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# LEVEL OF CASH HOLDINGS AMONG LISTED INSURANCE FIRMS ON NIGERIA EXCHANGE GROUP: FIRM LEVERAGE AND INVESTMENT OPPORTUNITIES EFFECT

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## ABSTRACT

*The study ascertained the level of cash Holding among listed insurance firms on Nigeria Exchange group. The specific objective was to examine the effect of leverage and investment opportunities on cash and cash equivalents of insurance firms listed in Nigeria Exchange Group (NGX). The research design used in this study is an ex-post facto. The population of the study was made up of fifteen (15) listed insurance firms in Nigeria from which a sample of ten (10) was selected using purposive sampling. This study relied on secondary data that were obtained from the annual audited financial statements of the sampled firms from 2013 to 2022. The hypotheses testing was done using estimation from Panel Error Component Generalized Least Squares at 5% significance level. The study found the following: leverage has a significant negative effect on cash holding of listed insurance firms in Nigeria (p-value = 0.0000); and investment opportunities have a significant positive effect on cash holding of listed insurance firms in Nigeria (p-value = 0.0000). The study recommends among others that the management of listed insurance firms in Nigeria should implement prudent debt management policies and strategies to ensure that debt levels are sustainable and do not excessively constrain cash flow or financial flexibility.*

***Key words:*** *Cash and Cash equivalent, Investment opportunity, Leverage.*

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## 1. INTRODUCTION

The existence of leverage and investment opportunities in insurance companies is very interesting to study, especially with regards to cash holding. This is because insurance companies manage their cash level and investment opportunities through a strategic approach that involves leveraging premiums received from policyholders (Knox & Sørensen, 2024). Insurance companies utilize the premiums collected from policyholders to invest in various assets, creating a pool of cash and invested assets. This allows insurers to earn returns on the premiums while they wait to pay out claims. Leverage is the application of debt financing and borrowed capital to increase firms' operation and profitability (Horsefall, 2019). It involves the use of debt to finance operations or investments by a company (Daruwala, 2023).

Highly leveraged companies describe the ability of a company to get funds from external sources by issuing debt to get cash. Such a company may have lower cash holdings. This is because they need to allocate a portion of their cash flow to debt servicing and interest payments. This is in line with previous works conducted by Bojana et.al (2022), Amahalu (2019) which found that leverage has negative influence on cash holding. But Maheswar and Rabindra (2019) found leverage to have a positive influence on cash holding. It could also be argued that Investment opportunities plays a crucial role in corporate finance, shaping how a company manages its earnings. Investment opportunities are potential investments that offer the possibility of financial gain, including assets such as stocks, bonds, mutual funds, and real estate. (Patsnap,2023). Investment opportunities also refer to the potential avenues through which individuals or organizations can invest their capital to generate returns (U.S.-Nigeria Business Council. n.d.). These opportunities are evaluated based on their expected returns, associated risks, and liquidity, and can arise across various sectors influenced by macroeconomic factors like interest rates and inflation (Patsnap,2023). Mohammadi, Kardan, and Salehi, (2018) finds that firms tend to increase their cash holdings when they lack viable investment opportunities.

Cash holdings refer to the portion of liquid assets that a firm maintain to cover potential operating losses and fund future investments (Jiang & Wu 2022). It is also any liquid investments, including cash and cash equivalents, that a firm retains to manage its liquidity needs and capitalize on investment opportunities (Erik 2022; Ezenwafor, Okegbe & