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EFFECT OF FIRM SIZE ON CASH HOLDINGS OF FOOD AND BEVERAGES FIRMS IN NIGERIA

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Abstract

This study investigated the impact of firm size on cash holdings within the manufacturing sector of Nigeria, focusing specifically on food and beverage firms. The independent variables were total assets and total turnover, while the dependent variable was cash holding. Data were sourced from the published Annual Financial Statements of five food and beverage manufacturing firms listed on the Nigerian Exchange Group over a ten-year period (2008-2017).The study employed *ex-post facto* research design. Panel data analysis was with Generalized Method of Moments (GMM) estimator model. The results from the fixed regression model reveal that turnover exhibited a positive but non-significant effect on cash holding, while total assets showed a negative but significant impact. These findings underscored the influence of firm size on cash management practices within the food and beverage industry in Nigeria, suggesting the importance of maintaining optimal cash levels to meet immediate financial needs while ensuring long-term solvency. It was concluded that a significant correlation exist between firm size and cash holding decisions. The study recommended, among others, that firms should carefully plan their total asset to enhance productivity and control acquisition costs.

Introduction

Cash management is a critical aspect of financial decision-making for businesses, as it directly impacts their liquidity, operational efficiency, and profitability, in the context of the food and beverages industry in Nigeria, where economic conditions can be dynamic and challenging, understanding the factors influencing cash holdings becomes paramount (Orji, 2009). Cash, as the lifeblood of businesses, ensures the smooth functioning of operations, facilitates investment, and mitigates financial risks.

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Firm size, a fundamental determinant in the business landscape, plays a pivotal role in shaping cash management strategies. Larger firms often enjoy economies of scale, enabling them to optimize production costs and expand market share (Louge, 2009). Conversely, smaller firms may face resource constraints but could exhibit agility and niche expertise. Exploring how firm size influences cash holdings within the context of the food and beverages sector in Nigeria is imperative for strategic financial planning and sustainable growth.

The Nigerian food and beverages industry represents a significant segment of the country's economy, contributing to employment generation, GDP growth, and foreign exchange earnings. With a diverse range of products catering for domestic and international markets, firms operating in this sector face various challenges related to production, distribution, and market competition. Effective cash management is vital for navigating these challenges and capitalizing on emerging opportunities.

However, the existing literature on cash management in the Nigerian food and beverages industry remains relatively sparse, with limited empirical studies focusing specifically on the relationship between firm size and cash holdings. While some research have explored general cash management practices and factors influencing liquidity in Nigerian firms, there is a notable gap in understanding how variations in firm size impact cash reserves and financial performance within this particular sector.

Statement of the Problem:

Despite the critical importance of cash management for sustaining business operations and driving growth, food and beverages firms in Nigeria face numerous challenges in optimizing their cash holdings. One of the central issues is the lack of comprehensive empirical research examining the specific factors influencing cash management practices within this industry, particularly the impact of firm size.

The absence of robust empirical evidence hampers the ability of managers and policymakers to develop targeted strategies for enhancing cash management efficiency and financial resilience in food and beverage firms. Without a clear understanding of how firm size influences cash holdings, firms may struggle to allocate resources effectively, leading to suboptimal financial performance and increased vulnerability to market shocks.

Furthermore, the Nigerian business environment is characterized by unique institutional, regulatory, and economic dynamics, which may further complicate cash management decisions for food and beverage firms. Factors such as access to finance, market competition, and supply chain disruptions can vary significantly based on firm size, further underscoring the need for tailored research focusing on this specific industry segment.

In light of these challenges, there is a compelling need to conduct in-depth empirical research to examine the effect of firm size on cash holdings of food and beverage firms in Nigeria. By elucidating the relationship between firm size and cash management practices, this study aims to provide actionable insights that can inform strategic decision-making, enhance financial sustainability, and promote long-term growth and competitiveness within the Nigerian food and beverage industry.

Objectives of the study

1. To examine the effect of total assets on cash holdings
2. To assess the effect of turnover on cash holdings

Research Questions

In this section, two research questions are posed thus:

(1) What effect do total assets have on cash holdings?

(2) To what extent does turnover affect cash holdings?

Research Hypotheses

The followings are the hypotheses of the study:

HO1. Total assets have no significant effect on cash holdings.
HO2. Turnover has no significant effect on cash holdings.

