0905 | 4 |  |  | 58.6308 | 17.2308 | 192.058 | 0 |
| 2011 | B.O.C Gases Nig | 1.5451 | 8.5625 | 10.6334 | 0 | -31.7788 | 32.8963 | 0.6754 | 4 | -0.39245 | -0.39245 | 42.5336 | 0 | -127.115 | 131.5852 |
| 2012 | B.O.C Gases Nig | 1.1949 | 8.5616 | 6.5592 | 0 | 38.9575 | 27.6394 | 0.3641 | 4 | -1.01033 | -1.01033 | 26.2368 | 0 | 155.83 | 110.5576 |
| 2013 | B.O.C Gases Nig | 1.0804 | 10.5714 | 6.488 | 0 | -30.912 | 46.7927 | 0.3305 | 4 | -1.10715 | -1.10715 | 25.952 | 0 | -123.648 | 187.1708 |
| 2014 | B.O.C Gases Nig | 0.956 | 10.1481 | 6.0116 | 0.0351 | -26.5378 | 23.0159 | 0.0773 | 4 | -2.56006 | -2.56006 | 24.0464 | 0.1404 | -106.151 | 92.0636 |
| 2015 | B.O.C Gases Nig | 0.7549 | 13.069 | 7.8313 | 0.8288 | -7.5182 | 12.2533 | -0.166 | 4 |  |  | 31.3252 | 3.3152 | -30.0728 | 49.0132 |
| 2016 | B.O.C Gases Nig | 0.6262 | 19.6111 | 6.1846 | 2.2567 | -37.1885 | 10.2769 | -0.1937 | 4 |  |  | 24.7384 | 9.0268 | -148.754 | 41.1076 |
| 2017 | B.O.C Gases Nig | 0.5986 | 8.5536 | 4.9431 | 2.2088 | -39.0585 | 4.1924 | -0.0938 | 4 |  |  | 19.7724 | 8.8352 | -156.234 | 16.7696 |

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| 2018 | B.O.C Gases Nig | 0.7025 | 4.8953 | 4.8228 | 0.0522 | -35.9785 | 2.4561 | -0.2026 | 4 |  |  | 19.2912 | 0.2088 | -143.914 | 9.8244 |
| 2019 | B.O.C Gases Nig | 0.6173 | 10.5769 | 4.7511 | 0.8173 | -32.8331 | 44.7869 | -0.084 | 4 |  |  | 19.0044 | 3.2692 | -131.332 | 179.1476 |
| 2020 | B.O.C Gases Nig | 735.41 | 13.6714 | 4.8911 | 1.172 | -29.5282 | 26.4829 | 734.714 | 4 | 6.599481 | 6.59948 | 19.5644 | 4.688 | -118.113 | 105.9316 |
| 2011 | Berger Paints Nig | 0.7751 | 8.0667 | 3.3429 | 0.0108 | 38.3156 | 44.5261 | 0.0417 | 6 | -3.17725 | -3.17725 | 20.0574 | 0.0648 | 229.8936 | 267.1566 |
| 2012 | Berger Paints Nig | 0.8036 | 10.2045 | 3.2354 | 0.0104 | 32.5017 | 40.8008 | 0.0612 | 6 | -2.79361 | -2.79361 | 19.4124 | 0.0624 | 195.0102 | 244.8048 |
| 2013 | Berger Paints Nig | 0.6429 | 9.1954 | 3.019 | 0.926 | -29.4162 | 30.9153 | -0.0352 | 6 |  |  | 18.114 | 5.556 | -176.497 | 185.4918 |
| 2014 | Berger Paints Nig | 0.7809 | 17.6471 | 3.4777 | 2.1629 | -40.2996 | 23.1383 | 0.0408 | 6 | -3.19907 | -3.19907 | 20.8662 | 12.9774 | -241.798 | 138.8298 |
| 2015 | Berger Paints Nig | 0.9256 | 8.7719 | 3.0278 | 1.2709 | -41.5589 | 6.2191 | 0.0798 | 6 | -2.52823 | -2.52823 | 18.1668 | 7.6254 | -249.353 | 37.3146 |
| 2016 | Berger Paints Nig | 0.6986 | 8.3117 | 2.5996 | 0.851 | -17.5748 | 7.9358 | -0.1827 | 6 |  |  | 15.5976 | 5.106 | -105.449 | 47.6148 |
| 2017 | Berger Paints Nig | 0.7828 | 9.9882 | 2.6365 | 0.6948 | -27.4498 | 48.9854 | -0.0419 | 6 |  |  | 15.819 | 4.1688 | -164.699 | 293.9124 |
| 2018 | Berger Paints Nig | 0.8149 | 7.7477 | 3.23 | 0.4225 | -29.4543 | 11.0713 | -0.0707 | 6 |  |  | 19.38 | 2.535 | -176.726 | 66.4278 |
| 2019 | Berger Paints Nig | 0.7367 | 4.3548 | 2.8865 | 0.3551 | -15.8256 | 9.1527 | -0.2205 | 6 |  |  | 17.319 | 2.1306 | -94.9536 | 54.9162 |
| 2020 | Berger Paints Nig | 428.746 | 14.7 | 5.05 | 1.246 | -30.6231 | 7.6403 | 427.818 | 6 | 6.058697 | 6.0587 | 30.3 | 7.476 | -183.739 | 45.8418 |
| 2011 | Beta Glass Company | 0.6589 | 3.5803 | 9.594 | 0.2019 | 22.8528 | 9.914 | -0.276 | 6 |  |  | 57.564 | 1.2114 | 137.1168 | 59.484 |
| 2012 | Beta Glass Company | 0.6311 | 3.9474 | 8.726 | 1.6355 | 28.459 | 29.5783 | -0.3211 | 6 |  |  | 52.356 | 9.813 | 170.754 | 177.4698 |
| 2013 | Beta Glass Company | 0.684 | 4.9249 | 7.1974 | 0.6679 | -28.1873 | 22.0501 | -0.2402 | 7 |  |  | 50.3818 | 4.6753 | -197.311 | 154.3507 |
| 2014 | Beta Glass Company | 0.8113 | 5.8117 | 7.458 | 1.4941 | -28.4506 | 16.6764 | -0.0766 | 6 |  |  | 44.748 | 8.9646 | -170.704 | 100.0584 |
| 2015 | Beta Glass Company | 1.1893 | 13.4296 | 7.7578 | 0.2539 | -36.0752 | 36.9407 | 0.3366 | 6 | -1.08886 | -1.08886 | 46.5468 | 1.5234 | -216.451 | 221.6442 |
| 2016 | Beta Glass Company | 0.5669 | 3.9895 | 6.5577 | 0.0597 | -27.1484 | 4.3812 | -0.1903 | 6 |  |  | 39.3462 | 0.3582 | -162.89 | 26.2872 |
| 2017 | Beta Glass Company | 0.8035 | 5.9708 | 0.2976 | 0.3304 | -29.7126 | 20.4657 | -0.0151 | 7 |  |  | 2.0832 | 2.3128 | -207.988 | 143.2599 |
| 2018 | Beta Glass Company | 0.9055 | 6.7557 | 0.2939 | 0.5279 | -29.7068 | 37.7734 | 0.0981 | 6 | -2.32177 | -2.32177 | 1.7634 | 3.1674 | -178.241 | 226.6404 |
| 2019 | Beta Glass Company | 0.6574 | 4.8208 | 0.3765 | 0.5599 | -30.3564 | 9.3674 | -0.1471 | 6 |  |  | 2.259 | 3.3594 | -182.138 | 56.2044 |
| 2020 | Beta Glass Company | 0.6092 | 7.9942 | 4.7401 | 0.3773 | -32.22 | 46.2743 | -0.1759 | 5 |  |  | 23.7005 | 1.8865 | -161.1 | 231.3715 |
| 2011 | Cadbury Nig | 1.2131 | 9.7436 | 4.2191 | 0.1558 | -27.3592 | 1.1906 | 0.5697 | 6 | -0.56265 | -0.56265 | 25.3146 | 0.9348 | -164.155 | 7.1436 |
| 2012 | Cadbury Nig | 2.3399 | 26.3636 | 3.8488 | 0.3565 | -37.3133 | 4.8438 | 1.7692 | 6 | 0.570527 | 0.570527 | 23.0928 | 2.139 | -223.88 | 29.0628 |
| 2013 | Cadbury Nig | 4.321 | 30.7344 | 3.662 | 0.1606 | -18.8407 | 4.5397 | 3.7321 | 6 | 1.316971 | 1.31697 | 21.972 | 0.9636 | -113.044 | 27.2382 |
| 2014 | Cadbury Nig | 3.2832 | 53.3333 | 6.6758 | 0 | 3.0922 | 48.7781 | 2.411 | 6 | 0.880042 | 0.880042 | 40.0548 | 0 | 18.5532 | 292.6686 |
| 2015 | Cadbury Nig | 1.5109 | 28.1148 | 6.2789 | 0 | -27.2322 | 23.4499 | 0.7012 | 6 | -0.35496 | -0.35496 | 37.6734 | 0 | -163.393 | 140.6994 |
| 2016 | Cadbury Nig | 1.1852 | 64.3125 | 5.2407 | 0.0627 | -47.3409 | -81.5812 | 0.2913 | 6 | -1.2334 | -1.2334 | 31.4442 | 0.3762 | -284.045 | -489.487 |
| 2017 | Cadbury Nig | 1.5309 | 97.9375 | 5.6011 | 1.9279 | -14.3638 | 13.2215 | 0.6223 | 6 | -0.47433 | -0.47433 | 33.6066 | 11.5674 | -86.1828 | 79.329 |
| 2018 | Cadbury Nig | 1.0732 | 22.7273 | 5.5615 | 2.1514 | -32.6902 | 1.9185 | 0.2218 | 6 | -1.50598 | -1.50598 | 33.369 | 12.9084 | -196.141 | 11.511 |
| 2019 | Cadbury Nig | 1.0632 | 18.5088 | 5.4892 | 0 | -30.4259 | 12.7948 | 0.2173 | 6 | -1.52648 | -1.52648 | 32.9352 | 0 | -182.555 | 76.7688 |
| 2020 | Cadbury Nig | 509.245 | 18 | 4.8544 | 0.0036 | 128.353 | 69.4399 | 508.579 | 6 | 6.231621 | 6.23162 | 29.1264 | 0.0216 | 770.118 | 416.6394 |
| 2011 | Capital Hotel | 1.8 | 24.2143 | 3.1894 | 0 | 53.3134 | 60.7543 | 1.1095 | 6 | 0.10391 | 0.103909 | 19.1364 | 0 | 319.8804 | 364.5258 |
| 2012 | Capital Hotel | 1.7858 | 27.2609 | 3.6193 | 0 | 36.8487 | 47.265 | 1.0868 | 6 | 0.083238 | 0.083238 | 21.7158 | 0 | 221.0922 | 283.59 |

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| 2013 | Capital Hotel | 1.2411 | 41.3636 | 4.0078 | 0 | -48.8611 | 54.1524 | 0.5973 | 6 | -0.51534 | -0.51534 | 24.0468 | 0 | -293.167 | 324.9144 |
| 2014 | Capital Hotel | 1.1204 | 26.75 | 4.3046 | 0 | -63.3085 | 35.3776 | 0.4483 | 5 | -0.80229 | -0.80229 | 21.523 | 0 | -316.543 | 176.888 |
| 2015 | Capital Hotel | 0.9225 | 12.0938 | 4.5127 | 0 | -26.5414 | 17.8147 | 0.268 | 6 | -1.31677 | -1.31677 | 27.0762 | 0 | -159.248 | 106.8882 |
| 2016 | Capital Hotel | 0.5785 | 4.2683 | 3.9403 | 0 | -27.7077 | 9.1466 | 0.0198 | 6 | -3.92207 | -3.92207 | 23.6418 | 0 | -166.246 | 54.8796 |
| 2017 | Capital Hotel | 0.4979 | 5 | 3.7867 | 0 | 19.9095 | 6.9503 | -0.1556 | 6 |  |  | 22.7202 | 0 | 119.457 | 41.7018 |
| 2018 | Capital Hotel | 0.4682 | 12.4 | 3.9049 | 0 | -25.1752 | 46.3881 | -0.1603 |  |  |  |  |  |  |  |
| 2019 | Capital Hotel | 0.5042 | 10.5769 | 4.9985 | 0 | -37.8438 | 22.8018 | -0.2507 |  |  |  |  |  |  |  |
| 2020 | Capital Hotel | 0.2963 | -13.75 | 2.3912 | 0 | -48.1792 | 0 | -0.6172 | 6 |  |  | 14.3472 | 0 | -289.075 | 0 |
| 2011 | Champion Breweries | 1.8175 | -3.0301 | 11.1325 | 7.4509 | -32.5548 | 0 | 0.822 | 4 | -0.19601 | -0.19602 | 44.53 | 29.8036 | -130.219 | 0 |
| 2012 | Champion Breweries | 2.0499 | -2.7852 | 11.5033 | 10.3961 | -30.7007 | 0 | 1.0538 | 4 | 0.052403 | 0.052403 | 46.0132 | 41.5844 | -122.803 | 0 |
| 2013 | Champion Breweries | 3.1568 | -12.9084 | 7.656 | 12.985 | -31.9231 | 0 | 2.1698 | 4 | 0.774635 | 0.774635 | 30.624 | 51.94 | -127.692 | 0 |
| 2014 | Champion Breweries | 2.5999 | -29.0833 | 8.8961 | 13.4236 | -29.6 | 0 | 1.6558 | 4 | 0.504284 | 0.504284 | 35.5844 | 53.6944 | -118.4 | 0 |
| 2015 | Champion Breweries | 2.7135 | 33.7 | 6.0925 | 0 | -53.5491 | 3.0168 | 1.8267 | 4 | 0.602511 | 0.602511 | 24.37 | 0 | -214.196 | 12.0672 |
| 2016 | Champion Breweries | 2.0144 | 3.5 | 6.3377 | 0 | -15.6926 | 2.4628 | 1.1268 | 4 | 0.119382 | 0.119382 | 25.3508 | 0 | -62.7704 | 9.8512 |
| 2017 | Champion Breweries | 1.777 | 29.7143 | 6.2229 | 0 | -14.1934 | 4.2777 | 0.8078 | 4 | -0.21344 | -0.21344 | 24.8916 | 0 | -56.7736 | 17.1108 |
| 2018 | Champion Breweries | 1.7113 | -66.3333 | 6.777 | 0 | 3.2784 | -11.4652 | 0.729 | 4 | -0.31608 | -0.31608 | 27.108 | 0 | 13.1136 | -45.8608 |
| 2019 | Champion Breweries | 0.882 | 47.5 | 8.3125 | 0 | -18.4289 | 5.1656 | -0.0541 | 4 |  |  | 33.25 | 0 | -73.7156 | 20.6624 |
| 2020 | Champion Breweries | 0.7946 | 43 | 9.2134 | 0.2227 | -62.0261 | 5.0222 | -0.1152 | 4 |  |  | 36.8536 | 0.8908 | -248.104 | 20.0888 |
| 2011 | Chams | 0.7806 | -1.9231 | 6.322 | 2.9369 | 3.2195 | 0 | -0.2119 | 6 |  |  | 37.932 | 17.6214 | 19.317 | 0 |
| 2012 | Chams | 0.634 | 16.6667 | 7.0622 | 2.6399 | -48.3932 | 0 | -0.3476 | 6 |  |  | 42.3732 | 15.8394 | -290.359 | 0 |
| 2013 | Chams | 0.6764 | 7.1429 | 3.0084 | 2.0196 | 48.0708 | 0 | -0.3108 | 6 |  |  | 18.0504 | 12.1176 | 288.4248 | 0 |
| 2014 | Chams | 0.6556 | 7.1429 | 1.9898 | 1.0793 | 7.1129 | 6.1557 | -0.3237 | 6 |  |  | 11.9388 | 6.475801 | 42.6774 | 36.9342 |
| 2015 | Chams | 0.8238 | -0.7246 | 3.27 | 1.8867 | 0.3624 | -0.3537 | -0.1579 | 6 |  |  | 19.62 | 11.3202 | 2.1744 | -2.1222 |
| 2016 | Chams | 0.9973 | -2 | 3.6845 | 0.2637 | 3.1725 | -0.8585 | 0.0277 | 6 | -3.58632 | -3.58632 | 22.107 | 1.5822 | 19.035 | -5.151 |
| 2017 | Chams | 1.3307 | -1.8519 | 0 | 0.3212 | 2.4623 | -20.1182 | 0.3693 | 6 | -0.99615 | -0.99615 | 0 | 1.9272 | 14.7738 | -120.709 |
| 2018 | Chams | 1.1496 | 2.8571 | 0 | 0.2995 | 26.0379 | 23.2343 | -0.1359 | 6 |  |  | 0 | 1.797 | 156.2274 | 139.4058 |
| 2019 | Chams | 0.7153 | 5.5 | 2.6411 | 0.1578 | -10.0973 | 19.0958 | -0.0577 | 6 |  |  | 15.8466 | 0.9468 | -60.5838 | 114.5748 |
| 2020 | Chams | 0.7225 | -1.3529 | 1.9217 | 1.8242 | 3.4777 | -3.0116 | -0.05 | 6 |  |  | 11.5302 | 10.9452 | 20.8662 | -18.0696 |
| 2011 | Chellarams | 1.3223 | 21.4333 | 2.4414 | 2.2102 | -34.0012 | 4.0743 | 0.3374 | 6 | -1.08649 | -1.08649 | 14.6484 | 13.2612 | -204.007 | 24.4458 |
| 2012 | Chellarams | 1.0563 | 16.3143 | 1.7333 | 3.1136 | -33.7118 | 0 | 0.0714 | 6 | -2.63946 | -2.63946 | 10.3998 | 18.6816 | -202.271 | 0 |
| 2013 | Chellarams | 0.8274 | 25.9375 | 1.6199 | 3.0577 | -62.5368 | 0 | -0.1396 | 6 |  |  | 9.7194 | 18.3462 | -375.221 | 0 |
| 2014 | Chellarams | 0.883 | -39.5 | 1.8886 | 2.9076 | 8.6951 | -190.422 | -0.0884 | 6 |  |  | 11.3316 | 17.4456 | 52.1706 | -1142.53 |
| 2015 | Chellarams | 1.0675 | -0.9039 | 1.4404 | 4.9846 | 20.5309 | -12.9935 | 0.0911 | 4 | -2.3958 | -2.3958 | 5.7616 | 19.9384 | 82.1236 | -51.974 |
| 2016 | Chellarams | 1.0973 | 17.9545 | 2.0517 | 10.5264 | -33.1979 | 105.402 | 0.1028 | 4 | -2.27497 | -2.27497 | 8.2068 | 42.1056 | -132.792 | 421.608 |
| 2017 | Chellarams | 1.0184 | 7.7 | 1.8218 | 7.108 | -41.1604 | 18.4094 | 0.0345 | 4 | -3.3668 | -3.3668 | 7.2872 | 28.432 | -164.642 | 73.6376 |

