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CASH CONTROL AND THE FINANCIAL PERFORMANCE OF LISTED AGRICULTURAL FIRMS IN NIGERIA

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ABSTRACT

This study examined the effect of cash control on the financial performance of listed agricultural firms in Nigeria over the period 2015 to 2024. Specifically, it investigated the effect of cash and cash equivalents, cash to book value, and cash conversion cycle, on return on assets (ROA) of five agricultural firms listed on the Nigerian Exchange Group. The study adopted a census sampling technique and employed an ex-post facto research design using secondary data obtained from the firms' audited financial statements. Descriptive statistics were used to summarize the data, while panel regression analysis was conducted to test the hypotheses. The study found the following: cash to book value has a significant negative effect on ROA of listed agricultural firms in Nigeria (β = -0.2483; p = 0.0162); cash conversion cycle has a positive but insignificant effect on ROA of listed agricultural firms in Nigeria (β = 0.000030; p = 0.6133); cash and cash equivalents have a significant positive effect on ROA of listed agricultural firms in Nigeria (β = 0.0903; p = 0.0000). In conclusion, holding excessive cash relative to equity may be counterproductive, possibly signaling inefficient use of shareholder capital or a reluctance to reinvest idle funds into productive operations. The study recommends that Chief Financial Officers (CFOs) of agricultural firms should minimize idle cash relative to book value by channeling excess liquidity into value-adding investments that can improve asset productivity and enhance shareholder returns.

Key words: *Cash and Cash Equivalent, Cash Control, Cash Conversion Cycle, Cash to Book Value, Financial Performance.*

INTRODUCTION

The agricultural sector plays a vital role in the Nigerian economy, contributing significantly to employment, food security, and GDP. In the dynamic and increasing business environment, effective financial management has become crucial for firm survival and growth. Cash control one of the key areas of financial management involves overseeing, monitoring, and regulating

cash flows within an organization plays a crucial role in ensuring liquidity, preventing fraud, and supporting strategic decision making. Despite this importance, listed agricultural firms in Nigeria continue to struggle with achieving consistent financial growth and sustainability. One of the core challenges facing these firms is the effective management and control of cash. Other challenges range from poor infrastructure, climate variability, market inefficiencies, policy instability, insufficient resources, and exchange rate volatility. These issues often emerge into erratic cash flows, and increasing difficulties in liquidity management. Listed agricultural firms, while generally more structured than their non-listed counterparts, still involved in difficulties of maintaining strong internal control systems that safeguard cash and enhance financial performance. Sound cash control practices, including budgeting, internal cash audits, cash reconciliation, and segregation of duties, are essential to maintain operational stability and profitability. In developed economies, cash control mechanisms such as automated cash flow monitoring, stringent internal controls, and digital payment systems have been widely adopted to enhance financial efficiency (Jones & Roberts, 2022). Effective cash control ensures that a firm maintains adequate liquidity to meet it's obligations as well avoiding excessive idle cash that could be invested. However, in most Nigerian agricultural firms, cash resources are either underutilized or poorly managed, leading to liquidity challenges, delay operations, and declining financial performance. Cash control is more significant to agricultural sector especially in developing country like Nigeria due to the seasonal nature of production, irregular revenue streams, high exposure to risk, and reliance on external financing. Globally, firms that implement effective cash control strategies tend to have better financial performance, as they can meet short-term obligations, reinvest in operations, and sustain profitability (Smith & Kim, 2022).

Key proxies of cash control include cash to book value, which signal how much cash is held relative to the company's total value; cash and cash equivalent, which reflect a firm's short-term liquidity position; and the cash conversion cycle, which measures the time it takes for a firm to convert investments in inventory into cash flows from sales. Although these metrics provide useful hint into a firm's cash management practices, there is limited empirical evidence on how they influence financial performance in Nigerian agricultural sector. Firm's performance is a description of level of fulfilled task of business aim or target to obtain output conclusion at the end of a business period (Yildiz, 2010). Financial performance is a complete evaluation of a company's overall standing in categories such as asset, liabilities, equity, expenses, revenue, and overall profitability. Return on Asset was used as a proxy for financial performance.

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Agricultural sector has remained a strategic site of Nigerian economy. Despite the strategic importance, many listed agricultural firms continue to experience suboptimal financial performance. Moreover, in the Nigerian economy that's characterized by economic volatility, regulatory challenges, and institutional weaknesses, the absence of effective cash control mechanisms can significantly undermine firm performance. It is therefore inevitable that efficient cash control is essential for ensuring liquidity, solvency, and long-term profitability. Indicators such as cash to book value, cash conversion cycle, and cash and cash equivalents provide a hints on how efficient firms managed their cash resources. Although, it remain uncertain how these cash control variables influence the financial performance of agricultural firms in Nigeria. Specifically, a lack of clarity persists on whether high levels of cash holdings translate into improved performance, or whether inefficiencies in converting cash through operations contribute to low financial outcomes. This knowledge gap raises an eyebrow about the alignment between cash control practices and financial sustainability in the agricultural firm.

Objectives

The study seeks to investigate the impact of cash control on the financial performance of listed Agricultural firms in Nigeria. Specifically, the study seeks to:

1. evaluate the effect of cash and cash equivalent on the return on asset of listed agricultural firms in Nigeria.
2. ascertain the effect of cash to book value on the return on asset of listed agricultural firms in Nigeria.
3. determine the effect of cash conversion cycle on the return on asset of listed agricultural firms in Nigeria.