Review of Related Literature

Firm Size

Firm size stands as a pivotal determinant influencing various aspects of a company's performance, encompassing profitability, market power, and bargaining strength. Oseiman (2015) emphasizes that a firm's size profoundly shapes its relationships within and outside its operational sphere, with larger firms typically wielding greater influence over stakeholders. The dominance of conglomerates and multinational corporations in both global and local economies, as noted by Abel (2006), underscores the significant role firm size plays in corporate environments. Moreover, Bala, Darry, and Matthew (2005) contend that firm size serves as a critical factor impacting financial performance, with larger firms often enjoying advantages such as economies of scale and scope, which bolster profitability and competitive prowess (Sumit, 1997).

The discourse on impact of firm size on corporate performance has spurred extensive theoretical and empirical research across economic, management, and sociological domains. While conventional economic theory posits that larger firms accrue incremental advantages by raising entry barriers and leveraging economies of scale for higher profitability (Chrystal & Lipsey, 1997), empirical evidence has yielded mixed conclusions. Despite numerous studies attempting to elucidate the relationship between firm size and performance, definitive conclusions remain elusive, especially considering variations in measurement methodologies and regional contexts (Claudio & Urs, 2009).

Measurement approaches for firm size vary widely, including total assets, number of employees, or specialized indices capturing diverse resources available to the firm (Elisabeth & Alexander, 2012; Erasmus, 2013; Owen & Paul, 2003). Regardless of the metric employed, the overarching aim remains to gauge the magnitude of a firm's operations and resources. Notably, the choice of measurement can influence research outcomes and interpretations regarding the impact of firm size on performance, necessitating careful consideration in empirical investigations (Chander & Aggarwal, 2008; Staffan, Philip & David, 2006). Hence, while firm size undeniably shapes organizational dynamics and performance outcomes, the intricacies of this relationship continue to stimulate scholarly discourse and empirical inquiry across disciplines.

Total Assets

Total assets represent a comprehensive aggregation of a firm's tangible and intangible resources, encompassing plant assets, land, buildings, and other long-term deferred expenses (Carl, James, & Philip, 1996). Distinguished from short-term expenses like supplies or pre-insurance, total assets encapsulate items capable of assuming different forms within a financial period, typically spanning twelve months. This category includes crucial components of a company's infrastructure and investments, reflecting its capacity for wealth creation and operational sustainability.

Within financial discourse, total assets serve as a fundamental indicator of a firm's financial health and operational capacity. By encompassing a spectrum of tangible and intangible resources, total assets offer insights into the scale and diversity of a company's holdings and investments. Moreover, the management and utilization of total assets play a central role in determining a firm's efficiency, profitability, and long-term viability (Osisioma, 1996). As such, total assets constitute a vital metric for investors, analysts, and stakeholders seeking to evaluate a company's financial strength and growth potential.

The significance of total assets extends beyond financial reporting, permeating strategic decision-making and operational management. Firms routinely deploy total assets as collateral for financing, leverage for expansion,

or indicators of market value and competitive positioning. Furthermore, fluctuations in total assets can signal shifts in a company's strategic priorities, investment strategies, and overall business trajectory. Thus, total assets serve as a foundational pillar of financial analysis, offering a holistic perspective on a firm's asset base and economic standing amidst dynamic market conditions.

Turnover

Turnover, or sales ratio, constitutes a pivotal metric reflecting the efficiency of a company's asset utilization and revenue generation strategies. Rooted in activity ratios, turnover gauges the frequency with which assets, both fixed and current, are converted into earnings-generating resources (Osisioma, 1996). By quantifying the intensity of management activities and asset turnover, this metric offers insights into operational efficiency, resource utilization, and revenue generation dynamics.

The relevance of turnover extends beyond financial metrics, encompassing broader implications for cash flow management and liquidity. Firms with higher turnover ratios typically generate greater cash flows, enabling them to finance operational investments, meet financial obligations, and pursue growth opportunities (Osisioma, 1996). Moreover, turnover ratios inform strategic decisions regarding inventory management, pricing strategies, and sales channel optimization, exerting a profound impact on a company's competitiveness and profitability.

In essence, turnover serves as a barometer of operational efficiency and financial health, guiding managerial decisions and investor perceptions. By analyzing turnover ratios alongside other financial metrics, stakeholders can assess a firm's ability to generate revenue from its asset base, optimize resource allocation, and sustainably drive growth. Consequently, turnover stands as a critical yardstick for evaluating a company's operational performance, liquidity position, and strategic resilience in dynamic market environments.