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| 2018 | Chellarams | 0.8817 | 1.2571 | 1.596 | 4.5473 | -25.6362 | 19.6355 | -0.0894 | 6 |  |  | 9.576 | 27.2838 | -153.817 | 117.813 |
| 2019 | Chellarams | 1.0868 | -0.8035 | 1.6096 | 3.9802 | 1.1143 | -2.604 | 0.1078 | 6 | -2.22748 | -2.22748 | 9.657599 | 23.8812 | 6.6858 | -15.624 |
| 2020 | Chellarams | 1.4828 | -0.4316 | 2.4493 | 8.244 | 2.2055 | -1.1731 | -0.1742 | 6 |  |  | 14.6958 | 49.464 | 13.233 | -7.0386 |
| 2011 | Chemical & Allied Product | 2.5828 | 7.754 | 2.4339 | 0 | -22.6899 | 26.5465 | 2.1752 | 6 | 0.777121 | 0.777121 | 14.6034 | 0 | -136.139 | 159.279 |
| 2012 | Chemical & Allied Product | 5.6284 | 14.0704 | 2.6766 | 0 | 32.8457 | 25.7835 | 5.0691 | 6 | 1.623163 | 1.62316 | 16.0596 | 0 | 197.0742 | 154.701 |
| 2013 | Chemical & Allied Product | 11.2986 | 23.9851 | 2.6475 | 0 | -32.1131 | 20.428 | 10.7788 | 6 | 2.377581 | 2.37758 | 15.885 | 0 | -192.679 | 122.568 |
| 2014 | Chemical & Allied Product | 8.8005 | 15.8228 | 2.691 | 0 | -31.9275 | 27.1499 | 8.1547 | 7 | 2.098594 | 2.09859 | 18.837 | 0 | -223.493 | 190.0493 |
| 2015 | Chemical & Allied Product | 7.7273 | 15.1004 | 2.3666 | 0 | -32.3134 | 40.4352 | 7.2742 | 3 | 1.984334 | 1.98433 | 7.0998 | 0 | -96.9402 | 121.3056 |
| 2016 | Chemical & Allied Product | 4.619 | 13.9738 | 2.0383 | 0.4718 | -30.1923 | 23.1257 | 4.092 | 6 | 1.409034 | 1.40903 | 12.2298 | 2.8308 | -181.154 | 138.7542 |
| 2017 | Chemical & Allied Product | 4.737 | 15.8879 | 1.0729 | 0.4122 | 31.3048 | 31.3022 | 4.2995 | 6 | 1.458499 | 1.4585 | 6.4374 | 2.4732 | 187.8288 | 187.8132 |
| 2018 | Chemical & Allied Product | 3.7327 | 12.0172 | 0.9605 | 0.2316 | -21.8832 | 12.2826 | 3.4203 | 6 | 1.229728 | 1.22973 | 5.763 | 1.3896 | -131.299 | 73.6956 |
| 2019 | Chemical & Allied Product | 2.4725 | 9.6386 | 1.0747 | 0.0129 | -31.5684 | 31.4581 | 2.1119 | 6 | 0.747588 | 0.747588 | 6.4482 | 0.0774 | -189.41 | 188.7486 |
| 2020 | Chemical & Allied Product | 1.5286 | 1.1429 | 0.8832 | 0.0153 | -32.2646 | 41.9689 | 1.2028 | 6 | 0.184652 | 0.184652 | 5.2992 | 0.0918 | -193.588 | 251.8134 |
| 2011 | Ci Leasing | 0.9051 | -3.3158 | 5.2003 | 0 | 43.3313 | -225.634 | -0.0668 | 6 |  |  | 31.2018 | 0 | 259.9878 | -1353.8 |
| 2012 | Ci Leasing | 0.9311 | 7.1429 | 3.4965 | 0 | -27.2051 | 17.8817 | -0.0463 | 6 |  |  | 20.979 | 0 | -163.231 | 107.2902 |
| 2013 | Ci Leasing | 0.7555 | 4.5455 | 6.2044 | 0 | -46.9344 | 3.9327 | -0.1998 | 6 |  |  | 37.2264 | 0 | -281.606 | 23.5962 |
| 2014 | Ci Leasing | 0.7229 | 2.6316 | 6.8383 | 0 | -56.7595 | 5.2243 | -0.2141 | 6 |  |  | 41.0298 | 0 | -340.557 | 31.3458 |
| 2015 | Ci Leasing | 0.7849 | 5.5556 | 6.7247 | 0 | -68.0508 | 8.7959 | -0.1667 | 6 |  |  | 40.3482 | 0 | -408.305 | 52.7754 |
| 2016 | Ci Leasing | 0.7845 | 0.9259 | 6.4528 | 0 | -11.1324 | 38.1087 | -0.1898 | 6 |  |  | 38.7168 | 0 | -66.7944 | 228.6522 |
| 2017 | Ci Leasing | 0.8165 | 1.9545 | 6.7538 | 7.7824 | -12.8981 | 10.1678 | -0.1559 | 6 |  |  | 40.5228 | 46.6944 | -77.3886 | 61.0068 |
| 2018 | Ci Leasing | 0.7897 | 2.1975 | 7.1884 | 8.8812 | -22.2349 | 18.4864 | -0.1777 |  |  |  |  |  |  |  |
| 2019 | Ci Leasing | 0.7976 | 2.3413 | 7.0108 | 10.2113 | -7.2323 | 14.2686 | -0.167 | 6 |  |  | 42.0648 | 61.2678 | -43.3938 | 85.6116 |
| 2020 | Ci Leasing | 0.8073 | 13 | 7.1618 | 9.7929 | -34.4583 | 35.7456 | -0.1674 | 6 |  |  | 42.9708 | 58.7574 | -206.75 | 214.4736 |
| 2011 | Conoil | 0.7799 | 7.2917 | 2.9527 | 2.5612 | -31.5589 | 47.8152 | 0.0799 | 6 | -2.52698 | -2.52698 | 17.7162 | 15.3672 | -189.353 | 286.8912 |
| 2012 | Conoil | 0.9059 | 19.9029 | 1.6464 | 5.0145 | -37.7638 | 0 | -0.0172 | 6 |  |  | 9.8784 | 30.087 | -226.583 | 0 |
| 2013 | Conoil | 1.0165 | 15.3688 | 1.968 | 2.7337 | -32.9063 | 7.0527 | 0.3538 | 6 | -1.03902 | -1.03902 | 11.808 | 16.4022 | -197.438 | 42.3162 |
| 2014 | Conoil | 0.7603 | 31.7583 | 1.6991 | 2.6651 | -45.5401 | 48.9501 | 0.1201 | 6 | -2.11943 | -2.11943 | 10.1946 | 15.9906 | -273.241 | 293.7006 |
| 2015 | Conoil | 0.5619 | 7.4294 | 2.0023 | 5.4153 | -33.0832 | 62.4492 | -0.0073 | 6 |  |  | 12.0138 | 32.4918 | -198.499 | 374.6952 |
| 2016 | Conoil | 0.5024 | 9.1638 | 1.7111 | 2.5273 | -33.7028 | 41.5025 | 0.108 | 7 | -2.22562 | -2.22562 | 11.9777 | 17.6911 | -235.92 | 290.5175 |
| 2017 | Conoil | 0.6144 | 12.3348 | 1.2453 | 3.4002 | -31.5071 | 93.0732 | 0.0245 | 7 | -3.70908 | -3.70908 | 8.7171 | 23.8014 | -220.55 | 651.5124 |
| 2018 | Conoil | 0.7123 | 8.9768 | 1.6564 | 2.4764 | -30.027 | 47.5147 | -0.0356 | 6 |  |  | 9.9384 | 14.8584 | -180.162 | 285.0882 |
| 2019 | Conoil | 0.7844 | 6.5141 | 1.5162 | 1.7509 | -30.3674 | 9.4687 | -0.1043 | 6 |  |  | 9.097199 | 10.5054 | -182.204 | 56.8122 |
| 2020 | Conoil | 0.776 | 10.024 | 1.9829 | 1.4419 | -32.8739 | 24.6911 | -0.1034 | 4 |  |  | 7.9316 | 5.7676 | -131.496 | 98.7644 |
| 2011 | Courtville Investment | 0.5908 | 6.25 | 3.5713 | 0.3614 | -19.1951 | 6.5869 | -0.3809 | 4 |  |  | 14.2852 | 1.4456 | -76.7804 | 26.3476 |
| 2012 | Courtville Investment | 0.7215 | 6.25 | 2.3228 | 0.7602 | -20.2778 | 22.188 | -0.2314 | 4 |  |  | 9.2912 | 3.0408 | -81.1112 | 88.752 |

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| 2013 | Courtville Investment | 0.8433 | 7.4444 | 1.9677 | 0.9687 | -23.6273 | 3.7218 | -0.1345 | 4 |  |  | 7.8708 | 3.8748 | -94.5092 | 14.8872 |
| 2014 | Courtville Investment | 0.6661 | 5.5556 | 3.4715 | 1.191 | -30.4955 | 5.9164 | -0.3061 | 4 |  |  | 13.886 | 4.764 | -121.982 | 23.6656 |
| 2015 | Courtville Investment | 0.6706 | 25 | 5.5112 | 3.5292 | -64.4132 | 10.3045 | -0.3062 | 4 |  |  | 22.0448 | 14.1168 | -257.653 | 41.218 |
| 2016 | Courtville Investment | 0.6567 | 25 | 5.2377 | 3.199 | -5.3411 | 283.439 | -0.3489 | 4 |  |  | 20.9508 | 12.796 | -21.3644 | 1133.756 |
| 2017 | Courtville Investment | 0.6434 | 50 | 3.1233 | 1.1206 | -28.9409 | 356.298 | -0.3479 | 5 |  |  | 15.6165 | 5.603 | -144.705 | 1781.49 |
| 2018 | Courtville Investment | 0.383 |  | 4.1675 | 0.4762 | -56.3725 | 24.8719 | -0.6076 | 4 |  |  | 16.67 | 1.9048 | -225.49 | 99.4876 |
| 2019 | Courtville Investment | 0.3468 |  | 3.5786 | 0.3735 | -53.8909 | 41.5579 | 0.1173 | 4 | -2.14302 | -2.14302 | 14.3144 | 1.494 | -215.564 | 166.2316 |
| 2020 | Courtville Investment | 0.229 |  | 0 | 0.5025 | -17.4449 | 27.9088 | -0.6577 | 4 |  |  | 0 | 2.01 | -69.7796 | 111.6352 |
| 2011 | Cutix | 1.3099 | 9.6875 | 5.1724 | 4.0216 | -32.7297 | 40.238 | 0.3456 | 4 | -1.06247 | -1.06247 | 20.6896 | 16.0864 | -130.919 | 160.952 |
| 2012 | Cutix | 1.298 | 10.2 | 5.0768 | 3.6685 | -33.3974 | 58.0765 | 0.3159 | 4 | -1.15233 | -1.15233 | 20.3072 | 14.674 | -133.59 | 232.306 |
| 2013 | Cutix | 1.8278 | 10.4706 | 4.1247 | 3.9362 | -33.0786 | 30.2996 | 0.9037 | 4 | -0.10126 | -0.10126 | 16.4988 | 15.7448 | -132.314 | 121.1984 |
| 2014 | Cutix | 1.2219 | 5.4167 | 4.7204 | 2.9756 | -21.7949 | 22.6086 | 0.242 | 4 | -1.41882 | -1.41882 | 18.8816 | 11.9024 | -87.1796 | 90.4344 |
| 2015 | Cutix | 1.3535 | 9.7647 | 4.8178 | 5.674 | -26.1733 | 13.3979 | 0.3648 | 4 | -1.00841 | -1.00841 | 19.2712 | 22.696 | -104.693 | 53.5916 |
| 2016 | Cutix | 1.3361 | 8.1818 | 5.1405 | 7.2415 | -31.4846 | 79.951 | 0.3779 | 4 | -0.97313 | -0.97313 | 20.562 | 28.966 | -125.938 | 319.804 |
| 2017 | Cutix | 1.275 | 6.931 | 4.0946 | 5.2187 | -30.4328 | 24.6364 | 0.3246 | 4 | -1.12516 | -1.12516 | 16.3784 | 20.8748 | -121.731 | 98.5456 |
| 2018 | Cutix | 1.0143 | 3.28 | 4.6091 | 4.8482 | -33.4462 | 12.5931 | 0.0511 | 5 | -2.97397 | -2.97397 | 23.0455 | 24.241 | -167.231 | 62.9655 |
| 2019 | Cutix | 1.2156 | 4.9259 | 5.8599 | 3.746 | -29.7737 | 26.0883 | 0.2549 | 5 | -1.36688 | -1.36688 | 29.2995 | 18.73 | -148.869 | 130.4415 |
| 2020 | Cutix | 1.5727 | 10.3047 | 3.0254 | 4.2076 | -32.9034 | 25.2203 | 0.6189 | 6 | -0.47981 | -0.47981 | 18.1524 | 25.2456 | -197.42 | 151.3218 |
| 2011 | Dangote Cement | 3.9739 | 15.5358 | 3.056 | 1.0338 | 6.7112 | 1.0176 | 3.0173 | 6 | 1.104362 | 1.10436 | 18.336 | 6.2028 | 40.2672 | 6.1056 |
| 2012 | Dangote Cement | 3.551 | 14.361 | 4.096 | 1.9682 | 12.0058 | 1.8717 | 2.6169 | 6 | 0.96199 | 0.96199 | 24.576 | 11.8092 | 72.03481 | 11.2302 |
| 2013 | Dangote Cement | 4.6898 | 18.4802 | 3.9973 | 1.6268 | 5.4711 | 1.0147 | 3.7734 | 6 | 1.327976 | 1.32798 | 23.9838 | 9.760799 | 32.8266 | 6.088201 |
| 2014 | Dangote Cement | 3.8391 | 21.1416 | 3.6829 | 3.349 | -13.6378 | 0.1223 | 2.86 | 6 | 1.050822 | 1.05082 | 22.0974 | 20.094 | -81.8268 | 0.7338 |
| 2015 | Dangote Cement | 2.9906 | 15.6538 | 3.8047 | 4.892 | -3.7022 | 1.1864 | 2.0273 | 6 | 0.706705 | 0.706705 | 22.8282 | 29.352 | -22.2132 | 7.118401 |
| 2016 | Dangote Cement | 2.343 | 15.343 | 4.8923 | 2.9701 | 3.1476 | 0.6234 | 1.4187 | 8 | 0.349741 | 0.349741 | 39.1384 | 23.7608 | 25.1808 | 4.9872 |
| 2017 | Dangote Cement | 2.7826 | 19.7425 | 5.0387 | 3.1641 | -29.4699 | 1.1095 | 1.8837 | 8 | 0.633238 | 0.633238 | 40.3096 | 25.3128 | -235.759 | 8.876 |
| 2018 | Dangote Cement | 2.227 | 8.3092 | 5.6775 | 2.9377 | 29.7597 | 3.711 | 1.3255 | 8 | 0.28179 | 0.28179 | 45.42 | 23.5016 | 238.0776 | 29.688 |
| 2019 | Dangote Cement | 1.8028 | 12.0441 | 5.4821 | 3.312 | -19.945 | 1.8369 | 0.874 | 8 | -0.13467 | -0.13468 | 43.8568 | 26.496 | -159.56 | 14.6952 |
| 2020 | Dangote Cement | 2.4016 | 15.1735 | 4.4272 | 2.175 | 26.0486 | 5.6245 | 1.6228 | 6 | 0.484153 | 0.484153 | 26.5632 | 13.05 | 156.2916 | 33.747 |
| 2011 | Dangote Sugar | 1.1447 | 7.5806 | 1.0044 | 0 | 32.2091 | 45.9903 | 0.2284 | 6 | -1.47666 | -1.47666 | 6.0264 | 0 | 193.2546 | 275.9418 |
| 2012 | Dangote Sugar | 1.009 | 6.6667 | 1.0296 | 0 | 33.8928 | 21.2704 | 0.3099 | 6 | -1.17151 | -1.17151 | 6.1776 | 0 | 203.3568 | 127.6224 |
| 2013 | Dangote Sugar | 2.0289 | 13 | 0.9052 | 0.0808 | -33.318 | 36.1374 | 1.1306 | 6 | 0.122748 | 0.122748 | 5.4312 | 0.4848 | -199.908 | 216.8244 |
| 2014 | Dangote Sugar | 1.2003 | 6.5464 | 3.974 | 0.1147 | -23.8155 | 29.6046 | 0.2671 | 6 | -1.32013 | -1.32013 | 23.844 | 0.6882 | -142.893 | 177.6276 |
| 2015 | Dangote Sugar | 1.0602 | 6.3646 | 3.77 | 0.6479 | -30.2946 | 32.3106 | 0.1478 | 6 | -1.9119 | -1.9119 | 22.62 | 3.8874 | -181.768 | 193.8636 |
| 2016 | Dangote Sugar | 0.8385 | 5.025 | 2.6818 | 0.1676 | -26.6054 | 25.3491 | 0.0348 | 6 | -3.35814 | -3.35814 | 16.0908 | 1.0056 | -159.632 | 152.0946 |
| 2017 | Dangote Sugar | 1.5428 | 6.0423 | 2.5799 | 2.1208 | -25.7753 | 11.2488 | 0.7549 | 6 | -0.28117 | -0.28117 | 15.4794 | 12.7248 | -154.652 | 67.4928 |

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| 2018 | Dangote Sugar | 1.3566 | 8.2432 | 2.9928 | 0.1474 | -36.4861 | 5.1597 | 0.4798 | 6 | -0.73439 | -0.73439 | 17.9568 | 0.8844 | -218.917 | 30.9582 |
| 2019 | Dangote Sugar | 1.1572 | 7.2727 | 0.1927 | 0.2346 | -25.0136 | 41.1577 | 0.2843 | 6 | -1.25773 | -1.25773 | 1.1562 | 1.4076 | -150.082 | 246.9462 |
| 2020 | Dangote Sugar | 1.159 | 7.1837 | 2.7692 | 0.689 | -34.7354 | 24.296 | 0.3204 | 4 | -1.13819 | -1.13819 | 11.0768 | 2.756 | -138.942 | 97.184 |
| 2011 | Eternaoil | 0.7872 | 3.1828 | 0.5898 | 2.4501 | -32.3331 | 1.86 | -0.1342 | 4 |  |  | 2.3592 | 9.8004 | -129.332 | 7.44 |
| 2012 | Eternaoil | 0.9071 | 3.7671 | 0.7585 | 1.542 | 33.0311 | 9.3435 | -0.0846 | 4 |  |  | 3.034 | 6.168 | 132.1244 | 37.374 |
| 2013 | Eternaoil | 0.7741 | 5.0926 | 1.4553 | 4.0762 | -34.2456 | 12.6839 | -0.1931 | 4 |  |  | 5.8212 | 16.3048 | -136.982 | 50.7356 |
| 2014 | Eternaoil | 0.8489 | 3.6667 | 2.091 | 1.4947 | 0 | 18.8882 | -0.371 | 4 |  |  | 8.364 | 5.9788 | 0 | 75.5528 |
| 2015 | Eternaoil | 0.6899 | 2.0918 | 1.1384 | 1.8625 | -2.1822 | 13.8211 | -0.2454 | 4 |  |  | 4.5536 | 7.45 | -8.7288 | 55.2844 |
| 2016 | Eternaoil | 0.5613 | 2.7434 | 1.0848 | 11.1453 | -38.4395 | 4.7625 | -0.2141 | 4 |  |  | 4.3392 | 44.5812 | -153.758 | 19.05 |
| 2017 | Eternaoil | 0.7584 | 406 | 1.0204 | 1.1154 | -28.8324 | 14.9822 | -0.1482 | 4 |  |  | 4.0816 | 4.4616 | -115.33 | 59.9288 |
| 2018 | Eternaoil | 0.7969 | 470 | 1.0864 | 1.6356 | -49.2941 | 31.3347 | -0.127 |  |  |  |  |  |  |  |
| 2019 | Eternaoil | 0.6886 | -32.7273 | 2.3826 | 5.9144 | -229.477 | 655.913 | -0.2703 | 4 |  |  | 9.5304 | 23.6576 | -917.908 | 2623.652 |
| 2020 | Eternaoil | 0.7553 | 7.0833 | 1.9982 | 2.8417 | 71.6773 | 64.8274 | -0.1873 | 6 |  |  | 11.9892 | 17.0502 | 430.0638 | 388.9644 |
| 2011 | Etranzact Interntional | 7.5227 | 247 | 2.1021 | 0 | 35.5052 | 1.9796 | 6.7984 | 6 | 1.916687 | 1.91669 | 12.6126 | 0 | 213.0312 | 11.8776 |
| 2012 | Etranzact Interntional | 5.147 | 128 | 3.4813 | 0 | -28.5046 | 15.1376 | 4.4091 | 6 | 1.483671 | 1.48367 | 20.8878 | 0 | -171.028 | 90.8256 |
| 2013 | Etranzact Interntional | 2.9665 | 51.2 | 2.3897 | 0 | -21.8006 | 9.228 | 2.2738 | 6 | 0.821452 | 0.821452 | 14.3382 | 0 | -130.804 | 55.368 |
| 2014 | Etranzact Interntional | 2.9996 | 33.9 | 2.2413 | 0 | -32.5539 | 0 | 2.4149 | 6 | 0.881658 | 0.881658 | 13.4478 | 0 | -195.323 | 0 |
| 2015 | Etranzact Interntional | 2.065 | 17.8824 | 2.3311 | 0 | -33.765 | 6.4314 | 1.5924 | 6 | 0.465242 | 0.465242 | 13.9866 | 0 | -202.59 | 38.5884 |
| 2016 | Etranzact Interntional | 3.038 | 45.4545 | 2.2285 | 0 | -48.0442 | 22.2883 | 2.531 | 6 | 0.928614 | 0.928614 | 13.371 | 0 | -288.265 | 133.7298 |
| 2017 | Etranzact Interntional | 3.4674 | 100 | 2.6249 | 0 | -28.6775 | 102.758 | 2.8358 | 6 | 1.042324 | 1.04232 | 15.7494 | 0 | -172.065 | 616.548 |
| 2018 | Etranzact Interntional | 3.3241 | -5.2667 | 3.4251 | 0 | -4.3092 | -7.1216 | 2.7534 | 6 | 1.012837 | 1.01284 | 20.5506 | 0 | -25.8552 | -42.7296 |
| 2019 | Etranzact Interntional | 2.0903 | 65.25 | 3.0964 | 0.237 | -49.5773 | 0 | 1.5747 | 6 | 0.454065 | 0.454065 | 18.5784 | 1.422 | -297.464 | 0 |
| 2020 | Etranzact Interntional | 2.1408 | -5.1778 | 3.7183 | 0.2581 | 0.9976 | -5.715 | 1.6778 | 6 | 0.517484 | 0.517483 | 22.3098 | 1.5486 | 5.9856 | -34.29 |
| 2011 | Fidson Healthcare | 0.5723 | 19.75 | 2.1593 | 3.7571 | 74.0554 | 125.9 | -0.4254 | 6 |  |  | 12.9558 | 22.5426 | 444.3324 | 755.4 |
| 2012 | Fidson Healthcare | 0.6399 | 7.5714 | 1.7563 | 2.9455 | 61.702 | 48.7143 | -0.3375 | 6 |  |  | 10.5378 | 17.673 | 370.212 | 292.2858 |
| 2013 | Fidson Healthcare | 0.9022 | 27.9 | 1.7402 | 3.33 | -37.9064 | 61.9493 | -0.0866 | 6 |  |  | 10.4412 | 19.98 | -227.438 | 371.6958 |
| 2014 | Fidson Healthcare | 0.9924 | 9.2857 | 1.6914 | 3.5156 | -27.4442 | 8.0385 | 0.0054 | 6 | -5.22136 | -5.22136 | 10.1484 | 21.0936 | -164.665 | 48.231 |
| 2015 | Fidson Healthcare | 0.8383 | 5 | 1.693 | 4.3008 | -11.1762 | 0 | -0.1544 | 6 |  |  | 10.158 | 25.8048 | -67.0572 | 0 |
| 2016 | Fidson Healthcare | 0.6996 | 6.0952 | 1.3584 | 4.1446 | -28.623 | 45.6455 | -0.2804 | 6 |  |  | 8.1504 | 24.8676 | -171.738 | 273.873 |
| 2017 | Fidson Healthcare | 0.8606 | 5.2113 | 1.4229 | 5.7412 | -32.7997 | 18.2847 | -0.1188 | 6 |  |  | 8.537399 | 34.4472 | -196.798 | 109.7082 |
| 2018 | Fidson Healthcare | 0.9868 | -82.5 | 1.3519 | 9.3979 | -160.576 | 90.0589 | 0.0132 | 6 | -4.32754 | -4.32754 | 8.1114 | 56.3874 | -963.456 | 540.3534 |
| 2019 | Fidson Healthcare | 0.8303 | 15.5 | 3.8138 | 8.5203 | -29.2666 | 15.5317 | -0.1548 | 6 |  |  | 22.8828 | 51.1218 | -175.6 | 93.1902 |
| 2020 | Fidson Healthcare | 0.8401 | 7.7586 | 2.5923 | 4.8965 | -32.0263 | 5.385 | -0.0422 | 6 |  |  | 15.5538 | 29.379 | -192.158 | 32.31 |
| 2011 | Flour Mills Of Nigeria | 1.4776 | 14.4801 | 4.7325 | 3.8206 | 42.5359 | 24.7231 | 0.5319 | 6 | -0.6313 | -0.6313 | 28.395 | 22.9236 | 255.2154 | 148.3386 |
| 2012 | Flour Mills Of Nigeria | 1.2506 | 21.1039 | 3.5473 | 3.5006 | 30.4771 | 49.0194 | 0.3633 | 6 | -1.01253 | -1.01253 | 21.2838 | 21.0036 | 182.8626 | 294.1164 |