LITERATURE REVIEW

Concept of Cash control

Cash control focuses on optimizing liquidity and balancing short term assets and liabilities. Effective cash control is vital for the financial health and performance of agricultural firms. It is one of the key element for ensuring a company's financial stability and solvency (Hansen, 2005). Cash control refers to the dealing with cash balances held by a company at a particular time cash flow in and out of the firm (Deb, Dey and Shil, 2015). Optimal cash control involves a combination of strategies, policies, and internal controls aimed at optimizing cash inflows and outflows to support operational efficiency and financial stability (Nguyen & Pham, 2020).

Aliu and Umar (2019), discovered that excess cash holdings can either improve or reduce performance depending on the firm's efficiency. The main goal of cash control practices is to reduce the percentage of liquid asset held by company in order to fulfill their ongoing activities and to achieve a sufficient level of cash holdings to explore the company to obtain trade discount, achieve acceptable credit rating, and to meet unexpected cash requirement (Brigham, Gapenski, & Daves, 2003).

Cash control refers to the set of procedures, policies, and practices that an organization adopts to manage, monitor, and safeguard its cash resources (Deb, Dey & Shil, 2015). It ensures that all cash inflows and outflows are properly recorded, securely handled, and utilized in a responsible manner. The goal is to minimize the risk of loss, fraud, or mismanagement while maintaining accurate records for decision-making and accountability. Effective control over cash helps maintain operational efficiency by ensuring there is always enough available to meet daily obligations such as salaries, purchases, and utility bills (Okeke & Nworie, 2025). It also supports long-term planning by making it possible to forecast cash needs, schedule investments, and manage liabilities with greater accuracy.

Proper cash control reduces the likelihood of financial discrepancies, which can damage an organization's credibility and invite regulatory scrutiny. It helps in creating a system where every transaction involving cash is authorized, recorded, and reconciled regularly (Prabowo et al., 2024). By doing so, companies can detect errors, unauthorized withdrawals, or irregularities before they become serious problems. Moreover, having a solid cash control system allows managers to evaluate how efficiently cash is being used. If large sums of idle cash are found, steps can be taken to invest or allocate it more productively. Conversely, frequent shortfalls might indicate overspending or poor collection practices. In this way, cash control is not only about prevention and security but also about promoting better financial management and resource allocation.

Cash and Cash Equivalent

Cash and cash equivalent refers to the sum of a company's cash holdings and any short-term, highly liquid assets that can be quickly converted into cash with minimal risk of loss (Gracias & Osesoga, 2024). These resources are readily available and serve as the most immediate form of financial liquidity. They are the means through which a business can meet its immediate financial obligations or seize urgent opportunities without delay. Cash and cash equivalent represents the foundation of financial flexibility (Al-Shammari & Al-Yahya,

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2021). Cash is the most accessible asset a company can have, while cash equivalents include instruments that are nearly as liquid as cash, such as treasury bills or money market funds. The combination of these forms a picture of how well-positioned an organization is to address sudden needs, support operations, or weather economic uncertainty.

When businesses run low on liquid assets, they may be forced to borrow or sell off long-term investments to stay afloat (Rehman et al., 2021). Therefore, the amount of available cash and equivalents signals not just operational preparedness but also financial resilience (Gracias & Osesoga, 2024). Moreover, this concept is often used to gauge the financial health of a company. Investors, creditors, and managers look closely at the level of cash and equivalents to judge whether a firm is managing its funds wisely. It shows whether the company can support current activities without depending on uncertain future revenue. Even a profitable business can face trouble if it lacks enough readily available resources to pay its immediate bills (Arlov, Rankov & Kotlica, 2013). Thus, the term refers to the most essential financial cushion a business holds. It is the amount of money a company can access immediately, without barriers or waiting periods, and it plays a central role in short-term survival and long-term stability.

H_{01}: *Cash and cash equivalents have no significant effect on return on asset of listed agricultural firms in Nigeria.*

Cash to Book Value

Cash to book value refers to a financial ratio that compares a company's total cash or cash equivalents to its book value. The book value represents the net value of a company's assets as recorded on the balance sheet, subtracting liabilities from total assets (Praptomo et al., 2024). This ratio is used to evaluate how much of a company's stated net worth is made up of highly liquid cash assets. Cash to book value gives hints into the financial liquidity and safety of a company. A higher cash to book value ratio suggests that a significant portion of the company's equity is held in cash form, which can be a positive signal of solvency and readiness to meet obligations without depending heavily on receivables or inventory. It may also suggest that the company is in a strong position to seize opportunities, such as acquisitions or expansions, without needing external financing.

On the other hand, a low cash to book value could mean that the company's value is largely tied up in less liquid assets or that it is heavily leveraged. This might raise concerns about the company's ability to respond quickly to financial stress or unexpected expenses. However,

interpretation depends on industry norms and company strategy. Some businesses, especially capital-intensive ones, operate successfully with lower cash reserves because their value lies in physical assets rather than liquidity. The cash to book value ratio is especially relevant to investors seeking to assess risk and evaluate the underlying stability of a company's financial structure. It helps distinguish between firms with real, accessible wealth and those with more theoretical or illiquid asset values. While not a standalone measure of financial health, it complements other indicators and adds depth to the assessment of a company's balance sheet strength. In essence, cash to book value highlights how much of a company's stated equity can be accessed or mobilized quickly, offering a glimpse into both security and strategic flexibility.

