ISSN No:-2456-2165

Enhancing Firm Value Through Ownership Concentration: Insights from Dividend Policy in Nigerian Consumer Goods Sector

Akpadaka, Ovbe Simon[1]
ORCID: https://orcid.org/0009-0009-6699-307X
Anan University Kwall, Plateau State

Abstract:- In the evolving landscape of contemporary corporate finance, the intersections between dividend policy, ownership concentration, and firm value present intricate interplays demanding nuanced exploration. Adopting a positivist stance, this paper examines how ownership concentration significantly modifies the relationship between dividend policy and company value. The primary objective of this study revolves around examining the moderating effect of ownership concentration on the dividend policy-firm value dynamic. To this end, we embarked on an analysis of publicly traded consumer goods companies over a decade, evaluating dividend practices, ownership nuances, and their subsequent impacts on firms' value. The ex-post facto research design capitalizes on a balanced panel data approach, encompassing data from 14 pivotal firms spanning the years 2013–2022. Multiple regression served as our analytical beacon. The revelations were insightful: ownership concentration and dividend payout ratio both exhibited a significant and positive influence on the valuation of listed consumer goods firms in Nigeria, suggesting an enhanced perceived value for these firms. The relationship between dividend payment ratio and firm value was underscored by a favorable and significant moderation effect of ownership concentration. For business leaders, investors, regulators, and other key stakeholders, these findings stand as instrumental. Firms, armed with this knowledge, can strategically sculpt their dividend policies, aligning with shareholder interests, thereby optimizing firm value. Investors, on the other hand, can tap into these observed correlations for more astute decision-making. This paper not only bridges existing knowledge gaps but also offers actionable recommendations for firms aiming to craft optimized dividend policies, considering the multifaceted dynamics of ownership structures, and thereby enhancing their value proposition in the marketplace.

Keywords:- *Dividend Policy, Ownership Structure, Firm Value, Nigerian Exchange Group.*

I. INTRODUCTION

The dividend policy, pivotal in academic and corporate spheres, concerns the distribution of earnings to shareholders, guiding investment decisions, corporate governance, and shareholder prosperity. In shaping this policy, considerations revolve around capital allocation, investor anticipations, and wealth optimization for shareholders. Within the vibrant setting of Nigeria's consumer goods sector, a major segment of the Nigeria Exchange Group (NGX) featuring giants like Nestle Nigeria Plc and Unilever Nigeria Plc, this interplay assumes heightened significance.

The dynamic Nigerian consumer goods sector witnesses the acknowledged influence of dividend policies on firm value. However, ambiguities persist, particularly concerning the moderating role of varied ownership structures, such as institutional, dispersed, or concentrated configurations. Amidst Nigeria's distinct economic contours, a notable gap emerges: the absence of exhaustive studies that explore the triadic nexus of dividend policy, firm value, and ownership structure. Drawing from foundational theories like Modigliani and Miller's (1961) perspective on dividend irrelevance, Jensen and Meckling's (1976) insights on firm governance, and empirical evidence from scholars like La Porta et al. (2000), there is an evident call to understand how ownership nuances can shape a firm's valuation via dividend policies. A noteworthy study by Naz et al. (2023) navigated similar terrains within Pakistan's manufacturing realm. Yet, their findings, while seminal, are tied to their regional and sectoral focus, leaving Nigeria's consumer goods sector largely uncharted.

This study aims to bridge this academic gap, raising pertinent questions: How does the dividend policy within Nigeria's consumer goods domain influence firm value? What interplay does ownership structure have in this dynamic? And how do specific elements like ownership concentration mold this relationship? By harnessing a quantitative panel data approach, underscored by the principles of agency theory and signalling theory, we endeavor to untangle the intricate ties binding dividend policy, ownership dynamics, and corporate value.

With the application of econometric tools, our exploration spans a critical decade of Nigeria's economic evolution, ensuring businesses can grasp and navigate the entwined threads of dividend strategies and ownership configurations. By expanding the narrative on corporate finance, we aspire to enrich understanding of firm valuation within the consumer products sector, shedding light on the implications of dividend decisions amidst multifaceted ownership landscapes. Through this analytical odyssey, we

anticipate offering both theoretical insights and pragmatic frameworks for future endeavors in corporate finance.

The interplay between dividend policy, firm value, and ownership structure in the consumer goods sector has real-world implications for diverse stakeholders. Corporate entities in the consumer goods sector can refine their strategic dividend decisions, optimizing them in alignment with their ownership structures to drive shareholder value. This study sheds light on the deeper underpinnings of firm valuation, equipping investors, and shareholders to make more informed and holistic investment decisions in Nigeria's consumer goods sector. Policy makers and regulatory authorities can refine corporate governance guidelines and financial regulations by understanding the relationship between dividend policy and ownership structure. The academic community can utilize these findings as a launchpad for deeper exploration, potentially across different sectors or even geographically diverse regions with similar complexities. Financial analysts and consultancy firms can weave the insights from this research into their advisory frameworks, ensuring a more rounded and comprehensive counsel to their clients.

➢ *The Objectives of this Study are as follows:*

- To investigate the impact of dividend payout ratio on the value of Consumer Goods firms listed in Nigeria.
- To ascertain the influence of ownership concentration on the value of Consumer Goods firms listed in Nigeria.
- To evaluate the moderating effect of ownership concentration on the relationship between dividend payout ratio and the value of Consumer Goods firms listed in Nigeria.

- Hypothesis 1: The dividend payout ratio does not have a statistically significant impact on the value of consumer goods firms listed in Nigeria.
- Hypothesis 2: Ownership concentration does not have a statistically significant impact on the value of consumer goods firms listed in Nigeria.
- Hypothesis 3: Ownership concentration does not have a statistically significant moderating effect on the relationship between the dividend payout ratio and the value of consumer goods firms listed in Nigeria.

II. LITERATURE REVIEW

➢ *Conceptual Review*

The conceptual review section gives an overview of the key concepts and theoretical foundations that underpin the study. This includes discussions on dividend policy, firm value, ownership structure, and the interplay between these constructs. By delving into the existing literature, this section sets the stage for subsequent empirical and theoretical reviews.

- *Dividend Policy:*

The concept of dividend policy pertains to the systematic decision-making process employed by a firm to determine the distribution of its earnings among its shareholders. Numerous theoretical frameworks have been put out to elucidate the factors influencing and consequences stemming from the choices made regarding dividend distributions. The theory known as "Bird-in-the-Hand" suggests that investors have a preference for receiving quick dividends rather than waiting for uncertain capital gains. On the other hand, the "Tax Preference" theory emphasises the influence of tax considerations on investors' preferences for dividends. Conversely, the "Clientele Effect" posits that firms with diverse payout policies tend to attract investors of different types.

This study utilises proxies to evaluate dividend policy, including the Dividend Payout Ratio, which reveals the percentage of earnings distributed as dividends, and the Dividend Yield, which represents the ratio of annual payments per share to the market price per share.