Cash Holding

In the realm of corporate finance, the level of cash holding has been subject to extensive theoretical and empirical scrutiny. While Modigliani and Miller (1958) posit that under ideal capital market conditions, cash holding holds no relevance for firms due to the availability of easily accessible cash through capital markets, real-world complexities introduce nuances to this assertion. Market frictions such as transaction costs, information asymmetry, and agency costs (Jensen & Meckling, 1976) necessitate a more nuanced understanding of cash holding dynamics. Empirical studies suggest that holding cash serves as a strategic tool for firms, offering flexibility to exploit profitable investment opportunities while mitigating the high costs associated with external financing (Opler et al., 1999). However, Jensen's (1986) free cash flow hypothesis cautions against excessive cash holdings, positing that managerial incentives may lead to suboptimal allocation of resources, potentially diminishing shareholder value.

Research endeavors aimed at unraveling the determinants and implications of cash holding underscore the pivotal role of investment opportunities. Studies reveal that firms with ample investment prospects tend to hold larger cash reserves to fund profitable ventures without resorting to costly external financing (Emekekwue, 1998). Moreover, cash holdings act as a buffer against cash flow uncertainties, enabling firms to maintain operational stability and honor financial commitments, including dividend payments. The strategic importance of cash holding extends beyond financial considerations, impacting firm reputation, stakeholder perceptions, and overall goodwill in the marketplace. Consequently, understanding the drivers and consequences of cash holding remains a focal point of scholarly inquiry and managerial decision-making in contemporary corporate finance.

Cash

Cash represents the lifeblood of business transactions, embodying monetary items immediately available for management's utilization. It encompasses liquid assets held in various forms, including bank deposits, cash on hand, and other readily accessible financial instruments (Osisioma, 1996). Integral to the functioning of markets and enterprises, cash facilitates the exchange of goods and services, serving as a medium of settlement for transactions. Moreover, cash management strategies play a pivotal role in optimizing liquidity, ensuring operational resilience, and supporting strategic initiatives within organizations.

In financial discourse, cash is synonymous with liquidity, embodying the financial responsiveness and solvency of a firm. The availability of cash influences a company's ability to seize opportunities, navigate uncertainties, and meet financial obligations promptly. As such, cash holdings are subject to meticulous management and strategic allocation to balance operational exigencies with long-term growth objectives. Furthermore, the efficient utilization of cash resources reflects management's acumen in deploying financial assets to enhance shareholder value and sustain organizational competitiveness (Victor, Samuel & Eric, 2013).

Profitability

Profitability stands as a cornerstone of economic viability and organizational success, encapsulating a firm's capacity to generate revenue surpassing costs relative to its capital base. Scholars define profitability as the ability to yield profits across business activities, signifying management efficiency in resource utilization and value creation (Owolabi & Obida, 2010). Profitability metrics such as return on assets, return on equity, and return on capital employed serve as barometers of a firm's financial performance, reflecting its ability to optimize resource deployment and generate sustainable returns.

Beyond financial metrics, profitability embodies strategic imperatives aimed at maximizing shareholder wealth and ensuring business sustainability. A profitable firm exhibits resilience against market shocks, enhances investor confidence, and contributes to overall economic stability (Roxana, 2010). Consequently, profitability serves as a vital compass guiding managerial decisions, strategic planning, and resource allocation within organizations. Across diverse stakeholder groups, profitability signals organizational health, managerial efficacy, and the capacity to deliver sustainable value in dynamic market environments. Hence, profitability analysis remains integral to financial forecasting, investment evaluation, and strategic management endeavors, facilitating informed decision-making and value creation initiatives (Ajanthan, 2013).

Economists, financial analysts, and accountants alike regard profitability as a fundamental indicator of a firm's financial strength and operational efficiency. Economists view profitability as a measure of the financial health of economic units, reflecting their ability to generate surplus value and contribute to overall economic vitality (Foerster et al., 2016). Financial analysts utilize profitability metrics to assess investment opportunities, forecast future earnings, and differentiate between competing investment alternatives. Additionally, accountants leverage profitability analysis to provide stakeholders with critical insights into the financial performance and management effectiveness of firms, aiding in decision-making processes and resource allocation strategies.

Profitability represents a multifaceted concept influenced by a myriad of internal and external factors, including market dynamics, competitive positioning, operational efficiency, and managerial decisions (Heikal, Khaddai, & Umumiah, 2014). The pursuit of profitability aligns with strategic objectives aimed at maximizing shareholder wealth, ensuring business sustainability, and fostering long-term growth. Moreover, profitability serves as a vital conduit for wealth creation, enabling firms to reinvest earnings, expand operations, and fulfill stakeholder expectations. By scrutinizing profitability metrics and trends, stakeholders gain valuable insights into a firm's performance trajectory, risk profile, and potential for value creation, facilitating informed decision-

making and strategic planning endeavors. Thus, profitability analysis remains an indispensable tool for assessing organizational performance, driving financial stewardship, and enhancing competitive advantage in dynamic market landscapes

Theoretical Review

Free cash flow theory

According to the free cash flow theory of Jensen (1986), managers prefer to hold high cashlevel to enhance the volume of total assets in their control. They also try to gain the distinctive powers in the firm's investment and financing decisions. These policies may lead to the over investment issues (Ferreira & Vilela, 2004).