H_{02}: Cash to book value has no significant effect on return on asset of listed agricultural firms in Nigeria.

Cash Conversion Cycle

The cash conversion cycle is the length of time it takes for a business to convert its investments in inventory and other resources into cash flows from sales (Johan et al., 2024). It represents the period between when a company pays for the materials used to produce goods and when it receives payment for selling those goods. This measure captures how efficiently a company manages the flow of money through its operational activities (Akpadaka & Edeh, 2024). This concept recognizing that businesses do not instantly receive cash from the goods they sell. There is often a delay between spending money on supplies and collecting cash from customers. The cash conversion cycle tracks the duration of that delay. It reflects how quickly a company can turn its products into revenue and then into liquid funds (Ghabban et al., 2024).

This definition matters because the timing of cash movement affects a company's ability to pay its own obligations, reinvest in operations, or respond to unexpected financial demands. A shorter cash conversion cycle indicates that a business can recover its cash quickly and use it again without relying too heavily on external financing (Johan et al., 2024). A longer cycle might suggest that funds are tied up for extended periods, which could create strain or expose the company to financial risks. By looking at the cash conversion cycle, one can form an idea of how effectively a business is managing its operational timing and working capital (Akpadaka & Edeh, 2024). It speaks to how well the company is coordinating its buying, production, and selling processes. Although different industries operate on different timelines, the concept itself remains consistent: it measures the gap between outgoing and incoming

cash as it moves through everyday operations. The cash conversion cycle is a reflection of how fluidly a company handles its money during the normal course of business.

H_{03}: Cash conversion cycle has no significant effect on return on asset of listed agricultural firms in Nigeria.

Financial Performance

Financial performance refers to the overall measure of how well an organization is using its financial resources to achieve its goals (Nworie, Onyeka & Anaike, 2023). It reflects the company's ability to generate revenue, control costs, and produce profits over a certain period (Siminica, Circiumaru & Simion, 2012). By analyzing financial performance, stakeholders can determine the financial health and viability of a business. Financial performance involves a broader evaluation of how efficiently an entity manages its assets, liabilities, and equity to create value. Financial performance shows whether the company is growing, maintaining stability, or declining. It provides a basis for comparing a company's current state to past performance, industry standards, and competitor benchmarks (Mubeen, Iqbal & Hussain, 2014).

In practical terms, financial performance is assessed using various financial statements, such as the income statement, statement of financial position, and cash flow statement. These documents help in understanding the relationship between income and expenses, the structure of assets and debts, and the flow of funds in and out of the organization. However, the concept itself is about interpreting these results to determine whether the business is progressing as intended. Sound financial performance indicates that the company is managing its operations effectively, attracting investors, and maintaining or increasing shareholder value (Nworie, Okafor & Mba, 2023). Poor performance, on the other hand, may signal inefficiencies, market problems, or poor strategic decisions. Thus, financial performance serves as a vital communication tool between a business and its owners, lenders, regulators, and partners. Thus, financial performance is an essential indicator of an organization's economic strength and potential for future success. It provides the evidence needed for strategic planning, funding decisions, and policy development.

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Return on Asset

Return on asset is a financial measure that expresses how much profit a company earns in relation to the total value of its assets (Nworie & Mba, 2022). It shows how effectively an organization is using the resources it owns to generate earnings (Siminica, Circiumaru & Simion, 2012). This ratio translates the connection between what a business owns and what it earns into a single figure, revealing the level of efficiency with which its assets are employed. Every company owns a set of assets—whether in the form of buildings, machines, inventory, or other resources. This concept captures how well those assets are being used to produce profit. A high return suggests that the company is generating more income for each unit of asset it controls, while a low return indicates that the business may not be using its resources as productively as it could (Mubeen, Iqbal & Hussain, 2014).

Return on asset provides a meaningful look at the relationship between effort and result within an enterprise. It offers a lens through which to assess whether a business is managing its resources wisely or letting them sit idle (Nworie & Mba, 2022). If a company invests heavily in equipment, for example, and does not see an appropriate rise in profit, the return on asset will reflect that inefficiency. Furthermore, return on asset is valuable when comparing companies in the same industry, especially those of different sizes. It equalizes the measure of performance by focusing on output relative to input, rather than absolute profit figures. It shows how much profit is generated for every unit of asset value, regardless of the company's scale (Siminica, Circiumaru & Simion, 2012).

Theoretical Review

The Liquidity Preference Theory was developed by the British economist John Maynard Keynes in 1936, as part of his landmark publication, The General Theory of Employment, Interest and Money (Bibow, 2013). Keynes introduced this theory to explain the relationship between interest rates and the demand for money in an economy. He challenged the classical view that interest rates were determined purely by savings and investment, proposing instead that people's preference for holding money, liquidity, was a significant factor influencing interest rates and overall economic activity. The theory is based on the idea that individuals and businesses prefer to hold their wealth in liquid form rather than investing it, unless they are compensated for giving up liquidity through interest (Asensio, 2017). Keynes identified three primary reasons why people demand money: for transactions, to meet day-to-day needs; for precaution, to prepare for unforeseen events; and for speculation, to take advantage of future changes in interest rates or investment opportunities. According to this theory, the

demand for money is not fixed but varies based on income levels, economic conditions, and expectations about future interest rates. When liquidity preference is high, interest rates tend to rise because people are less willing to lend or invest without higher compensation (Bibow, 2013).