- *Firm Value:*

The concept of firm value encompasses the comprehensive evaluation of a company's worth, which is manifested by its market capitalization or financial performance. The phenomenon under consideration is subject to a multitude of influences, encompassing dividend policy, earnings growth, risk, and investor views. Academics have extensively examined the correlation between dividend policy and firm value from multiple perspectives, emphasising the significance of both signalling effects and financial factors. The primary inquiry persists: What is the impact of dividend policy on the market valuation of a firm?

In this particular context, indicators used to analyse the value of a firm include Market Capitalization, which represents the total market value of a company's outstanding shares, and Tobin's Q, a metric that evaluates the ratio of the market value of a firm's assets to their replacement cost.

- *Ownership Structure:*

The ownership structure refers to the allocation of ownership among different stakeholders, encompassing private investors, institutional investors, and firm insiders. The aforementioned factor assumes a critical role in influencing the dynamics of corporate governance, the procedures involved in decision-making, and the relationships between shareholders. The categorization of ownership into concentrated, distributed, and institutional classifications offers valuable insights regarding the level of control, knowledge asymmetry, and alignment of interests. The complex aspect mentioned above is exemplified by proxies such as the Ownership Concentration Index, which reveals the proportion of voting rights held by influential shareholders, and the Herfindahl-Hirschman Index (HHI), a measure of market concentration that takes into account the distribution of ownership.

The interplay between dividend policy, firm value, and ownership structure is crucial for the subsequent empirical and theoretical analyses, facilitating a comprehensive comprehension of their complex dynamics within the consumer goods sector of the Nigerian Exchange.

➢ *Empirical Review*

- *Ownership and Firm Value:*

In their study, McConnell and Servaes (1990) employed cross-sectional regression analysis to investigate the link between institutional ownership and firm value, as measured by Tobin's Q, within the context of U.S. enterprises. Their findings revealed the presence of a non-linear association between these two variables. Villalonga and Amit (2006) employed panel data analysis to examine U.S. enterprises and observed a positive association between family ownership and firm value. According to a study conducted by Short and Keasey (1999), it has been found that there is a positive correlation between high levels of insider ownership and business value in the United Kingdom. This study employed regression models to examine the contextual impact of insider ownership, revealing its significant influence. Firth et al. (2007) conducted a study utilising multiple regression analysis to examine the relationship between firm value and ownership structures in China. The findings of their analysis revealed a negative association between both state ownership and legal person ownership and firm value.

Sari and Patrisia (2020) examined Indonesian enterprises during the period of 2012 to 2017, it was determined that institutional ownership exerts a considerable negative impact on a firm's value. In contrast, a recent study conducted by Din et al. (2021) discovered a favourable correlation between insider ownership and firm value within Pakistan's manufacturing sector. The findings of this study are consistent with the principles of agency theory, which posit that a higher proportion of insider ownership can have a positive impact on a firm's performance. In a recent study conducted in India by Debnath et al. (2022), it was shown that ownership concentration within the fast-moving consumer goods sector has a beneficial impact on both accounting and market-based performance measures.

The study conducted by Scholtz and Engelbrecht (2015) revealed that in the South African market, there was a positive association between high institutional ownership and business value. Conversely, state ownership was found to have a negative impact on firm value. The researchers employed regression models and included control variables in their analysis. In a study conducted by Musa and Sanyaolu (2018), an examination was carried out on the Kenyan banking industry. The researchers utilised correlational analysis to investigate the relationship between ownership structure and business value. The findings of their study indicated that no significant relationship was observed between these two variables. Tnushi et al. (2023) Waexamined the Deposit Money Banks (DMB) sector in Nigeria. Their findings revealed that several factors, such as institutional shareholdings, ownership concentration, and foreign shareholdings, exert a positive and statistically significant influence on dividend policy. Conversely, the study also determined that managerial shareholdings exhibit a negative impact on dividend policy within this sector. According to a study conducted by Oyedokun et al. (2020) in the consumer products industry, it was shown that there is a considerable negative effect of management ownership on company value. This implies that the interests of managers, as reflected in their ownership holdings, may not be aligned with the interests of shareholders when it comes to enhancing firm value. Conversely, the aforementioned study revealed that business value is positively impacted by institutional ownership, foreign ownership, and ownership concentration. In a similar vein, a recent investigation conducted by Falade et al. (2021) within the consumer goods industry provided further support for the notion that managerial ownership has a noteworthy and beneficial influence on company value. However, it should be noted that the impact of dividend distribution policy in this context is more indirect in nature. The results of this study diverge with previous research conducted in the petroleum industry, where it was discovered that management ownership had an adverse effect on business value (Thompson et al., 2016).

The existing body of empirical research on the correlation between ownership structure and firm value is extensive and encompasses a wide range of geographical and sector settings, displaying considerable heterogeneity. The aforementioned statement provides support for Baron and Kenny's (1986) Moderation Theory, which posits that different factors, such as ownership structure, can function as moderators in the association between financial policies, such as dividends, and the value of a corporation. Within the consumer products sector of the NGX, it is apparent that the ownership structure has a significant impact on the firm's value. Consequently, it is necessary to do additional sector-specific research to enhance our comprehension of this correlation.

- *Dividend Policy and Firm Value:*

Extensive empirical research consistently highlights a significant relationship between dividend policy and firm value. This correlation has been identified in diverse industries across countries, including Nigeria (Osakwe et al., 2019), Indonesia (Purbawangsa & Rahyuda, 2022; Rizqia & Sumiati, 2013), and Russia (Eryomin et al., 2021). Interestingly, while Miller and Modigliani's 1961 seminal work asserted that dividend policy, in perfect markets, doesn't influence stock prices, later studies have often presented varying findings. Especially when considering real-world variables like taxes and transaction costs, a notable positive correlation has been observed (Baker & Wurgler, 2004).

In some contexts, a negative link between dividend policy and firm value has been recorded. For instance, Hansda et al. (2020) found that dividend policy negatively affected firm value in India, especially during financial crises. Similarly, a European study on fast-growing tech firms detected a negative association, possibly due to signaling effects of anticipated future growth (DeAngelo et al., 2006). Despite these variations, research in African and Asian markets, such as those by Sanyaolu et al. (2019) and Idewele and Murad (2019), typically confirms a positive relationship. It's vital to recognize, however, that results from developed markets can be more varied, influenced by factors like market maturity and diverse ownership

structures (Fama & French, 2001). Adding another dimension to the discourse, Chijuka and Hussein (2023) delved into how specific internal determinants affected dividend policies in Nigeria's consumer goods sector between 2017 and 2021. Their exploration revealed that firms with robust profitability and sufficient collateral are more likely to distribute larger dividends, reinforcing the agency theory.