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| 2013 | Flour Mills Of Nigeria | 1.4374 | 29.8969 | 3.4385 | 4.0704 | 30.7983 | 37.4198 | 0.5153 | 6 | -0.66301 | -0.66301 | 20.631 | 24.4224 | 184.7898 | 224.5188 |
| 2014 | Flour Mills Of Nigeria | 1.0084 | 20.3109 | 4.1873 | 5.4168 | 34.7607 | 32.3902 | 0.065 | 6 | -2.73337 | -2.73337 | 25.1238 | 32.5008 | 208.5642 | 194.3412 |
| 2015 | Flour Mills Of Nigeria | 0.8224 | 6.0641 | 3.591 | 5.4553 | 9.5574 | 31.2171 | -0.0868 | 6 |  |  | 21.546 | 32.7318 | 57.3444 | 187.3026 |
| 2016 | Flour Mills Of Nigeria | 0.7276 | 3.3196 | 4.2543 | 6.4855 | 25.5108 | 5.4827 | -0.1368 | 6 |  |  | 25.5258 | 38.913 | 153.0648 | 32.8962 |
| 2017 | Flour Mills Of Nigeria | 0.8519 | 9.571 | 0.493 | 6.7404 | -15.6251 | 5.9322 | -0.0548 | 6 |  |  | 2.958 | 40.4424 | -93.7506 | 35.5932 |
| 2018 | Flour Mills Of Nigeria | 0.7251 | 4.7826 | 0.6862 | 8.0073 | -17.8442 | 7.9684 | -0.2204 | 6 |  |  | 4.1172 | 48.0438 | -107.065 | 47.8104 |
| 2019 | Flour Mills Of Nigeria | 0.7903 | 19.7 | 0.367 | 5.4918 | -59.7921 | 25.9708 | -0.1684 | 6 |  |  | 2.202 | 32.9508 | -358.753 | 155.8248 |
| 2020 | Flour Mills Of Nigeria | 0.8256 | 10.4 | 0 | 4.6191 | -34.0616 | 14.8513 | -0.1138 | 4 |  |  | 0 | 18.4764 | -136.246 | 59.4052 |
| 2011 | Ftn Cocoa Processors | 0.7186 | -4.5455 | 0.1819 | 1.4867 | 0 | 0 | -0.2809 | 4 |  |  | 0.7276 | 5.9468 | 0 | 0 |
| 2012 | Ftn Cocoa Processors | 0.7963 | -2.7778 | 3.7283 | 1.7407 | 0 | 0 | -0.2006 | 4 |  |  | 14.9132 | 6.9628 | 0 | 0 |
| 2013 | Ftn Cocoa Processors | 0.8689 | -3.8462 | 3.5935 | 3.584 | 0 | 0 | -0.1305 | 4 |  |  | 14.374 | 14.336 | 0 | 0 |
| 2014 | Ftn Cocoa Processors | 0.9499 | -1.9231 | 3.5349 | 3.7112 | 0 | 0 | -0.02 | 4 |  |  | 14.1396 | 14.8448 | 0 | 0 |
| 2015 | Ftn Cocoa Processors | 1.0104 | -5.5556 | 3.3634 | 6.3376 | 0 | 0 | 0.0109 | 4 | -4.51899 | -4.51899 | 13.4536 | 25.3504 | 0 | 0 |
| 2016 | Ftn Cocoa Processors | 0.981 | -1.2821 | 0.1954 | 7.9902 | 0 | 0 | -0.0159 | 4 |  |  | 0.7816 | 31.9608 | 0 | 0 |
| 2017 | Ftn Cocoa Processors | 1.149 | -1.4286 | 0.3014 | 6.6844 | 0 | 0 | 0.1497 |  | -1.89912 | -1.89912 |  |  |  |  |
| 2018 | Ftn Cocoa Processors | 1.0823 | -0.7692 | 4.1933 | 5.4223 | 0.6145 | 0 | 0.0838 |  | -2.47932 | -2.47932 |  |  |  |  |
| 2019 | Ftn Cocoa Processors | 1.2576 | -0.5556 | 4.3275 | 6.1342 | 0.5104 | 0 | 0.2591 | 5 | -1.35054 | -1.35054 | 21.6375 | 30.671 | 2.552 | 0 |
| 2020 | Ftn Cocoa Processors | 0.4901 | -1.7368 | 49.8755 | 8.5719 | 0.0698 | 0 | 0.6131 | 6 | -0.48923 | -0.48923 | 299.253 | 51.4314 | 0.4188 | 0 |
| 2011 | Glaxosmithkline Nig | 1.507 | 9.5833 | 4.1185 | 0.01 | 34.2904 | 13.5792 | 0.729 | 6 | -0.31608 | -0.31608 | 24.711 | 0.06 | 205.7424 | 81.4752 |
| 2012 | Glaxosmithkline Nig | 2.2911 | 15.2881 | 3.7194 | 0.0007 | 32.3166 | 18.5866 | 1.4915 | 6 | 0.399782 | 0.399782 | 22.3164 | 0.0042 | 193.8996 | 111.5196 |
| 2013 | Glaxosmithkline Nig | 2.8624 | 22.2951 | 3.5326 | 0.002 | -32.3456 | 26.8935 | 2.0118 | 6 | 0.69903 | 0.69903 | 21.1956 | 0.012 | -194.074 | 161.361 |
| 2014 | Glaxosmithkline Nig | 2.1879 | 25.9067 | 4.0876 | 0.0183 | -32.8235 | 29.8755 | 1.2485 | 6 | 0.221943 | 0.221943 | 24.5256 | 0.1098 | -196.941 | 179.253 |
| 2015 | Glaxosmithkline Nig | 1.5074 | 35.625 | 4.5999 | 0.0118 | -16.6276 | 82.9528 | 0.6235 | 6 | -0.47241 | -0.47241 | 27.5994 | 0.0708 | -99.7656 | 497.7168 |
| 2016 | Glaxosmithkline Nig | 0.3901 | 7.9146 | 2.5018 | 0.0004 | 1179.32 | 216.282 | -0.0701 | 6 |  |  | 15.0108 | 0.0024 | 7075.92 | 1297.692 |
| 2017 | Glaxosmithkline Nig | 0.8249 | 154.357 | 1.3498 | 0 | -56.7334 | 168.063 | 0.3273 | 6 | -1.11688 | -1.11688 | 8.0988 | 0 | -340.4 | 1008.378 |
| 2018 | Glaxosmithkline Nig | 1.326 | 27.8846 | 2.4059 | 0 | -46.7636 | 26.3454 | 0.5419 | 6 | -0.61267 | -0.61267 | 14.4354 | 0 | -280.582 | 158.0724 |
| 2019 | Glaxosmithkline Nig | 0.694 | 7.9221 | 1.8771 | 0 | -21.5702 | 14.2528 | -0.0994 | 6 |  |  | 11.2626 | 0 | -129.421 | 85.5168 |
| 2020 | Glaxosmithkline Nig | 3.5597 | 13.2692 | 2.0222 | 0.1649 | -37.7908 | 43.8658 | 3.103 | 6 | 1.132369 | 1.13237 | 12.1332 | 0.9894 | -226.745 | 263.1948 |
| 2011 | Greif Nig | 1.1659 | 14.7556 | 4.5606 | 0.2522 | -45.3835 | 6.8585 | 0.3203 | 6 | -1.1385 | -1.1385 | 27.3636 | 1.5132 | -272.301 | 41.151 |
| 2012 | Greif Nig | 1.0516 | 15.2706 | 3.4995 | 0 | -35.1038 | 37.2565 | 0.2312 | 6 | -1.46447 | -1.46447 | 20.997 | 0 | -210.623 | 223.539 |
| 2013 | Greif Nig | 1.0906 | 17.6111 | 3.4785 | 0 | -41.6303 | 21.8548 | 0.3227 | 6 | -1.13103 | -1.13103 | 20.871 | 0 | -249.782 | 131.1288 |
| 2014 | Greif Nig | 1.0109 | 11.8431 | 3.3689 | 0 | -25.1357 | 28.8028 | 0.2674 | 6 | -1.31901 | -1.31901 | 20.2134 | 0 | -150.814 | 172.8168 |
| 2015 | Greif Nig | 0.8606 | 19.7931 | 2.5734 | 0 | -38.6685 | 45.0646 | 0.2136 | 5 | -1.54365 | -1.54365 | 12.867 | 0 | -193.343 | 225.323 |
| 2016 | Greif Nig | 1.0032 | 15.1406 | 2.4843 | 0 | -38.015 | 115.585 | 0.104 | 5 | -2.26336 | -2.26336 | 12.4215 | 0 | -190.075 | 577.925 |
| 2017 | Greif Nig | 0.8176 | 7.8362 | 2.957 | 0 | 0 | 55.6046 | 0.0333 | 5 | -3.4022 | -3.4022 | 14.785 | 0 | 0 | 278.023 |

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| 2018 | Greif Nig | 1.3472 | -1.4756 | 3.2642 | 0 | 7.0791 | -20.078 | 0.607 | 6 | -0.49923 | -0.49923 | 19.5852 | 0 | 42.4746 | -120.468 |
| 2019 | Greif Nig | 4.2693 | -1.2432 | 5.3319 | 0 | 0.2231 | 0 | 3.4656 | 6 | 1.242886 | 1.24289 | 31.9914 | 0 | 1.3386 | 0 |
| 2020 | Greif Nig | -0.1103 | 0 | 0.0419 | 0 | -12.0546 | 0.1741 | -0.4259 | 6 |  |  | 0.2514 | 0 | -72.3276 | 1.0446 |
| 2011 | Guinness Nig | 4.4737 | 20.5592 | 4.8783 | 0.6125 | -31.5126 | 23.7612 | 3.5613 | 6 | 1.270126 | 1.27013 | 29.2698 | 3.675 | -189.076 | 142.5672 |
| 2012 | Guinness Nig | 4.4169 | 28.527 | 7.4344 | 1.9748 | -30.2629 | 30.5697 | 3.4619 | 6 | 1.241818 | 1.24182 | 44.6064 | 11.8488 | -181.577 | 183.4182 |
| 2013 | Guinness Nig | 3.529 | 29.7604 | 8.341 | 3.4081 | -30.2498 | 30.5233 | 2.5553 | 6 | 0.93817 | 0.93817 | 50.046 | 20.4486 | -181.499 | 183.1398 |
| 2014 | Guinness Nig | 2.5255 | 26.4387 | 7.9544 | 3.5983 | -18.0462 | 33.4046 | 1.573 | 6 | 0.452985 | 0.452985 | 47.7264 | 21.5898 | -108.277 | 200.4276 |
| 2015 | Guinness Nig | 2.0402 | 23.2432 | 9.2706 | 4.2456 | -27.7922 | 14.0865 | 1.0877 | 6 | 0.084065 | 0.084065 | 55.6236 | 25.4736 | -166.753 | 84.519 |
| 2016 | Guinness Nig | 1.5662 | -61.9776 | 6.5139 | 5.8018 | -14.1168 | -77.0072 | 0.6088 | 6 | -0.49627 | -0.49627 | 39.0834 | 34.8108 | -84.7008 | -462.043 |
| 2017 | Guinness Nig | 1.6072 | 73.4375 | 6.1584 | 6.6953 | -27.7362 | 22.264 | 0.6752 | 6 | -0.39275 | -0.39275 | 36.9504 | 40.1718 | -166.417 | 133.584 |
| 2018 | Guinness Nig | 0.9502 | 21.8182 | 6.0283 | 3.6831 | -32.44 | 3.7244 | 0.3844 | 7 | -0.95607 | -0.95607 | 42.1981 | 25.7817 | -227.08 | 26.0708 |
| 2019 | Guinness Nig | 0.8259 | 12.02 | 6.2775 | 1.6253 | -22.8038 | 33.8568 | -0.1445 | 7 |  |  | 43.9425 | 11.3771 | -159.627 | 236.9976 |
| 2020 | Guinness Nig | 0.7455 | -3.3101 | 7.4058 | 3.1513 | -26.3261 | -7.6219 | -0.218 | 6 |  |  | 44.4348 | 18.9078 | -157.957 | -45.7314 |
| 2011 | Honywell Flour Mill | 0.9782 | 7.4516 | 3.8912 | 3.825 | -29.1084 | 22.6017 | 0.1094 | 6 | -2.21274 | -2.21274 | 23.3472 | 22.95 | -174.65 | 135.6102 |
| 2012 | Honywell Flour Mill | 0.9046 | 6.1471 | 2.4719 | 1.2441 | -26.2263 | 5.4444 | -0.0051 | 6 |  |  | 14.8314 | 7.4646 | -157.358 | 32.6664 |
| 2013 | Honywell Flour Mill | 1.1258 | 10.1944 | 2.253 | 0.953 | -25.4569 | 5.7887 | 0.1903 | 6 | -1.65915 | -1.65915 | 13.518 | 5.718 | -152.741 | 34.7322 |
| 2014 | Honywell Flour Mill | 0.9414 | 8.2381 | 2.8891 | 2.9563 | -20.9058 | 18.635 | 0.1071 | 7 | -2.23399 | -2.23399 | 20.2237 | 20.6941 | -146.341 | 130.445 |
| 2015 | Honywell Flour Mill | 0.883 | 14.6429 | 2.9516 | 1.8121 | -21.9232 | 28.542 | -0.0597 | 7 |  |  | 20.6612 | 12.6847 | -153.462 | 199.794 |
| 2016 | Honywell Flour Mill | 0.7165 | -3.4211 | 2.6177 | 1.6274 | 5.3849 | -3.4163 | -0.0796 | 6 |  |  | 15.7062 | 9.7644 | 32.3094 | -20.4978 |
| 2017 | Honywell Flour Mill | 0.6173 | 3.8889 | 2.2268 | 3.2941 | -21.2964 | 9.1476 | -0.3153 | 9 |  |  | 20.0412 | 29.6469 | -191.668 | 82.3284 |
| 2018 | Honywell Flour Mill | 0.5715 | 2.2857 | 2.3139 | 3.6888 | -9.1397 | 8.1305 | -0.3704 | 8 |  |  | 18.5112 | 29.5104 | -73.1176 | 65.044 |
| 2019 | Honywell Flour Mill | 0.5674 | 99 | 1.9916 | 2.4061 | -88.7514 | 82.0961 | -0.355 | 8 |  |  | 15.9328 | 19.2488 | -710.011 | 656.7688 |
| 2020 | Honywell Flour Mill | 0.5777 |  | 2.72 | 2.9716 | -48.7871 | 27.1669 | -0.3358 | 6 |  |  | 16.32 | 17.8296 | -292.723 | 163.0014 |
| 2011 | Ikeja Hotel | 0.8018 | 2.4286 | 0.6658 | 2.5457 | -17.288 | 30.2698 | -0.1062 | 6 |  |  | 3.9948 | 15.2742 | -103.728 | 181.6188 |
| 2012 | Ikeja Hotel | 0.5538 | 0.9639 | 0.7912 | 2.4966 | -29.7896 | 19.7896 | -0.3038 | 6 |  |  | 4.7472 | 14.9796 | -178.738 | 118.7376 |
| 2013 | Ikeja Hotel | 0.4789 | 1.625 | 2.2411 | 2.4693 | -35.7122 | 25.6739 | -0.2365 | 6 |  |  | 13.4466 | 14.8158 | -214.273 | 154.0434 |
| 2014 | Ikeja Hotel | 0.9181 | 26.4286 | 3.4562 | 2.5159 | -99.4785 | 95.4261 | 0.0977 | 6 | -2.32585 | -2.32585 | 20.7372 | 15.0954 | -596.871 | 572.5566 |
| 2015 | Ikeja Hotel | 0.8308 | 11.5926 | 3.5715 | 2.7132 | -31.9715 | 70.0277 | 0.0035 | 6 | -5.65499 | -5.65499 | 21.429 | 16.2792 | -191.829 | 420.1662 |
| 2016 | Ikeja Hotel | 0.6554 | 3.3585 | 3.1611 | 2.7316 | -31.1664 | 17.7389 | -0.1567 | 6 |  |  | 18.9666 | 16.3896 | -186.998 | 106.4334 |
| 2017 | Ikeja Hotel | 0.4745 | 5.9333 | 2.3061 | 1.8282 | -17.4181 | 33.923 | -0.4084 | 6 |  |  | 13.8366 | 10.9692 | -104.509 | 203.538 |
| 2018 | Ikeja Hotel | 0.4298 | 2.8868 | 2.3653 | 1.896 | -10.0661 | 21.3939 | -0.4038 | 6 |  |  | 14.1918 | 11.376 | -60.3966 | 128.3634 |
| 2019 | Ikeja Hotel | 0.413 | 2.8 | 2.2956 | 1.9496 | -27.2112 | 45.0648 | -0.4407 | 6 |  |  | 13.7736 | 11.6976 | -163.267 | 270.3888 |
| 2020 | Ikeja Hotel | 0.4616 | 0.3715 | 2.213 | 2.0377 | 8.3727 | 2.7535 | -0.4409 | 4 |  |  | 8.852 | 8.1508 | 33.4908 | 11.014 |
| 2011 | Interlinked Technologies | 2.8111 | 490 | 0.1914 | 0.1914 | 24.805 | 0 | 1.8419 | 4 | 0.610798 | 0.610798 | 0.7656 | 0.7656 | 99.22 | 0 |
| 2012 | Interlinked Technologies | 3.052 | -81.6667 | 0.5006 | 0.5006 | -12.02 | -5.7192 | 2.0589 | 4 | 0.722172 | 0.722172 | 2.0024 | 2.0024 | -48.08 | -22.8768 |