Furthermore, Ferreira and Vilela (2004) argue that firms with strong affiliation with banks and firms operating in superior investor protection countries hold lower cash levels. These conditions support the existence of managerial discretion and agency cost issues in liquidity management.

Finally, it can be argued that management may accumulate cash because it does not want to make payouts to the shareholders. Drobetz and Grüninger (2007) support this argument showing that dividend payments are negatively related to cash reserves. This indicates that management may accumulate cash by cutting the dividend or it does not make payouts to shareholders, to keep funds within the firm. The modern firm can be seen as a nexus of contracts between resources holders (Charles &Thomas, 1992). And so, a firm is regarded as a system where there are various stakeholders and its objective is to maximize stakeholders‟ wealth. Consequently, it is considered a black box operated so as to meet the relevant marginal conditions with respect to inputs and outputs. There by, maximizing profits or more accurately firm’s present value. Considering this, several studies (Abdullah, Madya, Ayoib& Khaled, 2011); Gray and Birger (1989; Costea, 2006) have adopted different theories to under pin researches carried out on factors that determines firm performance. Such theories employed in these literatures include; agency theory, shareholders‟ theory and stakeholders‟ theory.

Empirical Review

Abdul, Maryann, and Rawalpindi (2017) investigated whether the responsiveness of cash holdings to firm-specific determinants varies between financially constrained and unconstrained firms. Utilizing a robust two-step system-GMM estimator on an unbalanced annual panel dataset covering 2001–2013, they sorted firm-year observations into financially constrained and unconstrained categories based on median values of firm size, dividend payout ratio, and the Whited and Wu (WW) index. The study found that financially constrained firms adjusted their cash holdings inversely with size, leverage, and payout ratio, while increasing cash with market-to-book value and cash flow volatility. Conversely, financially unconstrained firms exhibited a positive relationship between cash holdings and firm size, payout ratio, and market-to-book value, with negative associations with cash flow volatility and leverage.

In Pakistan, Sulaman et al. (2016) explored the determinants of corporate cash holdings across diverse firm sizes and industries. Utilizing a sample of 50 public limited companies listed on the Karachi Stock Exchange from 2012 to 2014, they found that firm size, board size, net working capital, and investment significantly affected corporate cash holdings. In contrast, debt structure, leverage, and return on assets showed non-significant and negative associations with cash holdings. Similarly, Rizwan Ahmed et al. (2017) investigated corporate cash holdings in China, finding significant negative relationships with leverage, bank debt, and non-cash liquid assets, while cash flow volatility, investment opportunity, and dividend showed positive associations.

Rashid (2012) examined the impact of cash holdings and ownership concentration on firm valuation in Australia, finding a positive relationship between cash holdings and firm value, moderated by ownership

structure. In Romania, Sorin (2015) found that high cash holdings could decrease firm value, signaling a lack of investment opportunities. Ogundipe et al. (2013) studied cash holdings and firm characteristics in Nigeria, noting significant effects of cash flow, networking capital, leverage, profitability, and investment capital expenditure on corporate cash holdings. Overall, these studies contribute to understanding the determinants and implications of corporate cash holdings across different contexts.

Materials and Methods

The study adopted an *ex-post facto* research design due to the utilization of secondary data extracted from historical records, ensuring freedom from biases. The research focused on manufacturing firms in the Foods and Beverage sector in Nigeria. Secondary data from published Annual Financial Statements of the selected firms for the period 2008-2017 are utilized. These data were accessed through the firms' websites and the Nigerian Exchange Group's fact books. The population comprised twelve listed foods and beverage firms in Nigeria as of the end of March 2019. Four firms were selected from the population using convenient sampling based on the availability and consistency of their Annual Financial Reports. The selected firms are Dangote Flour Mill Plc, Nascon, Guinness Nigeria Plc, and Nigeria Breweries Plc. Regression analysis was employed to examine the relationship between various independent variables (e.g., turnover, total assets, current assets, net profit before tax) and cash holdings.

The model used to estimate effect current assets on cash holding is shown below.

$$cul = f(cul(-1), cah)$$

where cul = current assets, cul(-1) =first log of liquid assets and the other variable is as already defined.