The interplay between dividend policy and firm value is undoubtedly intricate, influenced by myriad factors such as ownership structure, geographical location, industry type, and the stage of market evolution. A comprehensive grasp of these underlying elements is crucial to understanding the global nuances of dividend policy's impact on firm value.

- *Ownership Structure as a Moderator:*

The primary emphasis in the United States has been on institutional ownership. The seminal work of Jensen and Meckling (1976) elucidated how the presence of institutional ownership can diminish agency conflicts within a corporation, which could, in turn, affect the firm's dividend policy and subsequently its overall value. Rozeff (1982) substantiated this perspective by identifying a positive link between institutional ownership, dividend policy, and firm value.

In Europe, research by Chrisman et al. (2003) shed light on the unique dynamics of family ownership and its influence on dividend policy, potentially augmenting the firm's value. Sraer and Thesmar (2007), however, postulated the possibility of family ownership deterring dividend distribution due to the family's intent to maintain control, marking distinct implications on firm value. Wang et al. (2011), In China where state ownership dominates, explored its influence on the relationship between dividend policy and firm value. Their findings suggested that state ownership generally offers positive moderation on this relationship, yet this effect can vary depending on the extent of political intervention. Venturing into African contexts, characterized by a mix of individual and institutional ownership, Nwamaka (2017) unveiled that in Nigeria, ownership structure, especially its concentration, profoundly impacts the relationship between dividend policy and business value.

Adding a more contemporary layer to the dialogue, Mubaraq et al. (2021) in their study on Indonesian firms highlighted the role of corporate governance as a moderating variable, emphasizing its potential to reshape the relationship between ownership structure, dividend policy, and firm value. This perspective was further expanded by Ahmed et al. (2023), who examined the dynamics between dividend policy and share prices in Nigerian banks from 2012 to 2021, drawing attention to the significant moderating role of inflation.

While these studies provide invaluable insights into the diverse intricacies of dividend policy in various contexts, Hassan (2023) brought a fresh perspective, focusing on the Saudi Stock Exchange. His research was underpinned by the signaling hypothesis, emphasizing the market's emerging nature. Hassan postulated that in such a market, dividend-related information becomes pivotal, guiding both existing and potential investors in their investment decisions. Furthermore, he asserted that dividends play a pivotal role for firms in attracting investments.

Yet, a striking observation emerges when reviewing the literature: there's a conspicuous gap. There's been limited exploration into the moderating role of ownership structure in the relationship between dividend policy and firm value. This realization underscores the potential for more granular research in this realm, paving the way for a richer, more nuanced understanding. In conclusion, while an array of studies has unveiled various facets of ownership structure and its relationship with dividend policy, the quest for a universally applicable conclusion, especially regarding the moderating influence of ownership structure, remains ongoing.

➢ *Theoretical Review*

The seminal work of Modigliani and Miller (1958) lays the foundation for the field of corporate finance by asserting that, under perfect market conditions, the value of a corporation remains unaffected by its capital structure and dividend policy. The aforementioned theorem serves as a benchmark for examining the extent to which dividend policies influence the value of a corporation, particularly when considering the influence of different ownership structures (Modigliani & Miller, 1958). Nevertheless, the practicality of this concept has faced extensive scrutiny due to its reliance on certain assumptions, including the absence of taxes and transaction costs. As a result, alternative theories have emerged to address these limitations.

The concept of agency theory, first proposed by Jensen and Meckling in 1976, has gained significant importance in understanding the inherent conflicts that may arise between shareholders and management. According to Jensen and Meckling (1976), this theory suggests that some ownership structures have the potential to alleviate agency costs that arise from the misalignment of goals between owners and managers. The relevance of this study lies in its ability to provide a theoretical framework for analysing the impact of ownership structure as a moderating factor in the relationship between dividend policy and firm value.

The comprehension of the subject matter is further refined by the inclusion of Signalling theory (Spence, 1973) and the Pecking Order Theory (Myers & Majluf, 1984). According to signalling theory, firms utilise dividend policies as a means to convey information about their financial well-being to the market, consequently influencing the overall worth of the organisation. In contrast, the Pecking Order Theory posits that organisations exhibit a hierarchical inclination towards various financing alternatives, wherein internal finance is typically favoured over external sources (Myers & Majluf, 1984; Spence, 1973).

ISSN No:-2456-2165

Additional theories that hold significance for this paper include the Dividend Irrelevance Theory proposed by Black and Scholes in 1974, the Free Cash Flow Theory introduced by Jensen in 1986, the Tax Preference Theory developed by Litzenberger and Ramaswamy in 1982, the Information Asymmetry Theory formulated by Myers and Majluf in 1984, and the Corporate Control Theory presented by Shleifer and Vishny in 1986. The aforementioned hypotheses, each possessing distinct views, contribute to a more comprehensive analysis of the potential impact of ownership structure on the correlation between dividend policy and business value. The Dividend Irrelevance Theory presents a contrasting perspective by raising doubts about the importance of dividend policy, while the Free Cash Flow Theory highlights that dividends have the potential to decrease free cash and thereby mitigate agency issues (Black & Scholes, 1974; Jensen, 1986). Theoretical frameworks such as tax preference theory and information asymmetry theory offer valuable perspectives on the impact of tax regulations and insider knowledge on dividend policy and their subsequent implications for firm valuation (Litzenberger & Ramaswamy, 1982; Myers & Majluf, 1984). The idea of corporate control emphasises the significance of ownership structure in facilitating or limiting managerial activities, which subsequently impacts dividend policy and the overall value of the corporation (Shleifer & Vishny, 1986).

III. METHODOLOGY

The use of correlational design was based on its suitability for predicting causal relationships. The research methodology employed in this study is a quantitative technique, which is consistent with the positivist paradigm. The population under investigation comprises the eighteen consumer products enterprises that are officially listed on the Nigerian Exchange Group (NXG). The study made use of a secondary data source, specifically the published annual financial statements of the firms, which encompassed a period of ten years from 2013 to 2022. Out of the total of eighteen consumer products firms listed, fourteen were included in the analysis due to the availability of data. This time frame has significance for examination due to the persistent demand for operational efficiencies and dividend strategies that will enhance the overall worth of the organisation. The software utilised for data analysis was Stata version 17. The estimating technique employed the use of Robust Ordinary Least Square (OLS) methodology.

➢ *Parsimonious Model*

$$\textbf{TOBIN'S } Q_{it} = \beta_{0it} + \beta_1 DPAY_{it} + \beta_2 DPAY{*}OWNC_{it} + \beta_3 OWNC_{it} + \beta_4 FS_{it} + \mu_{it}$$

Where:

TOBIN'S Q = Firm value, DPAY = Dividend payout ratio, *DPAY*OWNC* = this is an interaction term. It captures the combined effect of dividend policy and ownership structure, OWNC = Ownership concentration, FS = Firm size, $\beta_1 - \beta_4$ = coefficients, β_o = intercept, μ = error term, it = firm and period.