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| 2013 | Interlinked Technologies | 2.9886 | 245 | 0.5603 | 0.9875 | 46.8584 | 34.637 | 1.9942 | 4 | 0.690243 | 0.690243 | 2.2412 | 3.95 | 187.4336 | 138.548 |
| 2014 | Interlinked Technologies | 2.5558 | 147.667 | 0.4276 | 0.1527 | -19.0633 | 0 | 1.6189 | 4 | 0.481747 | 0.481747 | 1.7104 | 0.6108 | -76.2532 | 0 |
| 2015 | Interlinked Technologies | 2.6672 | 140.333 | 0.4795 | 0.107 | -32.3687 | 99.3533 | 1.6752 | 4 | 0.515933 | 0.515933 | 1.918 | 0.428 | -129.475 | 397.4132 |
| 2016 | Interlinked Technologies | 2.352 | 8.6364 | 0.4493 | 0.141 | -59.4761 | 77.9661 | 1.3557 | 4 | 0.304318 | 0.304318 | 1.7972 | 0.564 | -237.904 | 311.8644 |
| 2017 | Interlinked Technologies | 2.1801 | -0.928 | 0.346 | 0.0867 | 15.3211 | -4.3184 | 1.181 | 4 | 0.166362 | 0.166361 | 1.384 | 0.3468 | 61.2844 | -17.2736 |
| 2018 | Interlinked Technologies | 2.2274 | 360 | 0.3871 | 0.0411 | -42.2535 | 0 | 1.2311 | 4 | 0.207908 | 0.207908 | 1.5484 | 0.1644 | -169.014 | 0 |
| 2019 | Interlinked Technologies | 2.6711 | -6.3261 | 0.3881 | 0.3318 | 0.5646 | -4.8734 | 1.6799 | 4 | 0.518734 | 0.518734 | 1.5524 | 1.3272 | 2.2584 | -19.4936 |
| 2020 | Interlinked Technologies | 2.105 | 0.6815 | 0.1798 | 2.4138 | -15.2573 | 0 | 1.1067 | 6 | 0.101383 | 0.101383 | 1.0788 | 14.4828 | -91.5438 | 0 |
| 2011 | International Breweries | 1.7605 | -5.534 | 14.5734 | 0 | -22.5875 | 0 | 0.7825 | 6 | -0.24526 | -0.24526 | 87.4404 | 0 | -135.525 | 0 |
| 2012 | International Breweries | 3.368 | -15.7282 | 14.5734 | 0 | -22.5875 | 0 | 2.39 | 6 | 0.871293 | 0.871293 | 87.4404 | 0 | -135.525 | 0 |
| 2013 | International Breweries | 4.66 | 40.4225 | 5.6435 | 0.8578 | 2.3545 | 1.1512 | 3.7052 | 6 | 1.309737 | 1.30974 | 33.861 | 5.1468 | 14.127 | 6.9072 |
| 2014 | International Breweries | 3.6868 | 32.9155 | 3.8457 | 4.6258 | -11.4968 | 0 | 2.703 | 6 | 0.994362 | 0.994362 | 23.0742 | 27.7548 | -68.9808 | 0 |
| 2015 | International Breweries | 2.3143 | 27.1017 | 4.5506 | 6.0356 | -15.9361 | 16.0291 | 1.3425 | 6 | 0.294534 | 0.294533 | 27.3036 | 36.2136 | -95.6166 | 96.17461 |
| 2016 | International Breweries | 2.3692 | 22.8395 | 4.5206 | 5.1054 | -18.512 | 11.4956 | 1.4021 | 6 | 0.337971 | 0.337971 | 27.1236 | 30.6324 | -111.072 | 68.9736 |
| 2017 | International Breweries | 4.6584 | 175.807 | 4.2331 | 11.5555 | -64.2307 | 30.3431 | 3.6843 | 7 | 1.30408 | 1.30408 | 29.6317 | 80.8885 | -449.615 | 212.4017 |
| 2018 | International Breweries | 1.6757 | -67.7778 | 5.4429 | 5.1662 | -51.9709 | -16.7786 | 0.7316 | 6 | -0.31252 | -0.31252 | 32.6574 | 30.9972 | -311.825 | -100.672 |
| 2019 | International Breweries | 1.1161 | -2.9412 | 8.3218 | 4.1583 | -23.1601 | -0.3683 | 0.2032 | 6 | -1.59357 | -1.59356 | 49.9308 | 24.9498 | -138.961 | -2.2098 |
| 2020 | International Breweries | 0.9243 | -12.6596 | 8.3722 | 0.0853 | -50.2873 | -4.0872 | 0.0142 | 6 | -4.25451 | -4.25451 | 50.2332 | 0.5118 | -301.724 | -24.5232 |
| 2011 | Japaul Gold & Ventures Plc | 0.9872 | 5.625 | 2.7241 | 0 | -157.079 | 223.234 | 0.0337 | 6 | -3.39026 | -3.39026 | 16.3446 | 0 | -942.474 | 1339.404 |
| 2012 | Japaul Gold & Ventures Plc | 0.625 | -0.5093 | 6.2367 | 9.1046 | 2.9051 | -1.1815 | -0.357 | 6 |  |  | 37.4202 | 54.6276 | 17.4306 | -7.089 |
| 2013 | Japaul Gold & Ventures Plc | 0.5695 | 13.5 | 4.8059 | 4.1555 | -47.9125 | 0 | -0.3095 | 6 |  |  | 28.8354 | 24.933 | -287.475 | 0 |
| 2014 | Japaul Gold & Ventures Plc | 0.7325 | -1.1905 | 4.4786 | 8.1571 | 16.8323 | -2.6876 | -0.2413 | 6 |  |  | 26.8716 | 48.9426 | 100.9938 | -16.1256 |
| 2015 | Japaul Gold & Ventures Plc | 0.9714 | -0.4098 | 5.1495 | 11.3797 | 1.7454 | -0.4269 | -0.0105 | 6 |  |  | 30.897 | 68.2782 | 10.4724 | -2.5614 |
| 2016 | Japaul Gold & Ventures Plc | 0.683 | -0.1425 | 3.9761 | 7.0496 | 0.4534 | -0.0007 | -0.5132 | 6 |  |  | 23.8566 | 42.2976 | 2.7204 | -0.0042 |
| 2017 | Japaul Gold & Ventures Plc | 2.0858 | -0.2381 | 5.0698 | 16.4601 | 0.972 | -0.1537 | 1.118 | 6 | 0.111541 | 0.111541 | 30.4188 | 98.7606 | 5.832 | -0.9222 |
| 2018 | Japaul Gold & Ventures Plc | 2.499 | -0.2 | 6.4881 | 13.191 | 0.1572 | -0.0359 | 1.5332 |  | 0.427357 | 0.427357 |  |  |  |  |
| 2019 | Japaul Gold & Ventures Plc | 0.7828 | 0.0306 | 0.0824 | 5.2046 | -0.2717 | 0.0909 | -0.1481 | 6 |  |  | 0.4944 | 31.2276 | -1.6302 | 0.5454 |
| 2020 | Japaul Gold & Ventures Plc | 1.0645 | -3.2632 | 0.0363 | 0.0583 | 20.1352 | -15.1779 | 0.0678 | 6 | -2.69119 | -2.69119 | 0.2178 | 0.3498 | 120.8112 | -91.0674 |
| 2011 | John Holt | 0.9153 | -1.4652 | 12.9996 | 4.1451 | -19.4959 | -0.4115 | -0.0795 | 6 |  |  | 77.9976 | 24.8706 | -116.975 | -2.469 |
| 2012 | John Holt | 0.9478 | 3.1193 | 1.7709 | 7.5533 | -33.2283 | 0.6299 | -0.0467 | 6 |  |  | 10.6254 | 45.3198 | -199.37 | 3.7794 |
| 2013 | John Holt | 0.7839 | 3.5 | 1.2457 | 6.2286 | -14.1414 | 4.3771 | -0.2087 | 6 |  |  | 7.4742 | 37.3716 | -84.8484 | 26.2626 |
| 2014 | John Holt | 0.7018 | 0.6447 | 0.8249 | 2.4262 | 29.7424 | 0.4684 | -0.287 | 6 |  |  | 4.9494 | 14.5572 | 178.4544 | 2.8104 |
| 2015 | John Holt | 0.7424 | -1.3538 | 0.3893 | 2.0439 | -48.538 | -2.924 | -0.2517 | 6 |  |  | 2.3358 | 12.2634 | -291.228 | -17.544 |
| 2016 | John Holt | 0.7335 | 2.64 | 0.3144 | 1.2081 | -48.5294 | 16.6667 | -0.2503 | 6 |  |  | 1.8864 | 7.2486 | -291.176 | 100.0002 |
| 2017 | John Holt | 0.7598 | -0.2674 | 0.5564 | 1.1127 | 586.547 | -7.1749 | -0.2372 | 6 |  |  | 3.3384 | 6.6762 | 3519.282 | -43.0494 |

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| 2018 | John Holt | 0.7394 | 1.0476 | 0.2516 | 0.5322 | 3.125 | 3.75 | -0.255 | 6 |  |  | 1.5096 | 3.1932 | 18.75 | 22.5 |
| 2019 | John Holt | 0.7565 | 1 | 0.2446 | 0.5833 | -7.6271 | 5.0847 | -0.243 | 6 |  |  | 1.4676 | 3.4998 | -45.7626 | 30.5082 |
| 2020 | John Holt | 0.738 | 0.5862 | 0.2475 | 1.0378 | -39.8119 | -6.5831 | -0.2157 | 6 |  |  | 1.485 | 6.2268 | -238.871 | -39.4986 |
| 2011 | Julius Berger | 1.0947 | 8.587 | 5.4281 | 1.1307 | -55.5831 | 9.7622 | 0.1634 | 6 | -1.81155 | -1.81155 | 32.5686 | 6.7842 | -333.499 | 58.5732 |
| 2012 | Julius Berger | 1.0825 | 5.0732 | 6.3511 | 1.5136 | -35.0752 | 3.7362 | 0.1425 | 6 | -1.94841 | -1.94841 | 38.1066 | 9.0816 | -210.451 | 22.4172 |
| 2013 | Julius Berger | 1.1891 | 10.7574 | 3.8724 | 1.3033 | -51.584 | 3.8645 | 0.2792 | 6 | -1.27583 | -1.27583 | 23.2344 | 7.8198 | -309.504 | 23.187 |
| 2014 | Julius Berger | 1.1249 | 9.8956 | 3.8119 | 1.794 | -37.2665 | 3.8788 | 0.2165 | 6 | -1.53017 | -1.53016 | 22.8714 | 10.764 | -223.599 | 23.2728 |
| 2015 | Julius Berger | 1.0726 | 31.5789 | 3.9759 | 2.5088 | -62.4592 | 6.0239 | 0.1271 | 6 | -2.06278 | -2.06278 | 23.8554 | 15.0528 | -374.755 | 36.1434 |
| 2016 | Julius Berger | 1.058 | 13.3958 | 3.4633 | 2.2318 | 154.788 | -36.3711 | 0.0988 | 6 | -2.31466 | -2.31466 | 20.7798 | 13.3908 | 928.728 | -218.227 |
| 2017 | Julius Berger | 0.8884 | 7.7562 | 2.8959 | 2.5055 | -31.2131 | 23.1804 | 0.0249 | 6 | -3.69289 | -3.69289 | 17.3754 | 15.033 | -187.279 | 139.0824 |
| 2018 | Julius Berger | 0.886 | 3.7925 | 2.721 | 1.5822 | -40.1646 | 3.0812 | -0.0308 | 6 |  |  | 16.326 | 9.4932 | -240.988 | 18.4872 |
| 2019 | Julius Berger | 0.8631 | 3.479 | 2.3213 | 2.2318 | -37.0669 | 4.7461 | -0.0281 | 6 |  |  | 13.9278 | 13.3908 | -222.401 | 28.4766 |
| 2020 | Julius Berger | 0.842 | 3.8304 | 0 | 1.1297 | -67.9443 | 10.6555 | -0.0518 | 6 |  |  | 0 | 6.7782 | -407.666 | 63.933 |
| 2011 | Lafarge Cement Wapco Nig | 1.4085 | 15.0174 | 1.3702 | 1.9844 | 16.5218 | 2.2622 | 0.4834 | 6 | -0.72691 | -0.72691 | 8.2212 | 11.9064 | 99.1308 | 13.5732 |
| 2012 | Lafarge Cement Wapco Nig | 1.6478 | 11.9449 | 3.225 | 3.5492 | 30.8155 | 4.5378 | 0.7063 | 6 | -0.34772 | -0.34772 | 19.35 | 21.2952 | 184.893 | 27.2268 |
| 2013 | Lafarge Cement Wapco Nig | 2.439 | 12.2081 | 6.2819 | 2.3898 | 1.9924 | 0.8611 | 1.5657 | 6 | 0.448333 | 0.448333 | 37.6914 | 14.3388 | 11.9544 | 5.1666 |
| 2014 | Lafarge Cement Wapco Nig | 1.633 | 10.9079 | 3.1205 | 1.1753 | -15.869 | 7.3039 | 0.6789 | 6 | -0.38728 | -0.38728 | 18.723 | 7.0518 | -95.214 | 43.8234 |
| 2015 | Lafarge Cement Wapco Nig | 1.5501 | 13.9905 | 3.5648 | 2.3624 | -7.7766 | 7.6909 | 0.5865 | 6 | -0.53358 | -0.53358 | 21.3888 | 14.1744 | -46.6596 | 46.1454 |
| 2016 | Lafarge Cement Wapco Nig | 0.8957 | 13 | 3.1835 | 3.0854 | -174.057 | -3.825 | -0.066 | 6 |  |  | 19.101 | 18.5124 | -1044.34 | -22.95 |
| 2017 | Lafarge Cement Wapco Nig | 1.0683 | -7.0471 | 3.9074 | 7.4804 | 0.8201 | -2.2496 | 0.1556 | 6 | -1.86047 | -1.86047 | 23.4444 | 44.8824 | 4.9206 | -13.4976 |
| 2018 | Lafarge Cement Wapco Nig | 0.9277 | -11.8571 | 4.1218 | 8.5019 | -54.882 | -9.6753 | -0.0491 | 6 |  |  | 24.7308 | 51.0114 | -329.292 | -58.0518 |
| 2019 | Lafarge Cement Wapco Nig | 0.7474 | 2.1399 | 5.94 | 4.0584 | -9.8587 | 6.2666 | -0.1981 | 6 |  |  | 35.64 | 24.3504 | -59.1522 | 37.5996 |
| 2020 | Lafarge Cement Wapco Nig | 6.8708 | 11.0209 | 5.6241 | 1.9144 | 16.9072 | 4.1416 | 5.9759 | 6 | 1.787735 | 1.78773 | 33.7446 | 11.4864 | 101.4432 | 24.8496 |
| 2011 | Learn Africa (Longman) | 0.4824 | 10.1724 | 1.8836 | 0 | -42.2063 | 33.0572 | -0.2678 | 5 |  |  | 9.418 | 0 | -211.032 | 165.286 |
| 2012 | Learn Africa (Longman) | 0.3105 | 8.3478 | 2.3396 | 0 | -17.8449 | 42.8292 | -0.4593 | 6 |  |  | 14.0376 | 0 | -107.069 | 256.9752 |
| 2013 | Learn Africa (Longman) | 0.3833 | 15.1538 | 0.884 | 0 | -20.3475 | 16.4942 | -0.4327 | 6 |  |  | 5.304 | 0 | -122.085 | 98.96519 |
| 2014 | Learn Africa (Longman) | 0.2592 | 16.875 | 0.5254 | 0 | 1883.77 | 629.107 | -0.6042 | 6 |  |  | 3.1524 | 0 | 11302.62 | 3774.642 |
| 2015 | Learn Africa (Longman) | 0.231 | -0.8554 | 0.6207 | 0 | 4.1076 | -1.4658 | -0.6128 | 6 |  |  | 3.7242 | 0 | 24.6456 | -8.7948 |
| 2016 | Learn Africa (Longman) | 0.279 | 2.4839 | 0.5759 | 0 | 76.5706 | 11.1403 | -0.5147 | 6 |  |  | 3.4554 | 0 | 459.4236 | 66.8418 |
| 2017 | Learn Africa (Longman) | 0.3212 | 2.5143 | 0.632 | 0.778 | -10.0452 | 5.682 | -0.568 |  |  |  |  |  |  |  |
| 2018 | Learn Africa (Longman) |  |  |  |  |  |  |  | 6 |  |  |  |  |  |  |
| 2019 | Learn Africa (Longman) | 0.4807 | 5.381 | 0.7231 | 0.3753 | -57.371 | 31.7275 | -0.4092 | 6 |  |  | 4.3386 | 2.2518 | -344.226 | 190.365 |
| 2020 | Learn Africa (Longman) | 0.4988 | 10 | 1.6185 | 0.7372 | -61.5254 | 19.9397 | -0.4657 | 6 |  |  | 9.711 | 4.4232 | -369.152 | 119.6382 |
| 2011 | Livestock Feeds | 1.5704 | 9 | 2.0194 | 4.9133 | -35.711 | 10.2572 | 0.6124 | 5 | -0.49037 | -0.49037 | 10.097 | 24.5665 | -178.555 | 51.286 |
| 2012 | Livestock Feeds | 2.0534 | 12 | 2.0283 | 6.7371 | -34.8606 | 6.9171 | 1.0844 | 5 | 0.081027 | 0.081027 | 10.1415 | 33.6855 | -174.303 | 34.5855 |

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| 2013 | Livestock Feeds | 2.7878 | 23.8889 | 1.4509 | 5.3434 | -25.4783 | 0 | 1.8717 | 6 | 0.626847 | 0.626847 | 8.7054 | 32.0604 | -152.87 | 0 |
| 2014 | Livestock Feeds | 1.4201 | 17.5385 | 1.5231 | 3.7897 | -36.7974 | 0 | 0.4478 | 6 | -0.80341 | -0.80341 | 9.1386 | 22.7382 | -220.784 | 0 |
| 2015 | Livestock Feeds | 1.1387 | 14.7778 | 2.6872 | 11.4224 | -37.385 | 22.9002 | 0.1556 | 6 | -1.86047 | -1.86047 | 16.1232 | 68.5344 | -224.31 | 137.4012 |
| 2016 | Livestock Feeds | 0.9388 | 10.5 | 1.6129 | 6.2015 | -32.0144 | 34.585 | -0.0551 | 6 |  |  | 9.677401 | 37.209 | -192.086 | 207.51 |
| 2017 | Livestock Feeds | 1.0403 | -3.4583 | 2.5261 | 13.7461 | 0 | -6.0635 | 0.0745 | 6 | -2.59696 | -2.59696 | 15.1566 | 82.4766 | 0 | -36.381 |
| 2018 | Livestock Feeds | 0.9666 | -2.3333 | 4.5544 | 10.768 | -18.5117 | 0 | 0.0017 | 6 | -6.37713 | -6.37713 | 27.3264 | 64.608 | -111.07 | 0 |
| 2019 | Livestock Feeds | 0.9677 | 12.5 | 4.2888 | 2.5608 | -5.5731 | 0 | -0.0173 | 6 |  |  | 25.7328 | 15.3648 | -33.4386 | 0 |
| 2020 | Livestock Feeds | 1.3094 | 8.2886 | 8.4346 | 2.1638 | -7.8532 | 1.1495 | 0.3239 | 6 | -1.12732 | -1.12732 | 50.6076 | 12.9828 | -47.1192 | 6.897 |
| 2011 | May & Baker Nig | 0.6827 | 8.6522 | 2.9266 | 3.4515 | 24.7448 | 36.3978 | -0.1711 | 6 |  |  | 17.5596 | 20.709 | 148.4688 | 218.3868 |
| 2012 | May & Baker Nig | 0.7707 | 19.375 | 5.2232 | 5.8199 | 70.5741 | 299.818 | -0.1999 | 6 |  |  | 31.3392 | 34.9194 | 423.4446 | 1798.908 |
| 2013 | May & Baker Nig | 0.8882 | -22.2727 | 5.5774 | 7.7293 | 806.675 | -370 | -0.077 | 6 |  |  | 33.4644 | 46.3758 | 4840.05 | -2220 |
| 2014 | May & Baker Nig | 0.7789 | 26.3333 | 5.6328 | 7.4592 | -37.394 | 30.32 | -0.1907 | 6 |  |  | 33.7968 | 44.7552 | -224.364 | 181.92 |
| 2015 | May & Baker Nig | 0.7158 | -15.7143 | 5.9237 | 7.141 | -52.223 | 27.2941 | -0.2469 | 5 |  |  | 29.6185 | 35.705 | -261.115 | 136.4705 |
| 2016 | May & Baker Nig | 0.6476 | 23.5 | 6.0178 | 6.0247 | -111.879 | 20.3082 | -0.2425 | 6 |  |  | 36.1068 | 36.1482 | -671.274 | 121.8492 |
| 2017 | May & Baker Nig | 0.8275 | 6.8421 | 6.7683 | 8.2865 | -38.7628 | 24.2237 | -0.1012 | 6 |  |  | 40.6098 | 49.719 | -232.577 | 145.3422 |
| 2018 | May & Baker Nig | 0.8167 | 9.8 | 5.2818 | 4.193 | -58.1023 | 6.7385 | -0.1501 | 6 |  |  | 31.6908 | 25.158 | -348.614 | 40.431 |
| 2019 | May & Baker Nig | 0.6762 | 4.5952 | 0.527 | 1.255 | -20.4756 | 21.7339 | -0.2679 | 6 |  |  | 3.162 | 7.53 | -122.854 | 130.4034 |
| 2020 | May & Baker Nig | 0.6755 | 6.3818 | 0.3645 | 0.941 | -22.7314 | 11.3772 | -0.0478 | 2 |  |  | 0.729 | 1.882 | -45.4628 | 22.7544 |
| 2011 | Mcnichols Consolidated | 1.6056 | 51 | 8.0625 | 2.2704 | -12.0544 | 216.905 | 0.6192 | 2 | -0.47933 | -0.47933 | 16.125 | 4.5408 | -24.1088 | 433.81 |
| 2012 | Mcnichols Consolidated | 1.1471 | 27 | 2.0991 | 1.8989 | -23.2261 | 19.6908 | 0.1761 | 2 | -1.7367 | -1.7367 | 4.1982 | 3.7978 | -46.4522 | 39.3816 |
| 2013 | Mcnichols Consolidated | 2.1307 | 2.3678 | 0.8026 | 2.6331 | -12.7711 | 0 | 1.1432 | 2 | 0.133831 | 0.133831 | 1.6052 | 5.2662 | -25.5422 | 0 |
| 2014 | Mcnichols Consolidated | 1.5366 | 9.8667 | 4.9914 | 2.2835 | -10.8506 | 0 | 0.5753 | 4 | -0.55286 | -0.55286 | 19.9656 | 9.134 | -43.4024 | 0 |
| 2015 | Mcnichols Consolidated | 1.1441 | 7.0588 | 6.984 | 1.2895 | -7.5648 | 3.0639 | 0.2284 | 4 | -1.47666 | -1.47666 | 27.936 | 5.158 | -30.2592 | 12.2556 |
| 2016 | Mcnichols Consolidated | 1.1681 | 7.5882 | 6.3651 | 0.4613 | -21.3179 | 12.7265 | 0.1715 | 4 | -1.76317 | -1.76317 | 25.4604 | 1.8452 | -85.2716 | 50.906 |
| 2017 | Mcnichols Consolidated | 0.8751 | 8.1 | 6.4723 | 1.7085 | -7.9287 | 18.7355 | -0.1134 | 5 |  |  | 32.3615 | 8.5425 | -39.6435 | 93.67751 |
| 2018 | Mcnichols Consolidated | 0.7624 | 3.6154 | 6.2346 | 3.8242 | -7.8893 | 5.258 | -0.2175 | 6 |  |  | 37.4076 | 22.9452 | -47.3358 | 31.548 |
| 2019 | Mcnichols Consolidated | 0.7022 | 0.7419 | 6.3025 | 4.6179 | -8.7383 | 44.4214 | -0.2715 | 7 |  |  | 44.1175 | 32.3253 | -61.1681 | 310.9498 |
| 2020 | Mcnichols Consolidated | 0.7336 | 0.103 | 6.0929 | 1.4591 | -9.2683 | 31.1344 | -0.2631 | 6 |  |  | 36.5574 | 8.754601 | -55.6098 | 186.8064 |
| 2011 | Meyer Plc | 0.7606 | -6.2941 | 14.9381 | 4.4984 | 4.519 | 0 | -0.1037 | 6 |  |  | 89.6286 | 26.9904 | 27.114 | 0 |
| 2012 | Meyer Plc | 0.8587 | -19.375 | 2.8102 | 4.4766 | -6.5444 | -14.691 | -0.0769 | 6 |  |  | 16.8612 | 26.8596 | -39.2664 | -88.146 |
| 2013 | Meyer Plc | 0.8073 | 10.0714 | 2.6141 | 4.4826 | -8.0506 | 1.5804 | -0.1073 | 6 |  |  | 15.6846 | 26.8956 | -48.3036 | 9.4824 |
| 2014 | Meyer Plc | 0.785 | -7.25 | 2.8147 | 4.9355 | -2.1064 | -15.5613 | -0.1605 | 6 |  |  | 16.8882 | 29.613 | -12.6384 | -93.3678 |
| 2015 | Meyer Plc | 0.7742 | 3.7222 | 2.2118 | 3.9685 | -12.5688 | 8.8109 | -0.2104 | 4 |  |  | 8.8472 | 15.874 | -50.2752 | 35.2436 |
| 2016 | Meyer Plc | 0.8184 | -1.16 | 2.0196 | 1.4685 | 1.5586 | -3.3887 | -0.0963 | 4 |  |  | 8.0784 | 5.874 | 6.2344 | -13.5548 |
| 2017 | Meyer Plc | 0.9217 | -73 | 1.8049 | 2.7455 | 1.1461 | -1.2703 | -0.0691 | 4 |  |  | 7.2196 | 10.982 | 4.5844 | -5.0812 |