This theory is particularly relevant to the study of the effect of cash control on financial performance of firms in Nigeria. In an environment where economic conditions can be unpredictable and access to external financing may be limited, businesses that maintain proper control over their cash are better positioned to manage operational needs and respond to unexpected challenges. Liquidity preference highlights the importance of holding and managing cash effectively. Firms that understand and apply the principles of liquidity preference are more likely to maintain a healthy balance between liquidity and investment, which can lead to improved financial performance. By keeping adequate liquid resources through effective cash control, Nigerian firms can protect themselves from financial shocks and maintain stability in a volatile business environment.

Empirical Review

Numerous empirical studies have investigated the effect of cash control and management on financial performance across different sectors in Nigeria. The consensus across most findings is that while cash management is a significant factor in influencing performance, the direction and magnitude of this influence vary depending on the specific sector, the cash-related variables examined, and the performance indicators adopted.

In the service sector, Oluwaseun (2024) found that cash ratio had a positive and significant effect on profit margin, while cash turnover had a negative and insignificant effect, suggesting that liquidity levels play a more critical role in profitability than the velocity of cash flow in service firms. This aligns with the results of Omotunwase (2024) who studied deposit money banks and concluded that cash management significantly influences both return on assets (ROA) and return on equity (ROE).

In contrast, mixed results were found in the industrial goods sector. Osarobo, Sunny, and Gina (2024) observed that both cash and cash equivalents and cash turnover significantly influenced ROA, although the effect of cash and cash equivalents was negative, indicating the potential downsides of holding excessive idle cash. Meanwhile, Wokeh and Nmehielle (2023), in their study on the agricultural sector, found that cash and cash equivalents had a

significant positive effect on ROA, but not on ROE, while cash turnover had no significant effect on either. Nkiru and Daniel (2023) reinforced the importance of internal factors by showing that cash flow and growth opportunities positively influence cash holdings, whereas leverage has a negative effect on cash and cash equivalents in the same sector.

A number of studies in the banking sector reported weaker or insignificant relationships. Ubesie et al. (2023) found that cash and cash equivalents had a statistically insignificant and negative effect on ROA, while Peter et al. (2020) also observed a negative relationship between cash and total assets and financial performance. Similarly, Adesina and Adewumi (2022) reported positive but statistically insignificant effects of various liquidity ratios on return on capital employed. These results suggest that the effectiveness of cash control in the banking sector might be undermined by over-liquidity or regulatory constraints.

In the breweries sector, Jonah, Aaron, and Jack (2023) found a positive relationship between cash conversion cycle and both net profit margin and return on capital employed, but a negative significant relationship between creditors' payment period and profit margin. These findings highlight the delicate balance between extending payables and maintaining liquidity for profitability.

In terms of cash flow categories, several studies emphasized the differentiated impact of operating, investing, and financing activities. For instance, Boluwatife (2022) found that operating cash flow had a positive and significant impact on ROA in the consumer goods sector, while both investing and financing cash flows showed negative and insignificant effects. This aligns with Ogiriki et al. (2020), who reported positive relationships for operating and investing cash flows, but a negative relationship for financing cash flow. Similarly, John and Ohazuluike (2021) found all three cash flow categories—operating, investing, and financing activities—to significantly affect profit in the food and beverage sector. Omaliko et al. (2023) also confirmed the significant effect of operating and financing activities on firm performance (measured by net assets per share), further establishing the relevance of activity-based cash segmentation in performance analysis.

In the manufacturing sector, Uchegbu et al. (2023) revealed that abnormal cash flow and abnormal production cost both had significant and positive effects on cash value added, indicating that proactive and strategic manipulation of cash flows can enhance firm performance. Likewise, Dibie (2022) reported positive and significant effects of cash conversion cycle, creditors' payment period, and cash flow margin on firm performance,

highlighting the importance of timing and margin efficiency in cash-related decisions. On a related note, Mmaduka et al. (2022) found that inventory turnover, collection period, and payment period all had significant but negative effects on the debt-to-equity ratio, suggesting that improved cash cycles can help firms rely less on debt financing.

On the other hand, some sectors reported no significant relationship between cash management and financial outcomes. Eta (2023) found no significant relationship between cash management and earnings per share or net profit in the construction sector, suggesting sector-specific constraints or different cash utilization strategies. This aligns with Omopariola et al. (2021) who, in the South African construction context, noted a lack of consensus on cash-related performance indicators.

Also, Eton et al. (2019), studying business firms in Northern Uganda, found an insignificant relationship between cash management and financial performance, indicating that the strength of the relationship may depend on broader regional or macroeconomic contexts beyond firm-level management alone.

There is currently a growing volume of research on the relationship between cash management and financial performance. However, much of the existing empirical evidence concentrates on sectors like banking, manufacturing, construction, and consumer goods, with limited attention to the agricultural sector in Nigeria. Scholars such as Oluwaseun (2024), Omotunwase (2024), Osarobo, Sunny and Gina (2024), and Ubesie, Ananwude, Mbanefo, and Echekoba (2023) examined service firms, deposit money banks, industrial goods firms, and banks respectively, but did not address agricultural firms, which face unique financial and operational risks. Although Wokeh and Nmehielle (2023) considered listed agricultural firms, their study did not fully account for the effect of specific cash control proxies such as cash to book value and the cash conversion cycle. Similarly, the findings across the literature remain inconclusive, with studies such as Jonah, Aaron and Jack (2023), Dibie (2022), and Boluwatife (2022) reporting both significant and insignificant relationships between elements of cash control and firm performance, depending on the sector and financial indicators used.