The above model can be transformed as below for estimation

$$cul_{it} = \alpha + \delta cul_{i,t-1} + \beta cah_{it} + \mu_i + \varepsilon_{it}$$

where cul_{it} represent total assets for firm i and time t, $cul_{i,t-1}$ represent total assets for firm i at last time t-1

The model used to estimate effect of liquid assets on cash holding is shown below.

$$cas = f(cas(-1), cah)$$

where cas = current asset, cash(-1) = first log of current asset and the other variable is as already defined.

The above model can be transformed as below for estimation

$$cas_{it} = \alpha + \delta cas_{i,t-1} + \beta cah_{it} + \mu_i + \varepsilon_{it}$$

where cas_{it} represent total assets for firm i and time t, $cas_{i,t-1}$ represent total assets for firm i at last time t-1.

Results

The results of the study are presented below:

Table 1: Effects of total assets on the cash holding of food and beverage Firms in Nigeria

Variable	Coefficient	z-stat.	probability
lncash_hold(-1)	-0.9264085	-3.57	0.000
lntotal_ass	2.748396	5.1	0.000
Cons	-19.36703	-2.46	0.014

Source: Authors' computation, 2024 using Stata 14.

Hypothesis 1: Total assets have no significant effect on the cash holdings of the food and beverage firms.

From table 1 above, the probability value for the z-statistics as shown is less than 0.05(0.000<0.05). Since the p-value is less than 0.05, we reject H_0 and conclude that total assets have significant effect on cash holdings of the food and beverage firms.

Table 2: Effects of turnover on the cash holding of food and beverage Firms

Variable	Coefficient	z-stat.	probability
lncash_hold(-1)	-0.1747823	-0.46	0.648
lntotal_tova	1.9133	4.33	0.000
Cons	-16.09301	-2.85	0.004

Source: Authors' computation, 2024 using Stata 14.

Hypothesis 2: Total turnover has no effect on the cash holdings of the food and beverage firms.

From table 2 above, the probability value for the coefficient of turnover as shown is greater than 0.05(0.648>0.05). Since the p-value is greater than 0.05, we accept H_0 and conclude that total turnover has no significant effect on cash holdings of the food and beverage firms.

Discussions of Findings

All indicators of firm size, such as total asset and turnover appear to have a positive effect on cash holdings. This finding is supported by Ghada (2016), Borric and Ahba (2015), and Osundina (2014).

In the descriptive statistics, the variable "log of total assets" has the largest mean value of 17.9252, followed by "log of total turnover" with a value of 17.7816. The variable "log of cash holding" has the least mean value of 15.3126 indicating greater variability.

The Jarque-Bera statistic, a test for normal distribution, does not reject the null hypothesis of normal distribution for total assets and net profit before tax. This finding is consistent with Ogundipa, Salowu, and Ogundipa (2012). However, there are conflicting results regarding the relationship between firm size and cash holding, with some studies suggesting a negative effect (Ghada, 2017), while others indicate a positive effect (Gill and Shaha, 2012; Enyew, 2016). Rizwan Ahmad Qu Ullah and Kumani also found a significantly negative relationship with non-cash liquidity assets but a significantly positive relationship with cash holdings.

Total Assets: The coefficient of total asset in the above tables is statistically different from zero (0.000>0.01%), indicating that total assets have significant effect on the cash holding. This means that if total asset rises by a one percent, cash holding will go up by about 2.75 percent. However, the result does not align with the trade-off theory which posits a negative relationship between cash holding and total assets of firms. Notwithstanding, these results corroborate with the findings of Borric and Kruja, (2016), that total asset is positively related with cash holding, but contradicts evidence reports that total assets are negatively related with cash holding (Le, Tran, Ta, & Vu 2018; Ghada, 2017; Aiyegbusi & Akinlo, 2016).

Turnover: The turnover results as appeared in the above tables show that turnover is positively related with the firm's size. This means that as the turnover rises, firms hold more cash. Its coefficient is statistically significant at one percent level because the probability value for the Z-statistics is lower than the one percent level of significance (0.648<0.05). This finding is in concord with Wang (2012) while Magginson and Weigg (2010) and Chardwick (2015) found that turnover have positive effect on cash holding.

Conclusion

The study concluded that a significant correlation exist between firm size and cash holding decisions. Larger firms with higher assets and turnover tended to maintain larger cash reserves, underscoring the importance of considering firm size in understanding cash management practices within the industry.

Recommendations:

1. Firms should carefully plan their total asset to enhance productivity and control acquisition costs.
2. Emphasis should be placed on effective working capital management to capitalize on low-cost opportunities that will boost turnover for firms.

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