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| 2018 | Meyer Plc | 0.7246 | 59 | 1.9434 | 2.0264 | 75.0869 | 1.6676 | -0.2633 | 4 |  |  | 7.7736 | 8.1056 | 300.3476 | 6.6704 |
| 2019 | Meyer Plc | 0.4737 |  | 0.3413 | 0.4815 | 89.4928 | -50.655 | -0.1314 | 4 |  |  | 1.3652 | 1.926 | 357.9712 | -202.62 |
| 2020 | Meyer Plc | -0.508 | 0.2222 | 0.4308 | 0.3484 | -31.7615 | 0.392 | -0.6098 | 4 |  |  | 1.7232 | 1.3936 | -127.046 | 1.568 |
| 2011 | Morison Industries | 2.8545 | -53.2353 | 4.2336 | 0.9327 | -8.662 | 0 | 1.8682 | 4 | 0.624975 | 0.624975 | 16.9344 | 3.7308 | -34.648 | 0 |
| 2012 | Morison Industries | 1.147 | 347 | 3.7994 | 1.4336 | 215.045 | 0 | 0.1612 | 4 | -1.82511 | -1.82511 | 15.1976 | 5.7344 | 860.18 | 0 |
| 2013 | Morison Industries | 0.6887 | -12.7333 | 4.6943 | 1.4441 | -56.4894 | -4.4043 | -0.2323 | 4 |  |  | 18.7772 | 5.7764 | -225.958 | -17.6172 |
| 2014 | Morison Industries | 0.8697 | -3.3704 | 4.3459 | 0.43 | -6.7694 | -8.3004 | -0.1193 | 4 |  |  | 17.3836 | 1.72 | -27.0776 | -33.2016 |
| 2015 | Morison Industries | 1.0782 | -2.4366 | 5.5412 | 0.1954 | 135.327 | 0 | 0.0975 | 4 | -2.3279 | -2.3279 | 22.1648 | 0.7816 | 541.308 | 0 |
| 2016 | Morison Industries | 1.2275 | -3.0192 | 5.6033 | 2.2173 | 0 | 0 | 0.2312 | 4 | -1.46447 | -1.46447 | 22.4132 | 8.8692 | 0 | 0 |
| 2017 | Morison Industries | 1.2059 | -53 | 4.0974 | 12.7709 | 0 | 0 | 0.2178 | 4 | -1.52418 | -1.52418 | 16.3896 | 51.0836 | 0 | 0 |
| 2018 | Morison Industries | 0.6775 | -2.8947 | 4.9917 | 4.4816 | 0.7676 | 0 | -0.3149 | 4 |  |  | 19.9668 | 17.9264 | 3.0704 | 0 |
| 2019 | Morison Industries | 1.7695 | -4.5455 | 6.7734 | 0 | 0.4133 | 0 | 0.7719 | 4 | -0.2589 | -0.2589 | 27.0936 | 0 | 1.6532 | 0 |
| 2020 | Morison Industries | 2.1316 | -4.4545 | 8.2256 | 1.4297 | 0.3629 | -8.5918 | 1.1398 | 6 | 0.130853 | 0.130853 | 49.3536 | 8.5782 | 2.1774 | -51.5508 |
| 2011 | Mrs(Texaco Chevron) | 0.8291 | 24.3802 | 1.8298 | 0.7112 | -129.563 | 210.494 | -0.0551 | 6 |  |  | 10.9788 | 4.2672 | -777.378 | 1262.964 |
| 2012 | Mrs(Texaco Chevron) | 0.5805 | 29.3333 | 2.6557 | 2.443 | -84.6495 | 631.749 | -0.2342 | 6 |  |  | 15.9342 | 14.658 | -507.897 | 3790.494 |
| 2013 | Mrs(Texaco Chevron) | 0.7121 | 21.776 | 2.4699 | 3.8051 | -54.9145 | 69.3918 | -0.0883 | 6 |  |  | 14.8194 | 22.8306 | -329.487 | 416.3508 |
| 2014 | Mrs(Texaco Chevron) | 0.6856 | 18.0952 | 2.892 | 1.9878 | -41.7806 | 69.9391 | -0.1159 | 6 |  |  | 17.352 | 11.9268 | -250.684 | 419.6346 |
| 2015 | Mrs(Texaco Chevron) | 0.5699 | 12.8207 | 2.41 | 2.8107 | -35.9531 | 64.2857 | -0.1345 | 6 |  |  | 14.46 | 16.8642 | -215.719 | 385.7142 |
| 2016 | Mrs(Texaco Chevron) | 0.7285 | 7.4939 | 1.8586 | 2.0104 | -35.9124 | 30.6855 | -0.1374 | 7 |  |  | 13.0102 | 14.0728 | -251.387 | 214.7985 |
| 2017 | Mrs(Texaco Chevron) | 0.6787 | 5.1376 | 2.3603 | 19.6337 | -238.977 | -112.946 | -0.2572 | 8 |  |  | 18.8824 | 157.0696 | -1911.82 | -903.568 |
| 2018 | Mrs(Texaco Chevron) | 0.724 | -6.1928 | 2.7014 | 0.4018 | -11.3844 | -31.5654 | -0.2374 | 8 |  |  | 21.6112 | 3.2144 | -91.0752 | -252.523 |
| 2019 | Mrs(Texaco Chevron) | 0.6213 | -255 | 3.5535 | 1.3971 | -140.743 | -23.6148 | -0.3267 | 8 |  |  | 28.428 | 11.1768 | -1125.94 | -188.918 |
| 2020 | Mrs(Texaco Chevron) | 0.5331 | -185.061 | 4.07 | 2.9723 | -14.6272 | -11.0532 | -0.3451 | 4 |  |  | 16.28 | 11.8892 | -58.5088 | -44.2128 |
| 2011 | Multiverse | 0.6812 | 0.8333 | 2.9933 | 2.1675 | -2.6752 | 0 | -0.3167 | 4 |  |  | 11.9732 | 8.67 | -10.7008 | 0 |
| 2012 | Multiverse | 0.692 | 50 | 0.8525 | 2.8183 | -11.6416 | 0 | -0.298 | 4 |  |  | 3.41 | 11.2732 | -46.5664 | 0 |
| 2013 | Multiverse | 0.9237 | -7.1429 | 0.6547 | 3.3372 | -21.0292 | 0 | -0.0718 | 4 |  |  | 2.6188 | 13.3488 | -84.1168 | 0 |
| 2014 | Multiverse | 1.1105 | -3.8462 | 2.4739 | 5.1397 | -4.7597 | 0 | 0.1121 | 4 | -2.18836 | -2.18836 | 9.8956 | 20.5588 | -19.0388 | 0 |
| 2015 | Multiverse | 1.1689 | -5.5556 | 2.2665 | 7.2374 | -4.7145 | 0 | -0.0334 | 4 |  |  | 9.066 | 28.9496 | -18.858 | 0 |
| 2016 | Multiverse | 1.3314 | -3.5714 | 2.2823 | 11.7663 | 0 | 0 | 0.3323 | 4 | -1.10172 | -1.10172 | 9.1292 | 47.0652 | 0 | 0 |
| 2017 | Multiverse | 1.2119 | -5 | 2.2117 | 7.7942 | 1.3739 | 0 | 0.213 | 4 | -1.54646 | -1.54646 | 8.8468 | 31.1768 | 5.4956 | 0 |
| 2018 | Multiverse | 0.9986 | -20 | 2.077 | 4.7042 | 1.7393 | 0 | -0.0006 | 4 |  |  | 8.308 | 18.8168 | 6.9572 | 0 |
| 2019 | Multiverse | 1.0681 | -20 | 2.0198 | 2.4114 | -5.3045 | 0 | 0.0691 | 4 | -2.6722 | -2.6722 | 8.0792 | 9.6456 | -21.218 | 0 |
| 2020 | Multiverse | 11.1398 | -4 | 20.3703 | 33.9234 | -2.247 | 0 | 1.1534 | 6 | 0.142714 | 0.142714 | 122.2218 | 203.5404 | -13.482 | 0 |
| 2011 | Nascon Allied | 1.1455 | 4.8313 | 3.9237 | 0.1311 | 29.7873 | 21.415 | 0.4937 | 4 | -0.70583 | -0.70583 | 15.6948 | 0.5244 | 119.1492 | 85.66 |
| 2012 | Nascon Allied | 1.9871 | 7.6923 | 5.1277 | 0.0743 | 31.4649 | 20.5492 | 1.3675 | 4 | 0.312984 | 0.312984 | 20.5108 | 0.2972 | 125.8596 | 82.1968 |

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| 2013 | Nascon Allied | 3.767 | 14.6961 | 4.4064 | 0.0728 | -33.1533 | 35.9647 | 2.8713 | 4 | 1.054765 | 1.05476 | 17.6256 | 0.2912 | -132.613 | 143.8588 |
| 2014 | Nascon Allied | 1.7394 | 8.8857 | 5.7752 | 0.1213 | -34.6367 | 42.5645 | 0.8102 | 5 | -0.21047 | -0.21047 | 28.876 | 0.6065 | -173.184 | 212.8225 |
| 2015 | Nascon Allied | 1.5711 | 9.0506 | 5.7691 | 0.1231 | -30.2203 | 25.0701 | 0.7275 | 6 | -0.31814 | -0.31814 | 34.6146 | 0.7386 | -181.322 | 150.4206 |
| 2016 | Nascon Allied | 1.487 | 9.3407 | 4.1228 | 1.4538 | -31.3153 | 15.0786 | 0.5883 | 6 | -0.53052 | -0.53052 | 24.7368 | 8.722799 | -187.892 | 90.4716 |
| 2017 | Nascon Allied | 1.9296 | 9.1584 | 5.7352 | 0.2394 | -32.4407 | 11.1844 | 1.2442 | 7 | 0.218493 | 0.218493 | 40.1464 | 1.6758 | -227.085 | 78.29079 |
| 2018 | Nascon Allied | 2.0971 | 10.7784 | 6.5029 | 0 | -31.463 | 30.5863 | 1.1826 | 6 | 0.167715 | 0.167715 | 39.0174 | 0 | -188.778 | 183.5178 |
| 2019 | Nascon Allied | 1.5058 | 18.5 | 5.7678 | 0.5762 | -33.3626 | 60.548 | 0.6005 | 6 | -0.50999 | -0.50999 | 34.6068 | 3.4572 | -200.176 | 363.288 |
| 2020 | Nascon Allied | 1.5213 | 14.2157 | 6.184 | 0.388 | -31.1363 | 25.2361 | 0.58 | 6 | -0.54473 | -0.54473 | 37.104 | 2.328 | -186.818 | 151.4166 |
| 2011 | National Aviation Handling | 1.0067 | 7.5588 | 5.4873 | 0.2238 | 35.2303 | 23.2913 | 0.0578 | 6 | -2.85077 | -2.85077 | 32.9238 | 1.3428 | 211.3818 | 139.7478 |
| 2012 | National Aviation Handling | 1.1405 | 13.1463 | 5.7892 | 1.8705 | 19.4413 | 47.4477 | 0.2152 | 6 | -1.53619 | -1.53619 | 34.7352 | 11.223 | 116.6478 | 284.6862 |
| 2013 | National Aviation Handling | 0.9392 | 11.0714 | 6.0674 | 2.065 | -18.3618 | 21.1668 | 0.1895 | 7 | -1.66337 | -1.66337 | 42.4718 | 14.455 | -128.533 | 148.1676 |
| 2014 | National Aviation Handling | 0.9108 | 12.7179 | 5.9555 | 1.9528 | -26.1095 | 26.376 | 0.0961 | 6 | -2.34237 | -2.34237 | 35.733 | 11.7168 | -156.657 | 158.256 |
| 2015 | National Aviation Handling | 0.8565 | 11.1176 | 6.1543 | 1.6791 | -32.5052 | 26.902 | 0.0029 | 6 | -5.84305 | -5.84305 | 36.9258 | 10.0746 | -195.031 | 161.412 |
| 2016 | National Aviation Handling | 0.6715 | 8.7778 | 7.327 | 4.3159 | -36.1584 | 22.1511 | -0.0965 | 6 |  |  | 43.962 | 25.8954 | -216.95 | 132.9066 |
| 2017 | National Aviation Handling | 0.7816 | 8.2917 | 7.2617 | 1.7376 | 29.2921 | 42.9934 | -0.025 | 8 |  |  | 58.0936 | 13.9008 | 234.3368 | 343.9472 |
| 2018 | National Aviation Handling | 0.7494 | 30.4167 | 8.6637 | 1.3752 | -60.8944 | 17.4834 | -0.032 | 6 |  |  | 51.9822 | 8.2512 | -365.366 | 104.9004 |
| 2019 | National Aviation Handling | 0.7077 | 5.4545 | 6.3062 | 2.0417 | -46.4978 | 8.1727 | -0.1861 | 6 |  |  | 37.8372 | 12.2502 | -278.987 | 49.0362 |
| 2020 | National Aviation Handling | 0.7419 | 12.7778 | 6.6875 | 1.4795 | -16.3718 | 15.4377 | -0.1974 | 6 |  |  | 40.125 | 8.877001 | -98.2308 | 92.62621 |
| 2011 | Ncr Nigeria | 0.6524 | 4.3915 | 1.2199 | 0.1054 | -35.3852 | 6.2683 | -0.1383 | 6 |  |  | 7.3194 | 0.6324 | -212.311 | 37.6098 |
| 2012 | Ncr Nigeria | 0.9724 | -1.5294 | 0.714 | 0 | -7.2881 | -0.8759 | 0.2776 | 6 | -1.28157 | -1.28157 | 4.284 | 0 | -43.7286 | -5.2554 |
| 2013 | Ncr Nigeria | 1.156 | -93.5 | 14.2799 | 0 | -118.473 | 0 | 0.3018 | 6 | -1.19799 | -1.19799 | 85.6794 | 0 | -710.838 | 0 |
| 2014 | Ncr Nigeria | 0.99 | 8.7877 | 0.6611 | 0 | -26.8055 | 1.6179 | 0.168 | 6 | -1.78379 | -1.78379 | 3.9666 | 0 | -160.833 | 9.7074 |
| 2015 | Ncr Nigeria | 0.9013 | 61.5882 | 0.5342 | 0 | -91.7694 | 2.1941 | 0.1095 | 6 | -2.21183 | -2.21183 | 3.2052 | 0 | -550.616 | 13.1646 |
| 2016 | Ncr Nigeria | 0.6934 | 13.7581 | 0.4502 | 0 | -79.6628 | 2.9171 | 0.0505 | 6 | -2.98578 | -2.98578 | 2.7012 | 0 | -477.977 | 17.5026 |
| 2017 | Ncr Nigeria | 0.4438 | 4.5 | 0.6641 | 14.0969 | -75.7004 | 6.47 | 0.0264 | 6 | -3.63439 | -3.63439 | 3.9846 | 84.5814 | -454.202 | 38.82 |
| 2018 | Ncr Nigeria | 0.6034 | 25 | 0.6218 | 15.3461 | -62.9408 | 58.2302 | 0.0195 | 6 | -3.93734 | -3.93734 | 3.7308 | 92.0766 | -377.645 | 349.3812 |
| 2019 | Ncr Nigeria | 0.7133 | -0.5119 | 0.7258 | 0 | 1580.91 | 0 | 0.1215 | 6 | -2.10784 | -2.10784 | 4.3548 | 0 | 9485.46 | 0 |
| 2020 | Ncr Nigeria | 0.762 | -0.7259 | 0.9673 | 0 | 46.4547 | -19.2731 | 0.1651 | 4 | -1.8012 | -1.8012 | 3.8692 | 0 | 185.8188 | -77.0924 |
| 2011 | Neimeth Int Pharm | 0.9456 | 7.7143 | 2.1867 | 3.8449 | -8.3922 | 18.7287 | -0.045 | 4 |  |  | 8.7468 | 15.3796 | -33.5688 | 74.9148 |
| 2012 | Neimeth Int Pharm | 0.9685 | -19.6 | 3.9425 | 4.693 | 20.8027 | 5.4509 | -0.0131 | 4 |  |  | 15.77 | 18.772 | 83.2108 | 21.8036 |
| 2013 | Neimeth Int Pharm | 1.0395 | 12.6 | 2.6531 | 1.9241 | -10.0925 | 5.1445 | 0.0683 | 4 | -2.68385 | -2.68385 | 10.6124 | 7.6964 | -40.37 | 20.578 |
| 2014 | Neimeth Int Pharm | 0.8312 | 5.2 | 2.0497 | 3.0346 | 15.321 | 0.493 | -0.146 | 6 |  |  | 12.2982 | 18.2076 | 91.926 | 2.958 |
| 2015 | Neimeth Int Pharm | 1.0737 | -4.2381 | 4.3914 | 4.1875 | 6.3052 | -7.7385 | 0.1089 | 4 | -2.21733 | -2.21732 | 17.5656 | 16.75 | 25.2208 | -30.954 |
| 2016 | Neimeth Int Pharm | 0.7899 | 19.5 | 3.2842 | 3.3322 | -31.7404 | 11.1482 | 0.0007 | 6 | -7.26443 | -7.26443 | 19.7052 | 19.9932 | -190.442 | 66.8892 |
| 2017 | Neimeth Int Pharm | 1.1322 | -3.125 | 2.2716 | 3.6953 | 1.626 | -3.1505 | 0.2147 | 6 | -1.53851 | -1.53851 | 13.6296 | 22.1718 | 9.756001 | -18.903 |