Furthermore, many prior studies utilized general cash flow components or cash management metrics, neglecting more targeted variables such as the cash conversion cycle and cash to book value, which can provide more hints into how firms manage liquidity efficiency and resource allocation. For example, while Peter, Njoku, Ugoani, Nwaorgu, and Ukeje (2020), Adesina and Adewumi (2022), and Ogiriki, Atagboro and Ogoun (2020) emphasized general

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cash ratios and cash flow categories, they did not explore these more refined proxies. Moreover, few studies, including that of Nkiru and Daniel (2023), focused on the determinants of cash holdings in agriculture without assessing their direct impact on financial performance. The present study addresses this gap by examining the specific influence of cash and cash equivalents, cash to book value, and cash conversion cycle on return on assets within the agricultural sector, a domain that remains underexplored despite its relevance to Nigeria's economy. By concentrating on a ten-year period (2015–2024) and employing sector-specific financial data, this research aims to bridge the gap in the literature and offer a more contextualized understanding of cash control in Nigerian agricultural firms.

MATERIALS AND METHOD

The study employed an ex-post facto research design. This design is considered appropriate because the study seeks to investigate cause-effect relationships using historical financial data without any form of manipulation by the researcher. In this case, the variables of interest—cash and cash equivalents, cash to book value, and cash conversion cycle, and return on assets—have already occurred and are recorded in the financial statements of the firms. Ex-post facto design is ideal for studies in accounting and finance where the independent variables cannot be manipulated due to their historical nature. It provides a framework for drawing inferences about the effects of cash control on firm performance over time. The population of the study comprises all listed agricultural firms on the Nigerian Exchange Group (NGX) as of 2024. However, due to the limited number of agricultural firms listed on the exchange, a purposive sampling technique was adopted to select five (5) firms that have consistently reported financial statements during the study period (2015–2024). The selected firms are:

1. Ellah Lakes Plc
2. FTN Cocoa Processors Plc
3. Livestock Feeds Plc
4. Okomu Oil Palm Plc
5. Presco Plc

The sample for this study comprises all five agricultural firms listed on the Nigerian Exchange Group (NGX) as of 2024, namely Ellah Lakes Plc, FTN Cocoa Processors Plc, Livestock Feeds Plc, Okomu Oil Palm Plc, and Presco Plc. Given the relatively small number of listed agricultural firms in Nigeria, the study adopts a census sampling technique, which involves

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including the entire population in the sample. This approach ensures comprehensive coverage and eliminates sampling bias, thereby enhancing the validity and generalizability of the findings within the agricultural sector. The study made use of secondary data obtained from the audited annual financial statements of the selected firms. These data were sourced from the Nigerian Exchange Group (NGX), and the official websites of the firms. The data span a ten-year period from 2015 to 2024 and include key financial statement items required for computing both the dependent and independent variables. The use of secondary data is justified due to its reliability, comparability, and cost-effectiveness in longitudinal and financial studies.

To ensure clarity and precision in empirical analysis, the variables in the study are measured as follows:

Table 1 Measurement of Variables

Variable	Type	Measurement
Return on Assets (ROA)	Dependent	Net Income ÷ Total Assets
Cash and Cash Equivalents (CCE)	Independent	Natural log of cash and cash equivalent as reported in financial statements (usually under current assets)
Cash to Book Value (CBV)	Independent	Cash and Cash Equivalents ÷ Book Value of Equity
Cash Conversion Cycle (CCC)	Independent	Days Inventory Outstanding + Days Sales Outstanding − Days Payables Outstanding

Source: Researcher's Compilation (2025)

The model used in this study is based on panel data regression, which accounts for both cross-sectional (firm-level) and time-series (yearly) dimensions of the data. The general functional form of the regression model is specified as follows:

$ROA_{it} = \beta_0 + \beta_1 CCE_{it} + \beta_2 CBV_{it} + \beta_3 CCC_{it} + \mu_i + \varepsilon_{it}$ ……. Eqn 1.

Where:

ROA_{it} = Return on Assets of firm *i* at time *t*

CCE_{it} = Cash and Cash Equivalents of firm *i* at time *t*

CBV_{it} = Cash to Book Value of firm *i* at time *t*

CCC_{it} = Cash Conversion Cycle of firm *i* at time *t*

μ_i = Time-invariant firm-specific effect

ε_{it} = Error term

β_0 = Intercept

$\beta_1, \beta_2, \beta_3$ = Coefficients of the respective independent variables

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The study adopts a two-pronged approach to data analysis: descriptive analysis and inferential analysis. Firstly, descriptive statistics including the mean, standard deviation, minimum, and maximum values are computed for each variable to understand the central tendencies and dispersion within the data. This preliminary analysis shows the structure and behavior of the data over the study period and among the different firms. Secondly, panel regression analysis was employed to test the hypotheses and determine the effect of the independent variables on the dependent variable. Given the panel nature of the data (cross-sectional over time), panel regression was considered most appropriate for the study. The panel regression is carried out using Eviews which is robust in handling time-series cross-sectional datasets. All hypotheses were tested at a 5% level of significance ($\alpha = 0.05$). The decision rule is defined as follows:

- Reject the null hypothesis if p-value < 0.05.
- Fail to reject the null hypothesis if p-value ≥ 0.05.