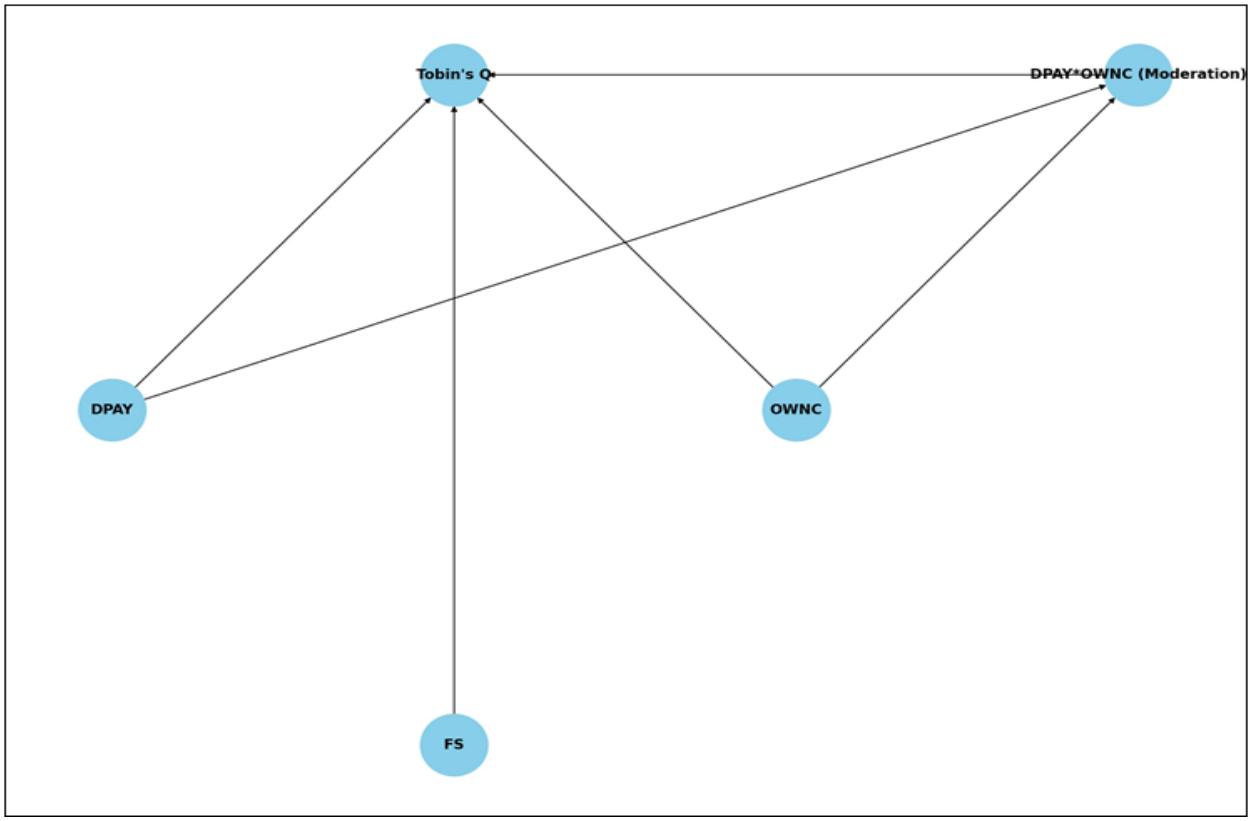


Fig 1 Model Graphic

➢ *Measurement of Variable and its Definition*

Table 1 Explanatory Variables

Variable	Nature of Variable	Proxy	Measurement
Firm Value	Dependent	Tobin's Q	The aggregate market value of all outstanding stocks, in addition to The ratio of the aggregate market value of outstanding debt to the total replacement value of productive capacity, Zik-Rullahi and Farouk (2021).
Ownership Structure	Moderator	Ownership Concentration	Ownership concentration is measured as the number of shares held by those who has up to 5% shares or more divided by total shares in issues (Chalaki et al., 2012)
Dividend Policy	Independent	Dividend Payout Ratio	Dividend declared / No of Ordinary shares outstanding
Firm Size	Control Variable	Total Asset	Natural Logarithm of total assets

IV. RESULTS AND DISCUSSION

This section explained the introductory examination of data through descriptive and correlation analysis. Robustness tests ran were presented and discussed. Following this was the interpretation, evaluation and analysis of the regression outputs.

➢ *Descriptive Statistics*

The descriptive values are presented under Table 2 which shows the smallest, largest, average, standard deviation and normality test results.

Table 2 Descriptive Analysis

Variables	Min	Max	Mean	Std. Dev.	Sktest
Tobin's Q	**0.019446**	**4.9967**	**1.49451**	**1.076801**	**0.0000**
DPAY	**13.09**	**85.39**	**55.9170**	**17.95591**	**0.0218**
OWNC	**0.08**	**0.78**	**0.34257**	**0.152619**	**0.0006**
FS	**16.3004**	**20.2848**	**18.5757**	**1.044643**	**0.0003**

Source: STATA 17 Output

Table 2 showcased the smallest value for Tobin's Q which is 0.019446 which implies that the value of listed consumer goods was quite low as some point. However, when comparison is made with the largest value of Tobin's Q, it showed that value of the firm was high and above one. The average value is a further proves that value of the firm was low within the period. Dividend payout ratio is reported to have smallest figure 13.09 and largest figure of 85.39, which connotes smallest value of dividend payout ratio paid by the listed consumer goods firms was about 13%, while the largest value of dividend payout ratio was at 85%. On overall, dividend payout ratio mean value stood at 55.9170 implying that most firms paid about 55% of their profit as dividend on per shares held. Ownership concentration had smallest value of 0.08 and largest value of 0.78 implying that there were firms with less than 10% of concentrated shares held within the study period. The largest value connotes that there was a firm whose concentrated ownership was occupied by 78% of block holders. The mean value of 0.342 means that, on the average, all the firms had at least about 34% of their shares held in block form.

➢ *Correlation Analysis*

Table 3 display the correlation values of the variables. The reason for the spearman correlation choice was a result of the Jacque bera normality test result which shows most variables are not normally spread.

Table 3 Correlation Matrix

	TOBINSQ	DPAY	OWNC	FS
TOBINSQ	1			
DPAY	.1022	1		
OWNC	.2067*	-.1123	1	
FS	-.0306	-.1750*	-.1760*	1

Source: STATA 17 Output
* 0.01 or 0.05 level of significance (2-tailed)

Table 3 displays firm value proxied with Tobin's Q is positive and not strongly related to dividend payout ratio to level of 10%. This means that firm value has direct relationship with dividend payout ratio. Ownership concentration has positive and significant association with firm value to level of 20% which means direct relationship between the variables. Firm value had negative but insignificant association with firm size to the level of 3%.

This means correlation between the variables is in different direction. The relationship between the independent variables were less significant and it can be concluded based on the multicolinearity test result that the significant association between the independent variables will not pose any threat to the inferences to be made from the output.