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| 2018 | Neimeth Int Pharm | 1.0396 | 5.9091 | 2.2235 | 3.311 | -9.1091 | 0 | 0.0592 | 6 | -2.82683 | -2.82683 | 13.341 | 19.866 | -54.6546 | 0 |
| 2019 | Neimeth Int Pharm | 0.9942 | 5.1667 | 1.4254 | 3.9561 | -27.6876 | 4.62 | 0.0383 | 6 | -3.26231 | -3.26231 | 8.552401 | 23.7366 | -166.126 | 27.72 |
| 2020 | Neimeth Int Pharm | 0.5932 | 20.2727 | 0.5427 | 1.4884 | -28.5526 | 14.4367 | 0.4596 | 6 | -0.7774 | -0.7774 | 3.2562 | 8.9304 | -171.316 | 86.6202 |
| 2011 | Nestle Nig | 5.2327 | 21.4157 | 3.851 | 4.2955 | 9.1849 | 21.7905 | 4.2465 | 6 | 1.446095 | 1.44609 | 23.106 | 25.773 | 55.1094 | 130.743 |
| 2012 | Nestle Nig | 6.809 | 26.2467 | 4.4239 | 2.0778 | 15.6202 | 7.8641 | 5.8518 | 7 | 1.766749 | 1.76675 | 30.9673 | 14.5446 | 109.3414 | 55.0487 |
| 2013 | Nestle Nig | 9.2873 | 42.7046 | 4.3181 | 1.9839 | -14.5476 | 14.5476 | 8.4141 | 6 | 2.129909 | 2.12991 | 25.9086 | 11.9034 | -87.2856 | 87.2856 |
| 2014 | Nestle Nig | 8.1875 | 36.0695 | 5.465 | 5.0026 | -9.0417 | 9.6171 | 7.2225 | 6 | 1.977201 | 1.9772 | 32.79 | 30.0156 | -54.2502 | 57.7026 |
| 2015 | Nestle Nig | 6.2908 | 28.7145 | 4.9768 | 4.0839 | -19.0492 | 9.3141 | 5.3993 | 6 | 1.686269 | 1.68627 | 29.8608 | 24.5034 | -114.295 | 55.8846 |
| 2016 | Nestle Nig | 4.3011 | 81 | 3.5241 | 12.3031 | -63.2225 | 21.1221 | 3.6039 | 6 | 1.282017 | 1.28202 | 21.1446 | 73.8186 | -379.335 | 126.7326 |
| 2017 | Nestle Nig | 8.9926 | 36.5685 | 4.4178 | 10.292 | -27.9849 | 17.6759 | 8.0957 | 6 | 2.091333 | 2.09133 | 26.5068 | 61.752 | -167.909 | 106.0554 |
| 2018 | Nestle Nig | 7.8446 | 27.3481 | 4.2544 | 1.6058 | -28.0211 | 12.0423 | 6.9417 | 6 | 1.937547 | 1.93755 | 25.5264 | 9.6348 | -168.127 | 72.2538 |
| 2019 | Nestle Nig | 6.7536 | 25.5058 | 3.853 | 1.1724 | -35.7696 | 22.7584 | 5.7896 | 6 | 1.756063 | 1.75606 | 23.118 | 7.0344 | -214.618 | 136.5504 |
| 2020 | Nestle Nig | 5.4883 | 30.4225 | 3.1486 | 1.7981 | -35.3347 | 38.2992 | 4.7267 | 6 | 1.553227 | 1.55323 | 18.8916 | 10.7886 | -212.008 | 229.7952 |
| 2011 | Nigeria Breweries | 3.6028 | 18.7714 | 5.8333 | 0.6806 | 32.5316 | 22.2044 | 2.7004 | 6 | 0.9934 | 0.9934 | 34.9998 | 4.0836 | 195.1896 | 133.2264 |
| 2012 | Nigeria Breweries | 4.9701 | 29.2247 | 6.6398 | 3.4962 | 31.6078 | 31.6888 | 4.015 | 6 | 1.390037 | 1.39004 | 39.8388 | 20.9772 | 189.6468 | 190.1328 |
| 2013 | Nigeria Breweries | 5.5383 | 29.4561 | 8.6012 | 2.9602 | 30.7839 | 23.2061 | 4.576 | 6 | 1.520825 | 1.52083 | 51.6072 | 17.7612 | 184.7034 | 139.2366 |
| 2014 | Nigeria Breweries | 4.0724 | 29.4128 | 7.0249 | 1.546 | -30.8184 | 32.7915 | 3.0887 | 6 | 1.12775 | 1.12775 | 42.1494 | 9.276 | -184.91 | 196.749 |
| 2015 | Nigeria Breweries | 3.5291 | 28.2158 | 7.9624 | 2.1656 | -30.1914 | 34.7111 | 2.5435 | 6 | 0.933541 | 0.933541 | 47.7744 | 12.9936 | -181.148 | 208.2666 |
| 2016 | Nigeria Breweries | 3.7111 | 41.338 | 8.1008 | 3.7165 | -28.3748 | 37.9308 | 2.7442 | 6 | 1.00949 | 1.00949 | 48.6048 | 22.299 | -170.249 | 227.5848 |
| 2017 | Nigeria Breweries | 3.303 | 32.6634 | 8.9284 | 2.7897 | -29.1261 | 33.4285 | 2.3445 | 7 | 0.852072 | 0.852072 | 62.4988 | 19.5279 | -203.883 | 233.9995 |
| 2018 | Nigeria Breweries | 2.2932 | 35.1852 | 7.9476 | 2.0325 | -33.9339 | 56.0545 | 1.3313 | 7 | 0.286156 | 0.286156 | 55.6332 | 14.2275 | -237.537 | 392.3815 |
| 2019 | Nigeria Breweries | 1.7778 | 29.3532 | 8.5507 | 3.1649 | -31.0291 | 49.1356 | 0.7944 | 7 | -0.23017 | -0.23017 | 59.8549 | 22.1543 | -217.204 | 343.9492 |
| 2020 | Nigeria Breweries | 1004.99 | 59.5745 | 8.5491 | 4.0988 | -36.3509 | 89.0303 | 1004.06 | 6 | 6.911802 | 6.9118 | 51.2946 | 24.5928 | -218.105 | 534.1818 |
| 2011 | Nigerian Enamelware | 2.9504 | 26.036 | 0.7769 | 3.2765 | -28.7607 | 19.4306 | 1.9593 | 6 | 0.672587 | 0.672587 | 4.6614 | 19.659 | -172.564 | 116.5836 |
| 2012 | Nigerian Enamelware | 1.827 | 24.4317 | 0.3661 | 3.3056 | -36.2968 | 21.9185 | 0.8274 | 6 | -0.18947 | -0.18947 | 2.1966 | 19.8336 | -217.781 | 131.511 |
| 2013 | Nigerian Enamelware | 1.3854 | 31.9505 | 2.3726 | 6.1345 | -37.142 | 44.0609 | 0.3906 | 5 | -0.94007 | -0.94007 | 11.863 | 30.6725 | -185.71 | 220.3045 |
| 2014 | Nigerian Enamelware | 1.2511 | 23.3971 | 1.513 | 4.3116 | -22.8403 | 37.8817 | 0.2511 | 5 | -1.3819 | -1.3819 | 7.565 | 21.558 | -114.202 | 189.4085 |
| 2015 | Nigerian Enamelware | 1.0971 | 24.188 | 0.9246 | 2.8247 | 39.119 | 18.4379 | 0.0971 | 5 | -2.33201 | -2.33201 | 4.623 | 14.1235 | 195.595 | 92.1895 |
| 2016 | Nigerian Enamelware | 1.0765 | 13.2085 | 1.0229 | 4.365 | -24.5732 | 17.0032 | 0.0783 | 5 | -2.54721 | -2.54721 | 5.1145 | 21.825 | -122.866 | 85.01601 |
| 2017 | Nigerian Enamelware | 1.005 | 32.7183 | 0.8286 | 9.681 | -33.5908 | 34.792 | 0.0077 | 5 | -4.86654 | -4.86654 | 4.143 | 48.405 | -167.954 | 173.96 |
| 2018 | Nigerian Enamelware | 1.0448 |  | 1.055 | 8.8017 | -60.705 | -249.186 | 0.0561 | 6 | -2.88062 | -2.88062 | 6.33 | 52.8102 | -364.23 | -1495.12 |
| 2019 | Nigerian Enamelware | 1.1113 | -6.9497 | 0.0015 | 4.3271 | 1.1275 | -3.6411 | 0.1137 | 6 | -2.17419 | -2.17419 | 0.009 | 25.9626 | 6.765 | -21.8466 |
| 2020 | Nigerian Enamelware | 1.1702 | -4.7939 | 0.0013 | 3.494 | 5.0932 | -0.2869 | 0.1702 | 6 | -1.77078 | -1.77078 | 0.0078 | 20.964 | 30.5592 | -1.7214 |
| 2011 | Nigerian Northen Flour Mill | 1.3144 | 8.3906 | 3.3412 | 1.4626 | -29.85 | 37.2298 | 0.5491 | 6 | -0.59947 | -0.59948 | 20.0472 | 8.7756 | -179.1 | 223.3788 |
| 2012 | Nigerian Northen Flour Mill | 1.4483 | 612.667 | 5.173 | 1.8256 | -89.3452 | 288.378 | 0.5146 | 6 | -0.66437 | -0.66437 | 31.038 | 10.9536 | -536.071 | 1730.268 |

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| 2013 | Nigerian Northen Flour Mill | 1.3977 | 16.3099 | 4.8122 | 0.746 | -31.8521 | 34.1319 | 0.5703 | 6 | -0.56159 | -0.56159 | 28.8732 | 4.476 | -191.113 | 204.7914 |
| 2014 | Nigerian Northen Flour Mill | 1.2809 | 13.7786 | 4.7952 | 0.43 | -31.672 | 3.878 | 0.4421 | 6 | -0.81622 | -0.81622 | 28.7712 | 2.58 | -190.032 | 23.268 |
| 2015 | Nigerian Northen Flour Mill | 1.1366 | -7.6339 | 2.3223 | 0 | -7.3676 | -32.7322 | 0.3657 | 6 | -1.00594 | -1.00594 | 13.9338 | 0 | -44.2056 | -196.393 |
| 2016 | Nigerian Northen Flour Mill | 0.3096 | -5.6486 | 2.217 | 0 | -15.3734 | -6.2904 | -0.4684 | 6 |  |  | 13.302 | 0 | -92.2404 | -37.7424 |
| 2017 | Nigerian Northen Flour Mill | 0.84 | -63.3333 | 1.6396 | 0.7364 | -4108.4 | 697.778 | -0.0516 | 8 |  |  | 13.1168 | 5.8912 | -32867.2 | 5582.224 |
| 2018 | Nigerian Northen Flour Mill | 0.8521 | -14.1176 | 3.2169 | 8.1049 | -46.1175 | -9.2714 | -0.0539 |  |  |  |  |  |  |  |
| 2019 | Nigerian Northen Flour Mill | 0.8383 | -23.8889 | 3.792 | 11.4549 | -39.5265 | -19.3349 | -0.077 | 8 |  |  | 30.336 | 91.6392 | -316.212 | -154.679 |
| 2020 | Nigerian Northen Flour Mill | 0.5432 | 18.7222 | 2.3352 | 5.484 | -46.4388 | 2.2755 | -0.1846 | 6 |  |  | 14.0112 | 32.904 | -278.633 | 13.653 |
| 2011 | Oando | 0.8483 | 13.5802 | 0.8754 | 3.1474 | -81.042 | 95.4531 | -0.1057 | 6 |  |  | 5.2524 | 18.8844 | -486.252 | 572.7186 |
| 2012 | Oando | 0.8239 | 2.6965 | 0.9652 | 3.9011 | -38.5537 | 59.19 | -0.15 | 6 |  |  | 5.7912 | 23.4066 | -231.322 | 355.14 |
| 2013 | Oando | 0.9648 | -32.3333 | 2.224 | 3.6557 | -755.667 | 735.064 | 0.0052 | 6 | -5.2591 | -5.2591 | 13.344 | 21.9342 | -4534 | 4410.384 |
| 2014 | Oando | 1.0785 | -0.7963 | 2.2333 | 4.3614 | 4.6456 | -6.6117 | 0.1094 | 6 | -2.21274 | -2.21274 | 13.3998 | 26.1684 | 27.8736 | -39.6702 |
| 2015 | Oando | 1.0058 | -2.2015 | 2.9456 | 5.7075 | -4.6979 | -27.305 | 0.0213 | 8 | -3.84905 | -3.84905 | 23.5648 | 45.66 | -37.5832 | -218.44 |
| 2016 | Oando | 0.8526 | -2.186 | 1.7813 | 5.881 | -145.58 | -32.3971 | -0.1369 | 8 |  |  | 14.2504 | 47.048 | -1164.64 | -259.177 |
| 2017 | Oando | 0.8085 | 9.6613 | 1.8214 | 4.2054 | -35.1337 | 117.528 | -0.184 | 6 |  |  | 10.9284 | 25.2324 | -210.802 | 705.168 |
| 2018 | Oando | 0.7899 | 2.5381 | 1.9099 | 3.9723 | 157.396 | 260.063 | -0.1999 |  |  |  |  |  |  |  |
| 2019 | Oando |  |  |  |  |  |  |  | 4 |  |  |  |  |  |  |
| 2020 | Oando |  |  |  |  |  |  |  | 6 |  |  |  |  |  |  |
| 2011 | Okomu Oil Palm | 1.0083 | 105 | 2.5551 | 0.5414 | -15.771 | 1.0686 | 0.1309 | 6 | -2.03332 | -2.03332 | 15.3306 | 3.2484 | -94.626 | 6.4116 |
| 2012 | Okomu Oil Palm | 1.359 | 236.111 | 1.6918 | 0.6368 | -12.6043 | 1.3202 | 0.4853 | 5 | -0.72299 | -0.72299 | 8.459 | 3.184 | -63.0215 | 6.601 |
| 2013 | Okomu Oil Palm | 1.6068 | 20.0913 | 2.3512 | 0.1117 | -22.3267 | 1.245 | 0.6462 | 6 | -0.43665 | -0.43665 | 14.1072 | 0.6702 | -133.96 | 7.47 |
| 2014 | Okomu Oil Palm | 1.0792 | 15.5521 | 2.3712 | 0.4568 | -26.9992 | 30.2866 | 0.0299 | 6 | -3.5099 | -3.5099 | 14.2272 | 2.7408 | -161.995 | 181.7196 |
| 2015 | Okomu Oil Palm | 1.7906 | 13.4071 | 4.5813 | 2.1402 | -9.2284 | 24.0993 | 0.8384 | 6 | -0.17626 | -0.17626 | 27.4878 | 12.8412 | -55.3704 | 144.5958 |
| 2016 | Okomu Oil Palm | 1.7389 | 7.8 | 3.9185 | 5.4905 | -16.866 | 2.3728 | 0.8694 | 6 | -0.13995 | -0.13995 | 23.511 | 32.943 | -101.196 | 14.2368 |
| 2017 | Okomu Oil Palm | 2.1784 | 7.0584 | 4.0681 | 1.544 | -17.8839 | -10.0121 | 1.277 | 6 | 0.244514 | 0.244513 | 24.4086 | 9.264 | -107.303 | -60.0726 |
| 2018 | Okomu Oil Palm | 2.0424 | 8.5522 | 3.921 | 0.7616 | -17.7546 | 28.1043 | 1.1498 | 6 | 0.139588 | 0.139588 | 23.526 | 4.5696 | -106.528 | 168.6258 |
| 2019 | Okomu Oil Palm | 1.4857 | 10.5104 | 3.0399 | 0.4344 | -32.879 | 51.2442 | 0.5472 | 6 | -0.60294 | -0.60294 | 18.2394 | 2.6064 | -197.274 | 307.4652 |
| 2020 | Okomu Oil Palm | 1.8627 | 11.152 | 2.6097 | 0.1277 | -12.0403 | 13.9357 | 0.9458 | 6 | -0.05572 | -0.05572 | 15.6582 | 0.7662 | -72.2418 | 83.6142 |
| 2011 | Pharma-Deko | 1.2551 | 4.6053 | 0.0695 | 2.7523 | 21.6379 | 0 | 0.5514 | 6 | -0.59529 | -0.5953 | 0.417 | 16.5138 | 129.8274 | 0 |
| 2012 | Pharma-Deko | 0.7101 | 0.3714 | 3.4902 | 2.8248 | 7.8874 | 0 | -0.246 | 6 |  |  | 20.9412 | 16.9488 | 47.3244 | 0 |
| 2013 | Pharma-Deko | 0.7217 | -1.5289 | 3.5808 | 3.0773 | -5.3214 | 0 | -0.2582 | 5 |  |  | 17.904 | 15.3865 | -26.607 | 0 |
| 2014 | Pharma-Deko | 0.6191 | 2.1188 | 2.5547 | 3.0974 | -32.7387 | 23.9534 | -0.2526 | 6 |  |  | 15.3282 | 18.5844 | -196.432 | 143.7204 |
| 2015 | Pharma-Deko | 0.1241 | 0.6737 | 3.5945 | 0 | -6.0441 | 1.6005 | -0.6071 | 6 |  |  | 21.567 | 0 | -36.2646 | 9.603 |
| 2016 | Pharma-Deko | 0.3976 | -1.7624 | 2.0395 | 0 | 4.883 | -12.7651 | -0.5829 | 6 |  |  | 12.237 | 0 | 29.298 | -76.5906 |
| 2017 | Pharma-Deko | 0.4198 | 37.5 | 0.7905 | 0 | -67.9324 | 25.2384 | -0.5525 | 6 |  |  | 4.743 | 0 | -407.594 | 151.4304 |

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| 2018 | Pharma-Deko | 0.5082 | -1.2295 | 0.7693 | 0.0404 | 3.6241 | -0.6274 | -0.4756 | 6 |  |  | 4.6158 | 0.2424 | 21.7446 | -3.7644 |
| 2019 | Pharma-Deko | 0.6459 | -1.1628 | 0.6288 | 0.3391 | 0.8764 | 0 | -0.3512 | 6 |  |  | 3.7728 | 2.0346 | 5.2584 | 0 |
| 2020 | Pharma-Deko | 0.7248 | -1.0067 | 0.2754 | 0.1097 | -0.3555 | 0 | -0.2214 | 4 |  |  | 1.1016 | 0.4388 | -1.422 | 0 |
| 2011 | Portland Paint Nig | 1.2342 | 10.6458 | 2.6281 | 2.0344 | -42.9401 | 33.3987 | 0.2897 | 4 | -1.23891 | -1.23891 | 10.5124 | 8.1376 | -171.76 | 133.5948 |
| 2012 | Portland Paint Nig | 1.3864 | -7.7857 | 4.3987 | 2.9354 | -14.6609 | -15.636 | 0.4197 | 4 | -0.86822 | -0.86822 | 17.5948 | 11.7416 | -58.6436 | -62.544 |
| 2013 | Portland Paint Nig | 1.5666 | 20.3704 | 7.0423 | 4.7904 | -13.0406 | 34.4305 | 0.5984 | 4 | -0.5135 | -0.5135 | 28.1692 | 19.1616 | -52.1624 | 137.722 |
| 2014 | Portland Paint Nig | 1.0924 | 9.1892 | 6.7968 | 5.0519 | -23.497 | 15.1747 | 0.1912 | 4 | -1.65444 | -1.65444 | 27.1872 | 20.2076 | -93.988 | 60.6988 |
| 2015 | Portland Paint Nig | 1.3427 | -6.4828 | 7.831 | 6.5572 | -9.8247 | -30.4429 | 0.4277 | 4 | -0.84933 | -0.84933 | 31.324 | 26.2288 | -39.2988 | -121.772 |
| 2016 | Portland Paint Nig | 0.9919 | 90 | 7.5719 | 6.0053 | 14.5828 | 24.8067 | 0.0113 | 5 | -4.48295 | -4.48295 | 37.8595 | 30.0265 | 72.914 | 124.0335 |
| 2017 | Portland Paint Nig | 0.9714 | 27.5 | 3.445 | 1.8344 | -53.0387 | 0.8566 | 0.0669 | 4 | -2.70456 | -2.70456 | 13.78 | 7.3376 | -212.155 | 3.4264 |
| 2018 | Portland Paint Nig | 0.987 | 9.6923 | 3.1117 | 0.4842 | -32.79 | 14.5324 | 0.2054 |  | -1.5828 | -1.5828 |  |  |  |  |
| 2019 | Portland Paint Nig | 0.9589 | 20.2727 | 3.3948 | 0.1715 | -33.2568 | 40.6533 | 0.083 | 3 | -2.48892 | -2.48891 | 10.1844 | 0.5145 | -99.7704 | 121.9599 |
| 2020 | Portland Paint Nig | 1.1137 | -6.3077 | 2.6186 | 0.5056 | -6.7561 | -1.6244 | 0.3634 | 5 | -1.01225 | -1.01225 | 13.093 | 2.528 | -33.7805 | -8.122 |
| 2011 | Premier Paints | 1.255 | -1.1707 | 3.9783 | 3.2886 | -5.3324 | -2.5265 | 0.2617 | 5 | -1.34056 | -1.34056 | 19.8915 | 16.443 | -26.662 | -12.6325 |
| 2012 | Premier Paints | 1.2925 | -3.4 | 1.3781 | 3.6527 | -29.7734 | -1.8497 | 0.3115 | 5 | -1.16636 | -1.16636 | 6.8905 | 18.2635 | -148.867 | -9.2485 |
| 2013 | Premier Paints | 1.4017 | -4.5294 | 1.5964 | 4.9956 | -40.7631 | 0 | 0.4167 | 5 | -0.87539 | -0.87539 | 7.982 | 24.978 | -203.816 | 0 |
| 2014 | Premier Paints | 5.6424 | 156.143 | 5.0242 | 5.953 | -30.704 | 5.9096 | 4.6561 | 5 | 1.538178 | 1.53818 | 25.121 | 29.765 | -153.52 | 29.548 |
| 2015 | Premier Paints | 4.8379 | -45.5417 | 4.2167 | 6.0128 | -41.9807 | -3.5425 | 3.8633 | 5 | 1.351522 | 1.35152 | 21.0835 | 30.064 | -209.904 | -17.7125 |
| 2016 | Premier Paints | 5.3102 | -35.2581 | 4.4671 | 7.7603 | -4.2763 | -1.64 | 4.3363 | 6 | 1.467021 | 1.46702 | 26.8026 | 46.5618 | -25.6578 | -9.84 |
| 2017 | Premier Paints | 5.0514 | -22.4545 | 4.217 | 11.3209 | -29.4417 | -0.61 | 4.4945 | 6 | 1.502854 | 1.50285 | 25.302 | 67.9254 | -176.65 | -3.66 |
| 2018 | Premier Paints | 6.3704 | -18.5714 | 4.8117 | 13.9492 | -4.265 | 0 | 5.3778 | 6 | 1.682279 | 1.68228 | 28.8702 | 83.6952 | -25.59 | 0 |
| 2019 | Premier Paints | 6.4565 | -72.3077 | 4.655 | 0.2096 | -44.2892 | -7.6369 | 5.4653 | 6 | 1.698419 | 1.69842 | 27.93 | 1.2576 | -265.735 | -45.8214 |
| 2020 | Premier Paints | 7.0672 | -37.6 | 4.9297 | 0 | 1.5076 | -1.0239 | 6.0676 | 6 | 1.802963 | 1.80296 | 29.5782 | 0 | 9.0456 | -6.1434 |
| 2011 | Presco | 1.1603 | 4.8708 | 2.1339 | 1.3839 | -33.9774 | 2.6918 | 0.1614 | 6 | -1.82387 | -1.82387 | 12.8034 | 8.3034 | -203.864 | 16.1508 |
| 2012 | Presco | 0.9959 | 4.7887 | 2.2878 | 1.1135 | -9.9998 | 14.434 | 0.0005 | 7 | -7.6009 | -7.6009 | 16.0146 | 7.7945 | -69.9986 | 101.038 |
| 2013 | Presco | 1.6858 | 29.845 | 2.4523 | 1.1954 | -42.707 | 16.6049 | 0.6897 | 6 | -0.3715 | -0.3715 | 14.7138 | 7.1724 | -256.242 | 99.6294 |
| 2014 | Presco | 1.1281 | 9.1418 | 4.1601 | 1.0375 | -23.8282 | 2.7186 | 0.1299 | 6 | -2.04099 | -2.04099 | 24.9606 | 6.225 | -142.969 | 16.3116 |
| 2015 | Presco | 1.0349 | 14.2241 | 1.6312 | 1.2758 | -44.9363 | 9.1872 | 0.0469 | 7 | -3.05974 | -3.05974 | 11.4184 | 8.9306 | -314.554 | 64.31039 |
| 2016 | Presco | 0.8244 | 182.273 | 1.4984 | 0.8233 | -30.3941 | 2.9271 | -0.1445 | 6 |  |  | 8.9904 | 4.9398 | -182.365 | 17.5626 |
| 2017 | Presco | 1.5858 | 2.7011 | 1.115 | 0.9901 | 131.963 | 22.0826 | 0.6194 | 6 | -0.479 | -0.479 | 6.69 | 5.9406 | 791.778 | 132.4956 |
| 2018 | Presco | 1.6352 | 14.8837 | 2.1869 | 2.176 | -32.223 | 23.5304 | 0.6787 | 6 | -0.38758 | -0.38758 | 13.1214 | 13.056 | -193.338 | 141.1824 |
| 2019 | Presco | 1.2036 | 12.7005 | 2.0566 | 3.0166 | -36.651 | 23.3679 | 0.2773 | 6 | -1.28266 | -1.28266 | 12.3396 | 18.0996 | -219.906 | 140.2074 |
| 2020 | Presco | 1.5058 | 13.4886 | 2.3846 | 2.6004 | -39.4509 | 23.5806 | 0.5409 | 6 | -0.61452 | -0.61452 | 14.3076 | 15.6024 | -236.705 | 141.4836 |
| 2011 | Pz Cussons | 1.7582 | 17.0732 | 2.5404 | 0.1823 | -29.0109 | 23.7422 | 0.8135 | 6 | -0.20641 | -0.20641 | 15.2424 | 1.0938 | -174.065 | 142.4532 |
| 2012 | Pz Cussons | 2.0214 | 45.9016 | 2.8575 | 1.0406 | 41.0513 | 46.268 | 1.0906 | 6 | 0.086728 | 0.086728 | 17.145 | 6.2436 | 246.3078 | 277.608 |