RESULT AND DISCUSSIONS

This study examined the effect of cash control on the financial performance of selected agricultural firms in Nigeria over the period 2015 to 2024. Specifically, it investigated the effect of cash and cash equivalents, cash to book value, and cash conversion cycle on return on assets (ROA) of five agricultural firms listed on the Nigerian Exchange Group (see Appendix A for the data presentation).

Descriptive Analysis

Table 2 Descriptive Analysis

	ROA	CCE (₦'000)	CBV	CCC
Mean	0.004214	2949175.	0.108664	17.99080
Median	0.023531	314976.0	0.072991	2.792853
Maximum	0.341408	25354481	0.463397	534.2823
Minimum	-0.803813	77.00000	-0.034882	-498.4847
Std. Dev.	0.196621	5517693.	0.118060	168.0744
Skewness	-1.385512	2.661185	1.175912	-0.567304
Kurtosis	7.237857	9.917643	3.753308	5.779224
Jarque-Bera	53.41249	158.7113	12.70531	18.77379
Probability	0.000000	0.000000	0.001742	0.000084
Sum	0.210685	1.47E+08	5.433183	899.5402
Sum Sq. Dev.	1.894325	1.49E+15	0.682967	1384201.
Observations	50	50	50	50

Source: Author's Computation Using Eviews 11 (2025)

The descriptive statistics for Return on Assets (ROA) in Table 2 reveal important hints into the financial performance of the selected agricultural firms in Nigeria between 2015 and 2024. The mean ROA is 0.004214, indicating that on average, the firms generated a very low return

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on their total assets during the period. The maximum ROA recorded is 0.341408, suggesting that in the best-performing year, a firm earned about 34.1% return on its assets. In contrast, the minimum ROA is -0.803813, indicating that at least one firm in a particular year experienced a significant loss, with negative returns exceeding 80% of total assets. The standard deviation of 0.196621 implies high variability in profitability among the firms across the years. The skewness value of -1.385512 confirms a strong leftward skew, showing that more firms had lower or negative returns. The kurtosis value of 7.237857 indicates a leptokurtic distribution with fat tails, suggesting extreme values or outliers are present. The Jarque-Bera statistic of 53.41249 with a p-value of 0.000000 confirms that the ROA data is not normally distributed, which may affect parametric analyses and justifies robust estimation techniques.

The statistics for Cash and Cash Equivalents (CCE), which were log-transformed in the analysis but are reported in their raw values in Table 2, the mean is ₦2,949,175, indicating that, on average, firms held approximately ₦2.95 million in liquid cash or near-cash assets annually. The maximum CCE value is a significant ₦25,354,481, suggesting that some firms maintained substantial liquidity positions during certain years. In contrast, the minimum CCE is just ₦77, reflecting a severe liquidity constraint in at least one firm-year. The high standard deviation of ₦5,517,693 indicates a wide dispersion in liquidity levels across firms and years. Skewness is 2.661185, showing a strong positive skew where most firms held relatively lower cash balances, with a few exhibiting very high values. The kurtosis of 9.917643 points to a highly leptokurtic distribution with extreme outliers. The Jarque-Bera statistic of 158.7113 with a p-value of 0.000000 provides strong evidence against normality, further confirming the need for log transformation and robust statistical techniques in the regression analysis.

Regarding the Cash to Book Value (CBV) in Table 2 provide an understanding of how cash is maintained in relation to equity value across the sampled firms. The mean CBV is 0.108664, implying that on average, cash and cash equivalents constitute about 10.9% of the firms' book value of equity. The maximum CBV is 0.463397, showing that some firms held cash positions as high as 46.3% of their equity, while the minimum value of -0.034882 suggests that at least one firm recorded a negative cash position relative to equity, possibly due to negative equity. The standard deviation is 0.118060, reflecting moderate variability in cash-to-equity ratios. Skewness is 1.175912, indicating a positive skew — most firms had lower CBV ratios, with a few significantly higher values. The kurtosis of 3.753308 suggests a distribution that is slightly more peaked than normal. The Jarque-Bera statistic of 12.70531 and associated p-

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value of 0.001742 indicate that the distribution of CBV deviates significantly from normality, though less severely than ROA.

Lastly, for Cash Conversion Cycle (CCC), Table 2 shows a mean of 17.99080 days, suggesting that on average, the firms take approximately 18 days to convert their investments in inventory and other resources into cash flows from sales. However, the CCC values range widely, with a maximum of 534.2823 days and a minimum of -498.4847 days. The negative value implies that some firms were able to collect cash from sales before paying their suppliers, a highly efficient working capital scenario. The large standard deviation of 168.0744 underscores significant inconsistency in working capital management practices among the firms. The skewness of -0.567304 reflects a modest leftward skew, indicating that more firms had shorter-than-average CCCs. The kurtosis of 5.779224 shows a leptokurtic distribution, again suggesting the presence of extreme values. The Jarque-Bera value of 18.77379 with a probability of 0.000084 confirms the presence of non-normality in the CCC distribution.