➢ *Robustness Tests*

Multicolinearity Test was conducted and the association among the independent variables was tolerably mild. Hauber, et al. (2014) posited that to confirm the existence of harmful multicolinearity, the tolerance and Variance Inflation Factor (VIF) should be reliably lesser than one and ten respectively indicating an absence of harmful multicollinearity. Furthermore, Heteroscedasticity test result obtained showed a chi-square figure of 83.58 and probability figure of 0.000 indicating the presence of heteroskedasticity. This necessitated the conduct and subsequent choice and interpretation of Robust Ordinary Least Square because of violation of one of the classical assumption of OLS. Normality test of the residual was conducted using Kernel Density Estimate and it shows a mild normal curve.

➢ *Presentation and Interpretation of Regression Result*

This part explains the effect between Dividend Policy, Ownership Structure and value of listed Consumer Goods Firms.

Table 4 Summary of Regression (OLS)

Variables	Coefficient	T-Statistics	Probability	Cumulative
Intercept	17.717	15.6	0.000	
DPAY	0.11329	3.63	0.000	
DPAYOWNC	0.34520	5.53	0.000	
OWNC	0.09206	2.47	0.015	
FS	0.04562	1.22	0.224	
R^2				0.4751
Fisher Exact Statistics				15.47
Prob>F				0.0000
Test of Significance Difference (F)				27.59
Probability F				0.00000

Source: STATA 17 Output

The aggregate R square of 0.4751 indicate that only 47.51% of the change in value of listed consumer goods firm in Nigeria is as a result of their dividend payout ratio, moderated dividend payout ratio, ownership concentration and firm size.

The Fisher Exact Statistics of 15.47 with a significant value at 1% indicates that dividend payout; ownership concentration and firm value model was fit. This implies only 1% percent chances of error and hence 99% probabilities that the association of the variables is not mere coincidence and as such the independent variables predict the dependent variable reliably.

Test of significance difference conducted shows significant difference between un-moderated and moderated variables based on a value of 27.59 and a probability of 1% significance level. This connotes that ownership concentration significantly moderated the association between dividend payout ratio and value of listed consumer goods firms in Nigeria. Therefore null hypothesis two is rejected.

Dividend payout ratio has a coefficient value of 0.11329 and t-value of 3.63 which is significant at 0.000 (1%). This implies that dividend payout ratio had significant and positive influence on value of listed consumer good firms in Nigeria. It further connotes that when there is one point increase in dividend payout ratio, the value of listed consumer goods firm in Nigeria will increase by 11.3%. Meanwhile, after moderation of dividend payout ratio with ownership concentration, the coefficient value stood at 0.34520 and t-value was 5.53 with a significant value of 0.000 (1%); therefore, the interaction between dividend payout ratio and ownership concentration recorded a positive and stronger effect on value of listed consumer goods firm in Nigeria. This signifies that a joint increase in the percentage of dividend payout ratio and ownership concentration, the value of listed consumer goods firms will be largely enhanced. Based on this findings and analysis, the study therefore reject hypothesis one of the study.

Ownership concentration was observed to be significant but negatively influence the degree of value of firm. This is following the coefficient value -0.09206 and t-value of -2.47 which is significant at 5% (0.015). This implies that when ownership concentration increases, the value of listed consumer goods firms increases. Based on this forgoing analysis in respect of the entire variable, hypothesis three which posits that ownership concentration has no significant impact on value of listed consumer goods firms in Nigeria is hereby rejected.

V. CONCLUSIONS WITH RECOMMENDATIONS

Through rigorous empirical analysis, this study has elucidated the intricate dynamics between dividend payout ratio, ownership concentration, and the resultant firm value for Consumer Goods firms listed in Nigeria. Evidently, a significant and positive correlation exists between dividend payout ratio and firm value. Yet, intriguingly, the study discovered that this relationship is enhanced when paired with concentrated ownership. This suggests that the microstructure of firm ownership is a critical determinant in

amplifying the effects of dividend strategies on firm valuation.

➢ *Considering these Significant Findings, the following Recommendations are Made:*

- *Dividend Policy Optimization:*

It is pivotal for firms to calibrate their dividend policies in tandem with their ownership structure. As demonstrated, a high dividend payout ratio, when complemented by concentrated ownership, can significantly drive up firm value. Strategic adjustments in these dimensions could serve as a robust tool for value enhancement.

- *Regulatory Implications:*

Regulatory bodies, including the Securities and Exchange Commission (SEC) and Nigerian Exchange Group, are advised to recognize the empirical significance of dividend payment strategies. In view of its contribution to firm value, dividend payment could be instituted as a salient criterion for listings on the Stock Exchange, ensuring the systematic preservation of shareholder value.

- *Governance and Control Mechanisms:*

With the evident influence of ownership concentration, there's a heightened need for stringent corporate governance measures. Concentrated ownership, while having positive implications on firm value, could potentially sideline minority shareholders. Robust control mechanisms are thus imperative to ensure equitable decision-making.

SUGGESTIONS FOR FURTHER RESEARCH

➢ *Cross-Sectoral Analysis:*

This study's purview was limited to the consumer goods sector in Nigeria. Given the significant findings here, a cross-sectoral analysis could provide insights into the universality or specificity of these relationships. Researchers could explore whether similar significant and positive correlations exist in other sectors.

➢ *Diversified Ownership Dynamics:*

The study's emphasis on ownership concentration is a starting point. Delving deeper into the mosaic of ownership structures – managerial ownership, institutional ownership, and foreign ownership – might unearth nuanced relationships. Examining how these diverse ownership structures interact with dividend policies, and subsequently influence firm value, will enhance the granularity and depth of our understanding.

REFERENCES

[1]. Ahmed, A. D., Kabir, M. A., & Ibrahim, M. (2023). Dividend policy and share price of listed deposit money banks in Nigeria: Moderating effect of inflation rate. Department of Accounting, Faculty of Management Sciences, Bauchi State University Gadau, Bauchi, Nigeria.

[2]. Baker, M., & Wurgler, J. (2004). Appearing and disappearing dividends: The link to catering incentives. *Journal of financial economics*, *73*(2), 271-288.

[3]. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

[4]. Black, F., & Scholes, M. (1974). The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns. *Journal of Financial Economics*, 1(1), 1-22.

[5]. Chalaki, P., Didar, H., & Riahinezhad, M. (2012). Corporate governance attributes and financial reporting quality: Empirical evidence from Iran. *International Journal of Business and Social Science*, *3*(15).

[6]. Chijuka, I. M., & Hussein, M. (2023). Dividend policy and consumer goods sector in Nigeria. University of Benin.

[7]. Chrisman, J. J., Chua, J. H., & Litz, R. (2003). A unified systems perspective of family firm performance: An extension and integration. *Journal of business venturing*, *18*(4), 467-472.