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| 2013 | Pz Cussons | 2.267 | 30.0813 | 8.5765 | 0.3012 | 30.4444 | 14.8638 | 1.4218 | 6 | 0.351924 | 0.351924 | 51.459 | 1.8072 | 182.6664 | 89.1828 |
| 2014 | Pz Cussons | 1.6329 | 20.5172 | 2.7981 | 0.1988 | 26.8668 | 33.5345 | 0.7598 | 6 | -0.2747 | -0.2747 | 16.7886 | 1.1928 | 161.2008 | 201.207 |
| 2015 | Pz Cussons | 1.7961 | 25.1961 | 3.0346 | 0.6602 | 30.2896 | 40.2719 | 0.8307 | 6 | -0.18549 | -0.18549 | 18.2076 | 3.9612 | 181.7376 | 241.6314 |
| 2016 | Pz Cussons | 1.0175 | 30.8511 | 2.8955 | 0.803 | -32.3521 | 51.1306 | 0.1904 | 7 | -1.65863 | -1.65863 | 20.2685 | 5.621 | -226.465 | 357.9142 |
| 2017 | Pz Cussons | 1.3178 | 24.5238 | 2.5799 | 0.3224 | -23.3742 | 23.9784 | 0.4069 | 6 | -0.89919 | -0.89919 | 15.4794 | 1.9344 | -140.245 | 143.8704 |
| 2018 | Pz Cussons | 0.8722 | 26.3043 | 2.8857 | 0.7354 | -16.7014 | 106.392 | 0.0331 | 6 | -3.40822 | -3.40822 | 17.3142 | 4.4124 | -100.208 | 638.352 |
| 2019 | Pz Cussons | 0.6768 | 22.6 | 3.3149 | 0.3803 | -40.4951 | 8.0539 | -0.2917 | 5 |  |  | 16.5745 | 1.9015 | -202.476 | 40.2695 |
| 2020 | Pz Cussons | 0.6901 | -3.046 | 3.5643 | 0.579 | -9.3325 | -0.0055 | -0.1723 | 6 |  |  | 21.3858 | 3.474 | -55.995 | -0.033 |
| 2011 | R.T Briscoe Nig | 0.8003 | 8.1333 | 0.714 | 5.1592 | -51.7455 | 20.1181 | -0.153 | 6 |  |  | 4.284 | 30.9552 | -310.473 | 120.7086 |
| 2012 | R.T Briscoe Nig | 0.809 | -6.3333 | 1.0323 | 8.9463 | 22.8513 | -53.1275 | -0.096 | 6 |  |  | 6.1938 | 53.6778 | 137.1078 | -318.765 |
| 2013 | R.T Briscoe Nig | 0.8946 | -18.375 | 1.0618 | 9.5694 | -39.3042 | -48.3173 | -0.0887 | 6 |  |  | 6.3708 | 57.4164 | -235.825 | -289.904 |
| 2014 | R.T Briscoe Nig | 0.8499 | -0.4968 | 1.2342 | 9.6798 | 30.5598 | -5.2714 | -0.1241 | 6 |  |  | 7.4052 | 58.0788 | 183.3588 | -31.6284 |
| 2015 | R.T Briscoe Nig | 1.0105 | -0.1408 | 3.1666 | 16.8691 | -2.8907 | -1.0149 | 0.0451 | 6 | -3.09887 | -3.09887 | 18.9996 | 101.2146 | -17.3442 | -6.0894 |
| 2016 | R.T Briscoe Nig | 1.3149 | -0.2024 | 3.1906 | 23.1076 | 2.8841 | -5.4078 | 0.3971 | 6 | -0.92357 | -0.92357 | 19.1436 | 138.6456 | 17.3046 | -32.4468 |
| 2017 | R.T Briscoe Nig | 1.813 | -0.1859 | 1.3663 | 36.2661 | 0.4734 | -1.9913 | 0.8712 |  | -0.13788 | -0.13788 |  |  |  |  |
| 2018 | R.T Briscoe Nig | 2.0669 | -0.2043 | 0.7247 | 29.9054 | 0.8622 | -0.87 | 1.1187 |  | 0.112167 | 0.112167 |  |  |  |  |
| 2019 | R.T Briscoe Nig | 2.0787 | -0.1927 | 0.5547 | 16.2461 | 2.9676 | -2.0912 | 1.0915 | 6 | 0.087553 | 0.087553 | 3.3282 | 97.47659 | 17.8056 | -12.5472 |
| 2020 | R.T Briscoe Nig |  |  |  |  |  |  |  | 4 |  |  |  |  |  |  |
| 2011 | Redstar Express | 0.8815 | 4.193 | 3.7583 | 0 | -18.893 | 25.3401 | -0.0583 | 4 |  |  | 15.0332 | 0 | -75.572 | 101.3604 |
| 2012 | Redstar Express | 0.8563 | 5.7692 | 5.852 | 0.8264 | 50.6756 | 23.4766 | 0.061 | 4 | -2.79688 | -2.79688 | 23.408 | 3.3056 | 202.7024 | 93.9064 |
| 2013 | Redstar Express | 1.1251 | 8.5 | 4.9124 | 0.9895 | -44.1199 | 26.3578 | 0.2911 | 5 | -1.23409 | -1.23409 | 24.562 | 4.9475 | -220.6 | 131.789 |
| 2014 | Redstar Express | 0.9451 | 5.7941 | 5.8237 | 0.6025 | -33.1611 | 10.1542 | 0.1218 | 6 | -2.10538 | -2.10538 | 34.9422 | 3.615 | -198.967 | 60.9252 |
| 2015 | Redstar Express | 0.9395 | 6.5385 | 6.6868 | 0.4539 | -37.2189 | 5.1141 | 0.1164 | 6 | -2.15072 | -2.15072 | 40.1208 | 2.7234 | -223.313 | 30.6846 |
| 2016 | Redstar Express | 0.9325 | 7.7193 | 6.5918 | 0.2872 | -41.5447 | 9.4189 | 0.1016 | 5 | -2.28671 | -2.28671 | 32.959 | 1.436 | -207.724 | 47.0945 |
| 2017 | Redstar Express | 1.0164 | 512 | 5.4839 | 0.4764 | 34.6669 | 11.6032 | 0.1323 | 6 | -2.02268 | -2.02268 | 32.9034 | 2.8584 | 208.0014 | 69.6192 |
| 2018 | Redstar Express | 0.8795 | 7.1186 | 6.4064 | 0.5539 | -43.0782 | 10.1227 | -0.0104 |  |  |  |  |  |  |  |
| 2019 | Redstar Express | 0.8807 | 5.6329 | 2.9964 | 0.6111 | -37.2875 | 11.268 | -0.0252 | 6 |  |  | 17.9784 | 3.6666 | -223.725 | 67.608 |
| 2020 | Redstar Express | 0.4684 | 4.9 | 1.8712 | 0.8256 | -37.4748 | 4.9367 | -0.2825 | 6 |  |  | 11.2272 | 4.9536 | -224.849 | 29.6202 |
| 2011 | Scoa Nig | 1.1344 | 34.5 | 0.7008 | 2.6369 | -31.7076 | 0 | 0.1478 | 6 | -1.9119 | -1.9119 | 4.2048 | 15.8214 | -190.246 | 0 |
| 2012 | Scoa Nig | 1.0107 | 49.2727 | 1.0713 | 4.622 | -55.3236 | 84.0645 | 0.0503 | 6 | -2.98975 | -2.98975 | 6.4278 | 27.732 | -331.942 | 504.387 |
| 2013 | Scoa Nig | 0.9393 | 24.1818 | 1.2977 | 6.4899 | -23.9808 | 31.5897 | -0.0331 | 6 |  |  | 7.786201 | 38.9394 | -143.885 | 189.5382 |
| 2014 | Scoa Nig | 0.9824 | 16.6786 | 0.9207 | 5.1238 | -102.927 | 6.7613 | -0.0026 | 6 |  |  | 5.5242 | 30.7428 | -617.562 | 40.5678 |
| 2015 | Scoa Nig | 1.0609 | -2.1333 | 1.6896 | 9.5701 | 0.7726 | -1.9268 | 0.0692 | 6 | -2.67075 | -2.67075 | 10.1376 | 57.4206 | 4.6356 | -11.5608 |
| 2016 | Scoa Nig | 0.8142 | -1.502 | 1.4867 | 12.3054 | -27.7399 | -0.308 | -0.1535 | 6 |  |  | 8.9202 | 73.8324 | -166.439 | -1.848 |
| 2017 | Scoa Nig | 0.9454 | -1.051 | 1.5008 | 8.9317 | 0.6394 | -2.4397 | -0.0517 | 6 |  |  | 9.0048 | 53.5902 | 3.8364 | -14.6382 |

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| 2018 | Scoa Nig | 1.0158 | -41.8571 | 1.785 | 10.7491 | -90.9617 | -2.1637 | -0.2233 | 6 |  |  | 10.71 | 64.4946 | -545.77 | -12.9822 |
| 2019 | Scoa Nig | 0.9833 | 5.9796 | 1.5291 | 0.6808 | 357.607 | 0 | -0.0052 | 6 |  |  | 9.1746 | 4.0848 | 2145.642 | 0 |
| 2020 | Scoa Nig | 0.8867 | -4.9661 | 1.5889 | 1.3575 | 393.777 | 0 | -0.0613 | 6 |  |  | 9.5334 | 8.145 | 2362.662 | 0 |
| 2011 | Studio Press Nig | 1.0341 | 12.087 | 0.395 | 7.1112 | -94.6172 | 39.5212 | -0.0451 | 6 |  |  | 2.37 | 42.6672 | -567.703 | 237.1272 |
| 2012 | Studio Press Nig | 0.9002 |  | 0.4635 | 10.1966 | 91.1078 | 110.32 | -0.0832 | 6 |  |  | 2.781 | 61.1796 | 546.6469 | 661.92 |
| 2013 | Studio Press Nig | 0.7263 | -31.5 | 0.4414 | 7.8941 | -204.664 | -108.86 | -0.0698 | 6 |  |  | 2.6484 | 47.3646 | -1227.98 | -653.16 |
| 2014 | Studio Press Nig | 0.8889 | -3.8983 | 0.3834 | 10.9539 | 31 | -10.9207 | -0.0417 | 4 |  |  | 1.5336 | 43.8156 | 124 | -43.6828 |
| 2015 | Studio Press Nig | 0.9184 | -14.375 | 0.4116 | 11.884 | -43.3617 | -45.7272 | -0.0314 | 6 |  |  | 2.4696 | 71.304 | -260.17 | -274.363 |
| 2016 | Studio Press Nig | 0.8905 | 5.3488 | 0.5164 | 14.1828 | -45.4519 | 5.1183 | -0.058 | 4 |  |  | 2.0656 | 56.7312 | -181.808 | 20.4732 |
| 2017 | Studio Press Nig | 0.8351 | 3.8269 | 0.4956 | 15.7018 | -45.5278 | 10.2726 | -0.114 | 4 |  |  | 1.9824 | 62.8072 | -182.111 | 41.0904 |
| 2018 | Studio Press Nig | 0.8116 | 4.4222 | 0.51 | 10.8034 | -57.4327 | 7.6228 | -0.1431 | 4 |  |  | 2.04 | 43.2136 | -229.731 | 30.4912 |
| 2019 | Studio Press Nig | 0.7718 | 4.1458 | 0.9897 | 8.5727 | -29.1882 | 12.6039 | -0.2012 | 4 |  |  | 3.9588 | 34.2908 | -116.753 | 50.4156 |
| 2020 | Studio Press Nig | 0.6563 | 28.3333 | 0.8407 | 5.6461 | -55.6828 | 210.36 | -0.1949 | 4 |  |  | 3.3628 | 22.5844 | -222.731 | 841.44 |
| 2011 | Tantalizer | 0.6254 | 16.6667 | 36.1098 | 0.2443 | 21.873 | 45.1362 | -0.3153 | 4 |  |  | 144.4392 | 0.9772 | 87.492 | 180.5448 |
| 2012 | Tantalizer | 0.7215 | 5.5556 | 37.8059 | 0.5904 | 15.3082 | -27.2646 | -0.2757 | 4 |  |  | 151.2236 | 2.3616 | 61.2328 | -109.058 |
| 2013 | Tantalizer | 0.799 | -2.7778 | 10.5077 | 3.5984 | -5.6192 | -2.2197 | -0.1918 | 4 |  |  | 42.0308 | 14.3936 | -22.4768 | -8.8788 |
| 2014 | Tantalizer | 0.9961 | -2.0833 | 12.127 | 3.8923 | 1.6395 | -2.0416 | -0.0363 | 4 |  |  | 48.508 | 15.5692 | 6.558 | -8.1664 |
| 2015 | Tantalizer | 0.9683 | -2.2727 | 8.6842 | 4.1043 | 1.6001 | 0 | -0.0293 | 4 |  |  | 34.7368 | 16.4172 | 6.4004 | 0 |
| 2016 | Tantalizer | 1.1684 | -1.5625 | 5.9265 | 5.4528 | 0.8085 | 0 | 0.1749 | 4 | -1.74354 | -1.74354 | 23.706 | 21.8112 | 3.234 | 0 |
| 2017 | Tantalizer | 1.2016 | 3.5714 | 6.116 | 6.6687 | -1.6098 | 59.8017 | 0.2327 | 4 | -1.45801 | -1.458 | 24.464 | 26.6748 | -6.4392 | 239.2068 |
| 2018 | Tantalizer | 0.9728 | 6.6667 | 5.5889 | 4.6046 | -10.1725 | 11.2055 | -0.0159 |  |  |  |  |  |  |  |
| 2019 | Tantalizer | 1.0147 | 20 | 6.1057 | 2.8302 | -33.6783 | 42.9571 | -0.0225 | 4 |  |  | 24.4228 | 11.3208 | -134.713 | 171.8284 |
| 2011 | Thomas Wyatt | 1.2307 | -9.8571 | 1.3817 | 1.4121 | -22.6899 | 0 | 0.233 | 4 | -1.45672 | -1.45672 | 5.5268 | 5.6484 | -90.7596 | 0 |
| 2012 | Thomas Wyatt | 1.2404 | -10.1538 | 1.6506 | 1.304 | 4.6338 | -3.4019 | 0.242 | 4 | -1.41882 | -1.41882 | 6.6024 | 5.216 | 18.5352 | -13.6076 |
| 2013 | Thomas Wyatt | 1.3573 | -29 | 1.7524 | 0.4134 | -150.68 | 0 | 0.3611 | 4 | -1.0186 | -1.0186 | 7.0096 | 1.6536 | -602.72 | 0 |
| 2014 | Thomas Wyatt | 1.3436 | -7.3 | 2.7948 | 1.0586 | -134.268 | 0 | 0.3452 | 4 | -1.06363 | -1.06363 | 11.1792 | 4.2344 | -537.072 | 0 |
| 2015 | Thomas Wyatt | 1.0159 | -7.625 | 2.3311 | 0.1831 | 2.3957 | 0 | 0.2638 | 4 | -1.33256 | -1.33256 | 9.3244 | 0.7324 | 9.5828 | 0 |
| 2016 | Thomas Wyatt | 1.4756 | -1.7333 | 3.6151 | 0.2839 | 3.2723 | 0 | 0.4983 | 4 | -0.69655 | -0.69655 | 14.4604 | 1.1356 | 13.0892 | 0 |
| 2017 | Thomas Wyatt | 1.5382 | -2.6316 | 4.1241 | 0.3022 | 4.752 | -0.4143 | 0.6071 | 4 | -0.49906 | -0.49906 | 16.4964 | 1.2088 | 19.008 | -1.6572 |
| 2018 | Thomas Wyatt | 1.7707 | -0.5111 | 4.055 | 21.7109 | -29.4365 | 0 | 0.7791 | 4 | -0.24962 | -0.24962 | 16.22 | 86.8436 | -117.746 | 0 |
| 2019 | Thomas Wyatt | 2.0037 | -1.4615 | 4.1531 | 4.3804 | 0.6149 | 0 | 1.0102 | 4 | 0.010148 | 0.010148 | 16.6124 | 17.5216 | 2.4596 | 0 |
| 2020 | Thomas Wyatt |  |  |  |  |  |  |  | 4 |  |  |  |  |  |  |
| 2011 | Total Nigeria | 1.7525 | 16.7498 | 3.1974 | 1.4901 | -34.9129 | 23.5354 | 0.9169 | 6 | -0.08676 | -0.08676 | 19.1844 | 8.9406 | -209.477 | 141.2124 |
| 2012 | Total Nigeria | 1.3456 | 8.7624 | 3.0928 | 2.0672 | -34.1955 | 25.6252 | 0.3896 | 6 | -0.94263 | -0.94264 | 18.5568 | 12.4032 | -205.173 | 153.7512 |
| 2013 | Total Nigeria | 1.4412 | 10.8211 | 3.3007 | 2.4953 | -34.3094 | 26.1266 | 0.5601 | 6 | -0.57964 | -0.57964 | 19.8042 | 14.9718 | -205.856 | 156.7596 |