Test of Hypotheses

The data on cash and cash equivalent were transformed into natural logarithm in order to stabilize the variance in the regression estimates.

Table 3 Test of Hypotheses

Dependent Variable: ROA
Method: Panel EGLS (Cross-section weights)
Date: 07/09/25 Time: 10:39
Sample: 2015 2024
Periods included: 10
Cross-sections included: 5
Total panel (balanced) observations: 50
Linear estimation after one-step weighting matrix
White period standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCE	0.090306	0.019871	4.544503	0.0000
CBV	-0.248316	0.099526	-2.494994	0.0162
CCC	0.000030	0.000059	0.508851	0.6133
C	-0.427949	0.105940	-4.039557	0.0002

Weighted Statistics

R-squared	0.456903	Mean dependent var	0.067169
Adjusted R-squared	0.421483	S.D. dependent var	0.231068
S.E. of regression	0.164270	Sum squared resid	1.241295
F-statistic	12.89978	Durbin-Watson stat	1.394835

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Prob(F-statistic)	0.000003

Source: Author's Computation Using Eviews 11 (2025)

The findings presented in Table 3 are based on a panel EGLS regression model with cross-sectional weights, covering data from 2015 to 2024 across five listed agricultural firms in Nigeria. The model includes 50 balanced panel observations. The Adjusted R-squared is 0.4215, indicating that approximately 42.15% of the variation in Return on Assets (ROA) is explained jointly by the independent variables: Cash and Cash Equivalents (CCE), Cash to Book Value (CBV), and Cash Conversion Cycle (CCC). This demonstrates moderate explanatory power of the model in capturing factors that influence firm profitability. The Prob(F-statistic) is 0.000003, which is highly significant at the 5% level. This suggests that the model as a whole is statistically valid and that at least one of the independent variables has a statistically significant effect on ROA. Thus, the null hypothesis that the model has no explanatory power is rejected.

The constant term (C) is -0.4279 (p = 0.0002). This coefficient represents the average ROA when all independent variables are zero, although such a scenario may not be economically realistic. The negative and significant constant suggests that in the absence of CCE, CBV, and CCC, firms would experience a negative return on assets.

Hypothesis One

H_{01}: Cash and cash equivalents have no significant effect on return on asset of listed agricultural firms in Nigeria.

H_{i1}: Cash and cash equivalents have significant effect on return on asset of listed agricultural firms in Nigeria.

The coefficient for CCE is 0.0903 (p = 0.0000). This suggests that a one-unit increase in CCE leads to a 0.0903 unit increase in ROA, assuming all other variables are held constant. This is a positive marginal effect, indicating that greater availability of liquid assets is associated with increased profitability. The p-value is highly significant (below 0.01), so we reject the null hypothesis (H_{03}) and conclude that Cash and Cash Equivalents have a significant positive effect on ROA. This finding highlights the importance of liquidity in driving firm performance, possibly due to improved financial flexibility or investment capability.

The positive marginal effect reflects the benefits of liquidity: firms with more cash can cover short-term obligations, seize investment opportunities quickly, and maintain smooth

operations during revenue fluctuations—a critical advantage in agriculture, which is prone to seasonal and climatic risks. Liquidity provides flexibility and resilience, both of which contribute positively to asset efficiency and return generation. It also indicates that these firms are not hoarding idle cash but are managing it efficiently to drive value creation and operational stability. This finding aligns with Omotunwase (2024), who established that cash management significantly affects ROA and ROE in deposit money banks, stressing the need for advanced cash flow strategies. Wokeh & Nmehielle (2023) also found a significant positive effect of cash and cash equivalents on ROA in agricultural firms, reinforcing this outcome. Oluwaseun (2024) similarly observed that cash ratio significantly and positively affects profit margin of service firms, confirming the utility of liquid reserves. However, this finding contrasts with Osarobo, Sunny, and Gina (2024), who found that cash and cash equivalents had a negative significant effect on ROA in industrial goods firms—likely reflecting sectoral differences in cash needs and reinvestment behavior. Lastly, Uchegbu et al. (2023) reported a positive effect of abnormal cash flow on firm value, further endorsing the notion that effective liquidity use, not merely the amount, drives financial performance.

Hypothesis Two

H_{02}: Cash to book value has no significant effect on return on asset of listed agricultural firms in Nigeria.

H_{i2}: Cash to book value has significant effect on return on asset of listed agricultural firms in Nigeria.

The coefficient for CBV is -0.2483 (p = 0.0162). This indicates that for every one-unit increase in CBV, ROA decreases by approximately 0.2483 units, holding other variables constant. The negative sign reveals a negative marginal effect, meaning that higher levels of cash relative to book value of equity reduce firm profitability. This effect is statistically significant at the 5% level since the p-value is less than 0.05. Thus, we reject the null hypothesis (H_{01}) and conclude that Cash to Book Value has a significant negative effect on ROA. This suggests that excessive cash holdings relative to equity may reflect inefficiencies or underutilized resources in the firm.