[8]. DeAngelo, H., DeAngelo, L., & Stulz, R. M. (2006). Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. *Journal of Financial economics*, *81*(2), 227-254.

[9]. Din, S. U., Khan, M. A., Khan, M. J., & Khan, M. Y. (2021). Ownership structure and corporate financial performance in an emerging market: a dynamic panel data analysis. International Journal of Emerging Markets, 17(8), 1973-1997.

[10]. Eryomin, I., Likhacheva, O., & Chernikova, L. (2021). Impact of Dividend Policy on the Market Value of the Company. In *SHS Web of Conferences* (Vol. 91, p. 01013). EDP Sciences.

[11]. Falade, A. O. O., Nejo, F. M., & Gbemigun, C. O. (2021). Managerial Ownership and Firm Value of Selected Nigeria Listed Manufacturing Companies: Does Dividend Payment Policy Really Mediate?. *Noble International Journal of Economics and Financial Research*, *6*(4), 78-90.

[12]. Fama, E. F., & French, K. R. (2001). Disappearing dividends: changing firm characteristics or lower propensity to pay?. *Journal of Financial economics*, *60*(1), 3-43.

[13]. Firth, M., Fung, P. M., & Rui, O. M. (2007). Ownership, two-tier board structure, and the informativeness of earnings–Evidence from China. *Journal of Accounting and public policy*, *26*(4), 463-496.

[14]. Hansda, S., Sinha, A., & Bandopadhyay, K. (2020). Dividend Policy: Evidence of Clientele Effect in India. *ASBM Journal of Management*, *13*(2), 47-64.
[15]. Hassan, M. F. (2023). The relationship between dividends policy and firm value, profitability, liquidity and leverage evidence from Saudi Stock Exchange. King Faisal University. https://doi.org/10.59670/jns.v34i.1015.
[16]. Hauber, M. E., Samaš, P., Anderson, M. G., Rutila, J., Low, J., Cassey, P., & Grim, T. (2014). Life-history theory predicts host behavioural responses to experimental brood parasitism. *Ethology Ecology & Evolution*, *26*(4), 349-364.
[17]. Idewele, I. O. E., & Murad, B. A. (2019). Dividend policy and financial performance: a study of selected deposit money banks in Nigeria. African Journal of Business Management. https://doi.org/10.5897/ajbm2018.8667
[18]. Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review*, 76(2), 323-329.
[19]. 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
[20]. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Agency problems and dividend policies around the world. The Journal of Finance, 55(1), 1-33.
[21]. Litzenberger, R. H., & Ramaswamy, K. (1982). The Effects of Dividends on Common Stock Prices Tax Effects or Information Effects? *Journal of Finance*, 37(2), 429-443.
[22]. McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. Journal of Financial economics, 27(2), 595-612.
[23]. Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance, and the Theory of Investment. *American Economic Review*, 48(3), 261-297.
[24]. Modigliani, F., & Miller, M. H. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34(4), 411-433.
[25]. Mubaraq, M., Rahayu, S. M., Saifi, M., & Darmawan, A. (2021). The moderating effect of corporate governance on the relationship between dividend policy, capital structure, and firm value: Evidence from Indonesian manufacturer companies. *European Journal of Molecular & Clinical Medicine*, *8*(1), 880-889.
[26]. Musa, A., & Sanyaolu, O. (2018). "The Impact of Ownership Structure on Firm Value in the Kenyan Banking Sector." Journal of Banking Studies, 12(3), 45-60.
[27]. Myers, S. C., & Majluf, N. S. (1984). Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have. *Journal of Financial Economics*, 13(2), 187-221.
[28]. Naz, F., Abrish, S., & Sadiq, N. (2023). Dividend Policy and Firm Performance with Moderating Effect of Ownership Structure: Evidence from The Manufacturing Firms in Pakistan. International Journal of Management Research and Emerging Sciences, 13(2).
[29]. Nwamaka, O. C. (2017). Effect of dividend policies on firm value: Evidence from quoted firms in Nigeria. *International Journal of Management Excellence (ISSN: 2292-1648)*, *8*(2), 956-967.
[30]. Osakwe, A. C., Ezeabasili, V. N., & Chukwunulu, J. I. (2019). Effect of dividend policy on stock prices: Evidence from Nigeria. *International Journal of Economics and Financial Management*, *4*(3), 31-45.
[31]. Oyedokun, G. E., Isah, S., & Awotomilusi, N. S. (2020). Ownership structure and firm value of quoted consumers goods firms in Nigeria. *JASF*, *3*(2), 214-228.
[32]. Debnath, P., Dey, B. K., Mazumdar, N., Das, S., & Gachuiwo, H. (2022). Demystifying the nexus between ownership structure and performance: a study of the emerging market.
[33]. Purbawangsa, I., & Rahyuda, H. (2022). The effect of ownership structure, dividend policy, composition of the board of directors on financial performance and share return. *Accounting*, *8*(1), 1-8.
[34]. Rizqia, D. A., & Sumiati, S. A. (2013). Effect of managerial ownership, financial leverage, profitability, firm size, and investment opportunity on dividend policy and firm value. *Research Journal of Finance and Accounting*, *4*(11), 120-130.
[35]. Rozeff, M. S. (1982). Growth, beta and agency costs as determinants of dividend payout ratios. *Journal of Financial Research*, 5(3), 249-259.
[36]. Sanyaolu, W. A., Odunayo, J., & Graig, A. O. (2019). Dividend policy and firms value: Evidence from quoted food and beverages companies in Nigeria. *Varna Journal of Economics*, *63*(2), 133-147.
[37]. Sari, R. M., & Patrisia, D. (2020). The Effect of Institutional Ownership, Capital Structure, Dividend Policy, and Company Growth on Company Value. International Journal of Management and Business (IJMB), 1(1), 1-9.
[38]. Scholtz, H. E., & Engelbrecht, W. (2015). The Level and Stability of Institutional Ownership and its Influence on Company Performance in South Africa. *Corporate Ownership & Control*, *13*(1), 1265-1277.
[39]. Shleifer, A., & Vishny, R. W. (1986). Large Shareholders and Corporate Control. *Journal of Political Economy*, 94(3), 461-488.
[40]. Short, H., & Keasey, K. (1999). Managerial ownership and the performance of firms: Evidence from the UK. *Journal of corporate finance*, *5*(1), 79-101.
[41]. Spence, M. (1973). Job Market Signaling. Quarterly Journal of Economics, 87(3), 355-374.

[42]. Sraer, D., & Thesmar, D. (2007). Performance and behavior of family firms: Evidence from the French stock market. *Journal of the european economic Association*, *5*(4), 709-751.

[43]. Thompson, S., Dogarawa, A. B., Bello, A., & Fodio, M. I. (2016). Board characteristics, ownership structure and firm value of listed petroleum companies in Nigeria. *Thompson, S., Dogarawa, AB, Bello, A. & Fodio, MI, Board Characteristics, Ownership Structure and Firm Value of Listed Petroleum Companies in Nigeria. Nigerian Journal of Accounting Research, A Publication of Department of Accounting, Ahmadu Bello University, Zaria*, *12*(2), 59-108.