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| 2014 | Total Nigeria | 1.2092 | 10.9363 | 3.0426 | 2.7444 | -20.4125 | 59.0436 | 0.3607 | 6 | -1.01971 | -1.01971 | 18.2556 | 16.4664 | -122.475 | 354.2616 |
| 2015 | Total Nigeria | 1.2411 | 12.3331 | 3.6632 | 2.1405 | -37.6935 | 33.316 | 0.4025 | 6 | -0.91006 | -0.91006 | 21.9792 | 12.843 | -226.161 | 199.896 |
| 2016 | Total Nigeria | 1.4097 | 6.8609 | 2.39 | 0.6221 | -27.298 | 21.7249 | 0.5693 | 6 | -0.56335 | -0.56335 | 14.34 | 3.7326 | -163.788 | 130.3494 |
| 2017 | Total Nigeria | 1.349 | 9.7354 | 3.2513 | 2.8373 | -32.0127 | 57.1718 | 0.4616 | 6 | -0.77306 | -0.77306 | 19.5078 | 17.0238 | -192.076 | 343.0308 |
| 2018 | Total Nigeria | 1.2422 | 8.6567 | 3.2732 | 3.3662 | -340.85 | 8.1144 | 0.2882 | 6 | -1.2441 | -1.2441 | 19.6392 | 20.1972 | -2045.1 | 48.6864 |
| 2019 | Total Nigeria | 1.0082 | 16.5276 | 4.8101 | 5.9056 | -25.7785 | 33.7237 | 0.0698 | 5 | -2.66212 | -2.66212 | 24.0505 | 29.528 | -128.893 | 168.6185 |
| 2020 | Total Nigeria | 0.8954 | 21.3816 | 4.5517 | 2.014 | -29.0699 | 44.025 | 0.1113 | 5 | -2.19553 | -2.19553 | 22.7585 | 10.07 | -145.35 | 220.125 |
| 2011 | Tourist Company Of Nigeria | 1.5438 | -6.4478 | 6.256 | 3.255 | 22.8363 | 0 | 0.579 | 6 | -0.54645 | -0.54645 | 37.536 | 19.53 | 137.0178 | 0 |
| 2012 | Tourist Company Of Nigeria | 1.7227 | -19.6957 | 4.4692 | 3.1996 | -22.1349 | 0 | 0.7659 | 6 | -0.2667 | -0.2667 | 26.8152 | 19.1976 | -132.809 | 0 |
| 2013 | Tourist Company Of Nigeria | 1.5302 | 68 | 4.9009 | 3.6327 | -147.395 | -147.395 | 0.604 | 6 | -0.50418 | -0.50418 | 29.4054 | 21.7962 | -884.37 | -884.37 |
| 2014 | Tourist Company Of Nigeria | 1.5538 | -13 | 5.6794 | 3.8667 | 0 | 0 | 0.6255 | 6 | -0.4692 | -0.4692 | 34.0764 | 23.2002 | 0 | 0 |
| 2015 | Tourist Company Of Nigeria | 1.8015 | -2.9746 | 4.878 | 24.961 | 0 | 0 | 0.8977 | 5 | -0.10792 | -0.10792 | 24.39 | 124.805 | 0 | 0 |
| 2016 | Tourist Company Of Nigeria | 2.2741 | -1.4534 | 5.3917 | 48.3931 | 0 | 0 | 1.4271 | 5 | 0.355644 | 0.355644 | 26.9585 | 241.9655 | 0 | 0 |
| 2017 | Tourist Company Of Nigeria | 2.7243 | -2.5664 | 8.1829 | 26.2964 | 0 | -2.8099 | 1.862 | 7 | 0.621651 | 0.621651 | 57.2803 | 184.0748 | 0 | -19.6693 |
| 2018 | Tourist Company Of Nigeria | 0.8349 | -5.7377 | 1.6942 | 3.1608 | 0 | -5.6444 | -0.1416 | 6 |  |  | 10.1652 | 18.9648 | 0 | -33.8664 |
| 2019 | Tourist Company Of Nigeria | 0.8851 | -6.4815 | 0.2424 | 3.1795 | -18.9894 | 0 | -0.1 | 4 |  |  | 0.9696 | 12.718 | -75.9576 | 0 |
| 2020 | Tourist Company Of Nigeria |  |  |  |  |  |  |  | 4 |  |  |  |  |  |  |
| 2011 | Trans-Nationwide Express | 1.3982 | 14.375 | 4.3162 | 1.1487 | -16.8581 | 3.0862 | 0.418 | 4 | -0.87227 | -0.87227 | 17.2648 | 4.5948 | -67.4324 | 12.3448 |
| 2012 | Trans-Nationwide Express | 1.3986 | -16.3529 | 4.0272 | 0.8457 | -161.229 | 43.1046 | 0.4097 | 5 | -0.89233 | -0.89233 | 20.136 | 4.2285 | -806.145 | 215.523 |
| 2013 | Trans-Nationwide Express | 0.7494 | 3 | 4.2579 | 0.8623 | 6.5602 | 32.7448 | -0.2244 | 5 |  |  | 21.2895 | 4.3115 | 32.801 | 163.724 |
| 2014 | Trans-Nationwide Express | 0.7174 | 3.6176 | 5.9637 | 0.9508 | 34.9563 | 43.9749 | -0.2485 | 5 |  |  | 29.8185 | 4.754 | 174.7815 | 219.8745 |
| 2015 | Trans-Nationwide Express | 0.6721 | 4.3462 | 5.3108 | 0.8416 | -32.6462 | 17.6564 | -0.31 | 5 |  |  | 26.554 | 4.208 | -163.231 | 88.28201 |
| 2016 | Trans-Nationwide Express | 0.5706 | 10 | 5.5715 | 0.5544 | -33.3619 | 287.353 | -0.4048 | 5 |  |  | 27.8575 | 2.772 | -166.81 | 1436.765 |
| 2017 | Trans-Nationwide Express | 0.411 | 9.75 | 3.6613 | 0.2896 | -67.0989 | 194.291 | -0.3064 | 4 |  |  | 14.6452 | 1.1584 | -268.396 | 777.164 |
| 2018 | Trans-Nationwide Express | 0.5693 | -10.8333 | 5.8023 | 0 | 32.1152 | 12.2759 | -0.3707 | 4 |  |  | 23.2092 | 0 | 128.4608 | 49.1036 |
| 2019 | Trans-Nationwide Express | 0.7738 | 30.6667 | 9.4087 | 0 | -33.7538 | 0.1999 | -0.1979 | 4 |  |  | 37.6348 | 0 | -135.015 | 0.7996 |
| 2020 | Trans-Nationwide Express | 0.7333 | -0.0563 | 7.6205 | 0 | -19.5618 | -12.504 | -0.2177 | 4 |  |  | 30.482 | 0 | -78.2472 | -50.016 |
| 2011 | Transcorp Nig | 0.7515 | 0.0736 | 2.0279 | 0.4251 | -27.2626 | 26.4748 | -0.1362 | 6 |  |  | 12.1674 | 2.5506 | -163.576 | 158.8488 |
| 2012 | Transcorp Nig | 1.1726 | 0.2397 | 1.6801 | 1.1378 | -35.9775 | 53.1375 | 0.246 | 6 | -1.40242 | -1.40242 | 10.0806 | 6.8268 | -215.865 | 318.825 |
| 2013 | Transcorp Nig | 1.9172 | 36.25 | 0.9082 | 1.694 | -22.9652 | 19.1262 | 1.084 | 6 | 0.080658 | 0.080658 | 5.4492 | 10.164 | -137.791 | 114.7572 |
| 2014 | Transcorp Nig | 1.1942 | 17.1053 | 1.2288 | 4.5628 | -57.2629 | 23.612 | 0.2113 | 6 | -1.55448 | -1.55448 | 7.3728 | 27.3768 | -343.577 | 141.672 |
| 2015 | Transcorp Nig | 0.7877 | 1.5833 | 0.5434 | 6.3485 | -38.7998 | 70.6259 | -0.1412 | 6 |  |  | 3.2604 | 38.091 | -232.799 | 423.7554 |
| 2016 | Transcorp Nig | 0.7626 | -0.3799 | 1.3574 | 3.5766 | -80.9897 | -54.0214 | -0.2273 | 6 |  |  | 8.1444 | 21.4596 | -485.938 | -324.128 |
| 2017 | Transcorp Nig | 0.853 | 12.1667 | 0.4097 | 3.3869 | -13.8009 | 31.625 | -0.1274 | 6 |  |  | 2.4582 | 20.3214 | -82.8054 | 189.75 |
| 2018 | Transcorp Nig | 0.8138 | 5.7391 | 1.2219 | 3.2237 | -7.9252 | 4.2885 | -0.174 | 6 |  |  | 7.3314 | 19.3422 | -47.5512 | 25.731 |

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| 2019 | Transcorp Nig | 0.7655 | 2.475 | 0.688 | 4.7474 | -53.0863 | 11.1401 | -0.1932 | 7 |  |  | 4.816 | 33.2318 | -371.604 | 77.9807 |
| 2020 | Transcorp Nig | 0.7587 | -4.5 | 0.8235 | 4.9657 | 135.741 | 54.5733 | -0.2301 | 7 |  |  | 5.7645 | 34.7599 | 950.187 | 382.0131 |
| 2011 | Tripple Gee & Company | 1.559 | -29.4 | 7.4042 | 2.259 | 8.5572 | -241.527 | 0.5719 | 4 | -0.55879 | -0.55879 | 29.6168 | 9.036 | 34.2288 | -966.108 |
| 2012 | Tripple Gee & Company | 1.2395 | 229 | 5.9587 | 1.9649 | -30.0056 | 1229.79 | 0.2864 | 5 | -1.25037 | -1.25037 | 29.7935 | 9.8245 | -150.028 | 6148.95 |
| 2013 | Tripple Gee & Company | 1.6101 | 51.75 | 8.0908 | 2.1421 | -29.9989 | 3.7173 | -0.0329 | 5 |  |  | 40.454 | 10.7105 | -149.995 | 18.5865 |
| 2014 | Tripple Gee & Company | 1.5116 | 62 | 8.4191 | 2.3641 | -39.9413 | 0 | -0.1104 | 5 |  |  | 42.0955 | 11.8205 | -199.707 | 0 |
| 2015 | Tripple Gee & Company | 1.4579 | 21.125 | 6.8445 | 3.4718 | -24.4014 | 0 | -0.1607 | 5 |  |  | 34.2225 | 17.359 | -122.007 | 0 |
| 2016 | Tripple Gee & Company | 1.32 | 2.3214 | 7.0678 | 3.8182 | -25 | 0 | -0.2547 | 5 |  |  | 35.339 | 19.091 | -125 | 0 |
| 2017 | Tripple Gee & Company | 0.6554 | 33.6667 | 6.1455 | 1.8117 | -34.3191 | 352.678 | -0.3366 | 4 |  |  | 24.582 | 7.2468 | -137.276 | 1410.712 |
| 2018 | Tripple Gee & Company | 1.1966 | 16.2447 | 5.7793 | 0.7941 | -37.9695 | 50.7883 | -0.4294 | 4 |  |  | 23.1172 | 3.1764 | -151.878 | 203.1532 |
| 2019 | Tripple Gee & Company | 1.1735 | 11.4695 | 6.539 | 0 | -21.7607 | 31.5587 | -0.4784 |  |  |  |  |  |  |  |
| 2020 | Tripple Gee & Company | 1.1677 | 0.0871 | 6.9826 | 1.9614 | -31.9993 | 16.1002 | -0.4069 | 4 |  |  | 27.9304 | 7.8456 | -127.997 | 64.4008 |
| 2011 | Uac Of Nig | 2.8564 | 84.2703 | 2.3335 | 1.3873 | -51.2804 | 46.4403 | 1.8924 | 6 | 0.637846 | 0.637846 | 14.001 | 8.3238 | -307.682 | 278.6418 |
| 2012 | Uac Of Nig | 1.4154 | 16.3424 | 1.4392 | 2.0593 | -33.8977 | 29.014 | 0.4511 | 6 | -0.79607 | -0.79607 | 8.635201 | 12.3558 | -203.386 | 174.084 |
| 2013 | Uac Of Nig | 2.1701 | 22.6351 | 2.5012 | 2.4347 | -28.9892 | 24.5971 | 1.2424 | 6 | 0.217045 | 0.217045 | 15.0072 | 14.6082 | -173.935 | 147.5826 |
| 2014 | Uac Of Nig | 0.8688 | 10 | 2.1166 | 0.9787 | -23.9071 | 12.9909 | -0.0701 | 6 |  |  | 12.6996 | 5.8722 | -143.443 | 77.9454 |
| 2015 | Uac Of Nig | 0.6621 | 13.474 | 1.9393 | 2.3455 | -35.2083 | 36.771 | -0.2665 | 6 |  |  | 11.6358 | 14.073 | -211.25 | 220.626 |
| 2016 | Uac Of Nig | 0.6114 | 8.6205 | 1.8887 | 2.1333 | -27.1174 | 23.017 | -0.3196 | 6 |  |  | 11.3322 | 12.7998 | -162.704 | 138.102 |
| 2017 | Uac Of Nig | 0.5805 | 24.4928 | 2.0434 | 4.7355 | -59.2009 | 56.5733 | -0.3113 | 6 |  |  | 12.2604 | 28.413 | -355.205 | 339.4398 |
| 2018 | Uac Of Nig | 0.3942 | -4.7101 | 1.7263 | 3.805 | 71.8375 | -38.6267 | -0.3749 | 6 |  |  | 10.3578 | 22.83 | 431.025 | -231.76 |
| 2019 | Uac Of Nig | 0.4456 | 6.5152 | 2.2687 | 0.9212 | -28.311 | 20.7994 | -0.3324 | 6 |  |  | 13.6122 | 5.5272 | -169.866 | 124.7964 |
| 2020 | Uac Of Nig | 0.317 | 10.2113 | 2.7041 | 0.5445 | -32.4669 | 33.0098 | -0.4392 | 6 |  |  | 16.2246 | 3.267 | -194.801 | 198.0588 |
| 2011 | Unilever Nig | 4.0069 | 19.863 | 2.8437 | 1.3265 | -31.2156 | 19.4263 | 2.9827 | 5 | 1.092829 | 1.09283 | 14.2185 | 6.6325 | -156.078 | 97.1315 |
| 2012 | Unilever Nig | 5.4926 | 31.4189 | 4.4269 | 2.5645 | -31.6196 | 30.2073 | 4.4306 | 6 | 1.488535 | 1.48854 | 26.5614 | 15.387 | -189.718 | 181.2438 |
| 2013 | Unilever Nig | 5.3609 | 42.3622 | 3.9298 | 2.5885 | -30.45 | 36.3043 | 4.4337 | 6 | 1.489234 | 1.48923 | 23.5788 | 15.531 | -182.7 | 217.8258 |
| 2014 | Unilever Nig | 3.7577 | 55.9375 | 4.6714 | 4.1761 | -16.0409 | 44.8318 | 2.7869 | 6 | 1.02493 | 1.02493 | 28.0284 | 25.0566 | -96.2454 | 268.9908 |
| 2015 | Unilever Nig | 4.0013 | 135.156 | 4.2654 | 6.3192 | -32.6751 | 13.5506 | 3.0897 | 6 | 1.128074 | 1.12807 | 25.5924 | 37.9152 | -196.051 | 81.3036 |
| 2016 | Unilever Nig | 2.4865 | 43.2099 | 3.5141 | 3.7608 | -25.1931 | 3.8793 | 1.6586 | 6 | 0.505974 | 0.505974 | 21.0846 | 22.5648 | -151.159 | 23.2758 |
| 2017 | Unilever Nig | 1.3711 | 23.0337 | 3.5787 | 2.8164 | -33.5242 | 5.3373 | 0.7881 | 6 | -0.23813 | -0.23813 | 21.4722 | 16.8984 | -201.145 | 32.0238 |
| 2018 | Unilever Nig | 1.5509 | 20.1087 | 5.5536 | 0.4572 | -27.6484 | 23.7758 | 0.9843 | 7 | -0.01582 | -0.01583 | 38.8752 | 3.2004 | -193.539 | 166.4306 |
| 2019 | Unilever Nig | 1.2354 | -17.0543 | 4.3291 | 0.131 | -26.3332 | -41.3901 | 0.5774 | 6 | -0.54922 | -0.54922 | 25.9746 | 0.786 | -157.999 | -248.341 |
| 2020 | Unilever Nig | 0.7883 | -20.1449 | 5.8545 | 0.3825 | -16.3764 | 0 | 0.1937 | 6 | -1.64145 | -1.64145 | 35.127 | 2.295 | -98.2584 | 0 |
| 2011 | University Press | 0.7588 | 6.9388 | 4.7217 | 0.2148 | -35.2863 | 34.5374 | -0.1273 | 6 |  |  | 28.3302 | 1.2888 | -211.718 | 207.2244 |
| 2012 | University Press | 0.8823 | 8.434 | 4.2701 | 0.342 | -33.7936 | 43.2096 | 0.0293 | 6 | -3.53017 | -3.53017 | 25.6206 | 2.052 | -202.762 | 259.2576 |
| 2013 | University Press | 0.7548 | 6.9667 | 2.9679 | 0.4252 | -33.7142 | 40.4137 | -0.1299 | 6 |  |  | 17.8074 | 2.5512 | -202.285 | 242.4822 |

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| 2014 | University Press | 0.7958 | 7.8148 | 3.0753 | 0.3468 | -32.8028 | 35.7891 | -0.1418 | 6 |  |  | 18.4518 | 2.0808 | -196.817 | 214.7346 |
| 2015 | University Press | 1.0483 | 18.75 | 3.4137 | 0 | -31.5291 | 55.0633 | 0.1113 | 6 | -2.19553 | -2.19553 | 20.4822 | 0 | -189.175 | 330.3798 |
| 2016 | University Press | 0.6989 | 24.9412 | 3.0213 | 0 | 4.3714 | 110.033 | -0.169 | 6 |  |  | 18.1278 | 0 | 26.2284 | 660.198 |
| 2017 | University Press | 0.3893 | 8.1429 | 1.1824 | 0 | -28.2058 | 14.0772 | -0.4231 | 6 |  |  | 7.0944 | 0 | -169.235 | 84.4632 |
| 2018 | University Press | 0.4046 | 4.5417 | 2.8425 | 0 | -41.5126 | 24.2527 | -0.4759 | 6 |  |  | 17.055 | 0 | -249.076 | 145.5162 |
| 2019 | University Press | 0.2572 | 5.0653 | 3.5997 | 0 | -34.1507 | 42.0621 | -0.5903 |  |  |  |  |  |  |  |
| 2020 | University Press | 0.1933 | 4.3419 | 4.4653 | 0 | -28.5695 | 16.2723 | -0.6114 | 6 |  |  | 26.7918 | 0 | -171.417 | 97.6338 |
| 2011 | Updc Property | 0.7993 | 9.6774 | 1.1781 | 1.4084 | 30.375 | 13.9135 | -0.1999 | 4 |  |  | 4.7124 | 5.6336 | 121.5 | 55.654 |
| 2012 | Updc Property | 0.7851 | 7.3292 | 1.2737 | 2.138 | 11.1872 | 27.785 | -0.2139 | 4 |  |  | 5.0948 | 8.552 | 44.7488 | 111.14 |
| 2013 | Updc Property | 0.8818 | 8.1897 | 1.0589 | 3.0726 | -14.8917 | 25.008 | -0.1172 | 6 |  |  | 6.3534 | 18.4356 | -89.3502 | 150.048 |
| 2014 | Updc Property | 0.7076 | 4.5238 | 0.3365 | 2.8427 | 1.3713 | 8.4855 | -0.2905 | 6 |  |  | 2.019 | 17.0562 | 8.2278 | 50.913 |
| 2015 | Updc Property | 0.6497 | 24.36 | 0.5134 | 3.7112 | 581.773 | 282.951 | -0.3489 | 6 |  |  | 3.0804 | 22.2672 | 3490.638 | 1697.706 |
| 2016 | Updc Property | 0.5824 | -2.9773 | 0.5159 | 3.9852 | -13.0708 | -2.8623 | -0.4164 | 6 |  |  | 3.0954 | 23.9112 | -78.4248 | -17.1738 |
| 2017 | Updc Property | 0.5535 | -2.1462 | 0.0795 | 8.6043 | -13.1915 | -6.2005 | -0.4332 | 6 |  |  | 0.477 | 51.6258 | -79.149 | -37.203 |
| 2018 | Updc Property | 0.7073 | -0.3299 | 0.0966 | 10.3289 | 18.6993 | -1.262 | -0.2817 | 6 |  |  | 0.5796 | 61.9734 | 112.1958 | -7.572 |
| 2019 | Updc Property | 0.9711 | -0.165 | 0.1179 | 9.0435 | -2.8079 | -0.3771 | 0.0147 | 6 | -4.21991 | -4.21991 | 0.7074 | 54.261 | -16.8474 | -2.2626 |
| 2020 | Updc Property | 0.921 | -26.3333 | 0.0377 | 6.7867 | 43.7861 | 0 | 0.0532 | 6 | -2.9337 | -2.9337 | 0.2262 | 40.7202 | 262.7166 | 0 |
| 2011 | Vitafoam Nig | 1.0945 | 7.3333 | 2.768 | 3.8451 | 36.9996 | 32.6689 | 0.1439 | 6 | -1.93864 | -1.93864 | 16.608 | 23.0706 | 221.9976 | 196.0134 |
| 2012 | Vitafoam Nig | 0.9562 | 5.3824 | 3.2103 | 5.2015 | 38.2582 | 30.552 | -0.0083 | 6 |  |  | 19.2618 | 31.209 | 229.5492 | 183.312 |
| 2013 | Vitafoam Nig | 1.0637 | 9.8 | 4.8096 | 6.6323 | -34.8487 | 45.8188 | 0.0907 | 6 | -2.4002 | -2.4002 | 28.8576 | 39.7938 | -209.092 | 274.9128 |
| 2014 | Vitafoam Nig | 0.9598 | 6.3968 | 3.3079 | 6.7176 | -38.6246 | 33.4934 | 0.0227 | 5 | -3.78539 | -3.78539 | 16.5395 | 33.588 | -193.123 | 167.467 |
| 2015 | Vitafoam Nig | 1.0165 | 18.6552 | 3.2718 | 7.0049 | -53.3728 | 21.9048 | 0.0471 | 6 | -3.05548 | -3.05548 | 19.6308 | 42.0294 | -320.237 | 131.4288 |
| 2016 | Vitafoam Nig | 0.8926 | -6.1538 | 2.5857 | 6.7068 | -152.342 | 336.931 | -0.0862 | 6 |  |  | 15.5142 | 40.2408 | -914.052 | 2021.586 |
| 2017 | Vitafoam Nig | 0.943 | -20 | 1.6133 | 10.2666 | -804.186 | 762.488 | -0.0184 | 6 |  |  | 9.6798 | 61.5996 | -4825.12 | 4574.928 |
| 2018 | Vitafoam Nig | 0.9836 | 7.7193 | 1.2631 | 8.5896 | -24.1769 | 27.7859 | 0.0438 | 6 | -3.12812 | -3.12812 | 7.5786 | 51.5376 | -145.061 | 166.7154 |
| 2019 | Vitafoam Nig | 0.9099 | 2.4176 | 1.4353 | 7.5949 | -29.496 | 9.4151 | -0.0337 | 6 |  |  | 8.6118 | 45.5694 | -176.976 | 56.4906 |
| 2020 | Vitafoam Nig | 0.7132 | 2.5574 | 2.0199 | 4.2992 | -30.6502 | 17.3586 | 0.0331 | 6 | -3.40822 | -3.40822 | 12.1194 | 25.7952 | -183.901 | 104.1516 |