A plausible explanation is the inefficiency in capital allocation—when firms hold excessive idle cash relative to shareholder equity, it signals underutilized resources, opportunity cost of forgone investments, or conservative financial policies that hinder profitability. In agriculture, where investment in production assets and operational inputs is capital-intensive, hoarding

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cash may reflect managerial risk aversion or poor reinvestment strategy. Furthermore, excess liquidity could breed complacency, weakening financial discipline and strategic innovation—hence the negative marginal effect. In support of this finding, Osarobo, Sunny, and Gina (2024) also found a significant negative effect of cash and cash equivalents on ROA of industrial goods firms in Nigeria, emphasizing the risks of holding excessive cash without productive use. Ubesie et al. (2023) echoed this by revealing an insignificant and adverse effect of cash and cash equivalents on ROA in banks, indicating inefficiency in liquidity utilization. Similarly, Nkiru & Daniel (2023) found that leverage negatively relates to cash holdings, reinforcing the argument that excess cash weakens capital structure. However, Oluwaseun (2024) partially disagreed, reporting that while cash turnover was negatively insignificant, the cash ratio had a positive significant effect on service firms' profit margins, suggesting sector-specific cash behavior. Wokeh & Nmehielle (2023) offer a more nuanced perspective, noting no significant effect of cash turnover but affirming a significant effect of cash equivalents on ROA in agriculture—though not necessarily negative—indicating that cash efficiency, not just cash level, may determine the direction of effect.

Hypothesis Three

H_{03}: Cash conversion cycle has no significant effect on return on asset of listed agricultural firms in Nigeria.

H_{i3}: Cash conversion cycle has significant effect on return on asset of listed agricultural firms in Nigeria.

The coefficient for CCC is 0.000030 (p = 0.6133). This means that for each additional day added to the cash conversion cycle, ROA increases by 0.000030 units, assuming other variables remain constant. The effect is positive but extremely marginal—practically negligible in economic terms. More importantly, the p-value is well above the 0.05 threshold, indicating that this effect is not statistically significant. As a result, we fail to reject the null hypothesis (H_{02}) and conclude that Cash Conversion Cycle does not have a significant effect on ROA. This implies that the efficiency of working capital cycles may not be a strong driver of profitability in the agricultural sector over the study period.

Although the positive coefficient suggests that longer CCCs could allow firms more time to manage sales and procurement processes, the lack of statistical significance implies that this operational timing does not materially affect ROA. This could be due to the cyclical and seasonal nature of agriculture, where cash flow patterns are heavily dependent on harvest and

market cycles. The slight positive effect may also reflect the firms' ability to maintain sales and supplier relationships over extended cycles, but not at a level robust enough to drive significant financial gains. Jonah, Aaron, and Jack (2023) similarly found a positive relationship between CCC and financial performance, particularly among breweries, supporting the direction of this finding though not necessarily its insignificance. Likewise, Dibie (2022) observed that CCC had a positive and significant impact on performance of manufacturing firms, reinforcing the argument that efficient working capital cycles can boost returns. In contrast, Mmaduka et al. (2022) discovered that inventory turnover period and related components of CCC negatively and significantly affect capital structure, hinting at potential drawbacks of extended CCCs. Oluwaseun (2024) also reported that cash turnover (a working capital metric) had a negative and insignificant effect on profitability in the service sector—closely aligning with this study's insignificance result. Finally, Wokeh & Nmehielle (2023) found no significant effect of cash turnover on ROA, further validating the current study's finding within the context of the Nigerian agricultural sector.

CONCLUSION AND RECOMMENDATIONS

The findings of this study reveal critical implications for how agricultural firms in Nigeria manage and control cash in relation to their financial performance. The results suggest that cash control is not simply about the presence or absence of liquidity, but about how strategically that liquidity is held and deployed. Specifically, the significant negative effect of cash to book value on return on assets (ROA) implies that holding excessive cash relative to equity may be counterproductive, possibly signaling inefficient use of shareholder capital or a reluctance to reinvest idle funds into productive operations. In agricultural firms, where capital needs are cyclical and often unpredictable, this may point to a risk-averse financial posture that limits growth potential. Conversely, the cash conversion cycle—although theoretically a core component of working capital efficiency—shows an insignificant effect on ROA, suggesting that short-term timing of cash inflows and outflows may be less influential in driving profitability within this sector. This could be due to the long gestation periods and biological cycles in agriculture that reduce the immediate impact of inventory, receivables, and payables on firm performance.

More significantly, the strong positive effect of cash and cash equivalents on ROA demonstrates the critical role of immediate liquidity in enhancing financial performance. This suggests that firms with adequate cash reserves are more capable of responding to operational shocks, capitalizing on short-term investment opportunities, and maintaining uninterrupted

production cycles. In the context of Nigeria's agricultural industry, characterized by infrastructural gaps, climatic uncertainty, and fluctuating market conditions, liquid assets serve as a financial cushion that improves asset utilization and overall firm efficiency. The contrasting effects of different cash variables highlight a nuanced implication: while cash itself is essential for operational flexibility and stability, the structure and proportion of cash relative to other financial indicators determine its impact on profitability.

On the above premise, the study recommends the following:

1. Chief Financial Officers (CFOs) of agricultural firms should minimize idle cash relative to book value by channeling excess liquidity into value-adding investments that can improve asset productivity and enhance shareholder returns.
2. Operations and Treasury Managers need to critically review and optimize components of the cash conversion cycle, particularly inventory turnover and receivables management, to strengthen cash flow efficiency over time, even if current effects appear statistically insignificant.
3. Board Members and Executive Management should ensure the firm consistently maintains adequate cash and cash equivalents as a strategic liquidity buffer to support operational continuity and sustain profitability amidst sector-specific uncertainties.

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