[44]. Tnushi, P. T., Yahaya, O. A., & Agbi, S. E. (2023). Ownership structure and dividend policy of listed deposit money banks in Nigeria. *International Journal of Management Science and Business Administration*, *10*(1), 68-82.

[45]. Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value?. *Journal of financial Economics*, *80*(2), 385-417.

[46]. Wang, X., Manry, D., & Wandler, S. (2011). The impact of government ownership on dividend policy in China. *Advances in Accounting*, *27*(2), 366-372.

[47]. Zik-Rullahi, A. A., & Farouk, M. A. (2021). Share ownership, executive compensation and value of firm: A comparison between low and high levered banks in Nigeria. *Gusau Journal of Accounting and Finance*, *2*(1), 16-16.

APPENDICES

```
. xtset id year, yearly
       panel variable:  id (strongly balanced)
        time variable:  year, 2013 to 2022
                delta:  1 year
. xtsum tobinsq dpay ownc fs
```

Variable		Mean	Std. Dev.	Min	Max	Observations
tobinsq	overall	1.494519	1.076801	.019446	4.99671	N = 140
	between		.623204	.69133	2.615592	n = 14
	within		.8923368	-.8350395	4.092548	T = 10
dpay	overall	55.91707	17.95591	13.9	85.39	N = 140
	between		5.625072	45.872	67.208	n = 14
	within		17.11204	7.447071	88.39507	T = 10
ownc	overall	.3425714	.1526192	.08	.78	N = 140
	between		.0890097	.207	.536	n = 14
	within		.1260273	.0205714	.7235714	T = 10
fs	overall	18.57576	1.044643	16.3004	20.2848	N = 140
	between		1.003252	17.05176	19.87817	n = 14
	within		.3872147	16.79487	20.50857	T = 10

```
. su tobinsq dpay ownc fs, detail
```

TobinsQ

Percentiles		Smallest		
1%	.019446	.019446		
5%	.2540175	.019446		
10%	.376847	.121719	Obs	140
25%	.7121015	.1241	Sum of Wgt.	140
50%	1.17747		Mean	1.494519
		Largest	Std. Dev.	1.076801
75%	2.022225	4.28105		
90%	3.127185	4.44338	Variance	1.159501
95%	3.670385	4.62568	Skewness	1.147343
99%	4.62568	4.99671	Kurtosis	3.814026

ISSN No:-2456-2165

DPAY

Percentiles		Smallest		
1%	13.9	13.9		
5%	16.7	13.9		
10%	29.125	15.2	Obs	140
25%	45.495	15.2	Sum of Wgt.	140
50%	60.42		Mean	55.91707
		Largest	Std. Dev.	17.95591
75%	67.01	85.39		
90%	78.43	85.39	Variance	322.4145
95%	81.26	85.39	Skewness	-.6125087
99%	85.39	85.39	Kurtosis	2.874588

OWNC

Percentiles		Smallest		
1%	.15	.08		
5%	.16	.15		
10%	.165	.15	Obs	140
25%	.235	.15	Sum of Wgt.	140
50%	.31		Mean	.3425714
		Largest	Std. Dev.	.1526192
75%	.42	.78		
90%	.57	.78	Variance	.0232926
95%	.64	.78	Skewness	.9155784
99%	.78	.78	Kurtosis	3.461198

FS

Percentiles		Smallest		
1%	16.5236	16.3004		
5%	16.8112	16.5236		
10%	17.0344	16.5236	Obs	140
25%	17.7536	16.5236	Sum of Wgt.	140
50%	18.8261		Mean	18.57576
		Largest	Std. Dev.	1.044643
75%	19.3696	20.2174		
90%	19.8314	20.2174	Variance	1.09128
95%	20.07385	20.2249	Skewness	-.3777175
99%	20.2249	20.2848	Kurtosis	2.060754

```
. sktest tobinsq dpay ownc fs
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint adj chi2(2)	joint Prob>chi2
tobinsq	140	0.0000	0.0654	20.94	0.0000
dpay	140	0.0038	0.9519	7.65	0.0218
ownc	140	0.0001	0.2040	14.82	0.0006
fs	140	0.0632	0.0000	16.27	0.0003

ISSN No:-2456-2165

```
. swilk tobinsq dpay ownc fs

                    Shapiro-Wilk W test for normal data

    Variable |     Obs       W           V         z       Prob>z
-------------+--------------------------------------------------
     tobinsq |     140    0.89667     11.334     5.484    0.00000
        dpay |     140    0.95766      4.644     3.469    0.00026
        ownc |     140    0.93084      7.587     4.577    0.00000
          fs |     140    0.95118      5.355     3.790    0.00008

. sfrancia tobinsq dpay ownc fs

                    Shapiro-Francia W' test for normal data

    Variable |     Obs       W'          V'        z       Prob>z
-------------+--------------------------------------------------
     tobinsq |     140    0.89971     12.074     5.032    0.00001
        dpay |     140    0.95987      4.831     3.182    0.00073
        ownc |     140    0.92828      8.633     4.355    0.00001
          fs |     140    0.95683      5.197     3.330    0.00043

. spearman tobinsq dpay ownc fs, star (0.05)
(obs=140)

             |  tobinsq     dpay     ownc       fs
-------------+------------------------------------
     tobinsq |   1.0000
        dpay |   0.1022   1.0000
        ownc |   0.2067* -0.1123   1.0000
          fs |  -0.0306  -0.1750* -0.1760*  1.0000

. pwcorr tobinsq dpay ownc fs, star (0.05) sig

             |  tobinsq     dpay     ownc       fs
-------------+------------------------------------
     tobinsq |   1.0000
             |
             |
        dpay |   0.0534   1.0000
             |   0.5313
             |
        ownc |   0.1457  -0.1601   1.0000
             |   0.0859   0.0588
             |
          fs |   0.0258  -0.1072  -0.2213*  1.0000
             |   0.7622   0.2075   0.0086
             |
```

```
. reg tobinsq dpay dpayownc ownc fs
```

Source	SS	df	MS	Number of obs	=	140
Model	7.09639963	4	1.77409991	F(4, 135)	=	30.55
Residual	7.83931466	135	.058068997	Prob > F	=	0.0000
				R-squared	=	0.4751
				Adj R-squared	=	0.4596
Total	14.9357143	139	.107451182	Root MSE	=	.24098

tobinsq	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
dpay	.1132915	.0335931	3.37	0.001	.0468546	.1797283
dpayownc	.3452065	.0463682	7.44	0.000	.2535045	.4369084
ownc	-.0920918	.0433652	-2.12	0.036	-.1778547	-.0063289
fs	-.0456257	.0444113	-1.03	0.306	-.1334576	.0422062
_cons	-1.561835	.4112453	-3.80	0.000	-2.375152	-.7485184

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of tobinsq

         chi2(1)      =    83.58
         Prob > chi2  =   0.0000

. vif
```

Variable	VIF	1/VIF
dpay	5.20	0.192437
fs	5.15	0.194091
dpayownc	1.07	0.931566
ownc	1.05	0.952424
Mean VIF	3.12	

```
. reg tobinsq dpay dpayownc ownc fs, robust
```

Linear regression

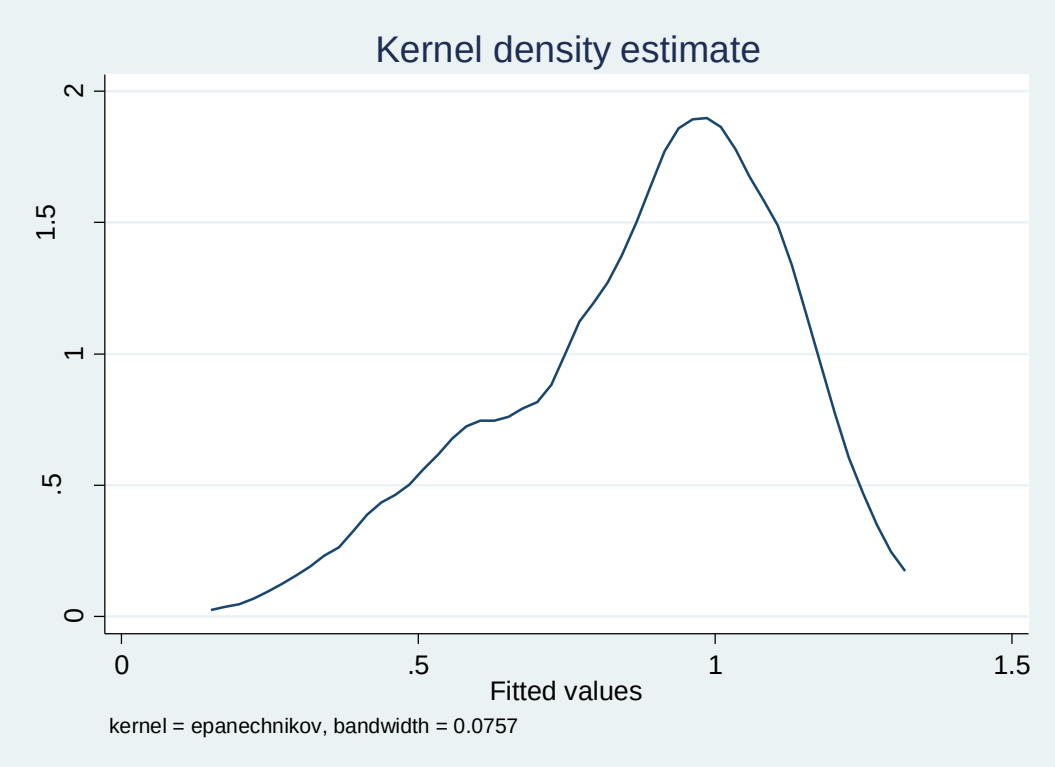
				Number of obs	=	140
				F(4, 135)	=	15.47
				Prob > F	=	0.0000
				R-squared	=	0.4751
				Root MSE	=	.24098

tobinsq	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
dpay	.1132915	.0312469	3.63	0.000	.0514947	.1750882
dpayownc	.3452065	.0624516	5.53	0.000	.2216964	.4687165
ownc	-.0920918	.0373104	-2.47	0.015	-.1658803	-.0183033
fs	-.0456257	.0373415	-1.22	0.224	-.1194757	.0282244
_cons	-1.561835	.4160563	-3.75	0.000	-2.384666	-.7390038

```
. predict e
(option xb assumed; fitted values)

. kdensity e
```

ISSN No:-2456-2165




```
. xtreg tobinsq dpay dpayownc ownc fs, fe

Fixed-effects (within) regression               Number of obs      =       140
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.1353                         Obs per group: min =        10
       between = 0.5135                                        avg =      10.0
       overall = 0.2984                                        max =        10

                                                F(4,122)           =      4.77
corr(u_i, Xb)  = 0.4283                         Prob > F           =    0.0013

------------------------------------------------------------------------------
     tobinsq |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        dpay |    .013652   .0246419     0.55   0.581     -.035129     .062433
    dpayownc |   .1292967   .0307672     4.20   0.000       .06839    .1902034
       ownc |   -.007072   .0248773    -0.28   0.777    -.0563191    .0421751
          fs |  -.0265703    .034432    -0.77   0.442     -.094732    .0415913
       _cons |   .9113539   .5717075     1.59   0.114    -.2203981    2.043106
-------------+----------------------------------------------------------------
     sigma_u |  .28567537
     sigma_e |  .12200263
         rho |  .84574712   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(13, 122) =    31.13                 Prob > F = 0.0000

. est store fixed
```

ISSN No:-2456-2165

```
. xtreg tobinsq dpay dpayownc ownc fs, re

Random-effects GLS regression                   Number of obs      =       140
Group variable: id                              Number of groups   =        14

R-sq:  within  = 0.1277                         Obs per group: min =        10
       between = 0.7204                                        avg =      10.0
       overall = 0.4505                                        max =        10

                                                Wald chi2(4)       =     24.98
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0001
```

tobinsq	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dpay	.0279819	.0251326	1.11	0.266	-.0212771	.0772409
dpayownc	.1465981	.0318719	4.60	0.000	.0841303	.209066
ownc	-.0111193	.0259688	-0.43	0.669	-.0620171	.0397785
fs	-.0124292	.0346527	-0.36	0.720	-.0803472	.0554889
_cons	.2466002	.532403	0.46	0.643	-.7968905	1.290091
sigma_u	.18375981					
sigma_e	.12200263					
rho	.69406095	(fraction of variance due to u_i)				

```
. est store random

. hausman fixed random
```

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
dpay	.013652	.0279819	-.0143299	.
dpayownc	.1292967	.1465981	-.0173014	.
ownc	-.007072	-.0111193	.0040473	.
fs	-.0265703	-.0124292	-.0141412	.

```
                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(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        3.33
            Prob>chi2 =      0.5035
            (V_b-V_B is not positive definite)
```

ISSN No:-2456-2165

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        tobinsq[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                        |       Var     sd = sqrt(Var)
                --------+------------------------------
                 tobinsq|    .1074512       .3277975
                      e |    .0148846       .1220026
                      u |    .0337677       .1837598

        Test:   Var(u) = 0
                                chibar2(01) =   184.31
                            Prob > chibar2 =   0.0000


.
. testparm tobinsq dpay dpayownc ownc fs, equal

 ( 1)  - dpayownc + ownc = 0
 ( 2)  - dpayownc + fs = 0

       F(  2,   136) =   27.59
            Prob > F =    0.0000
```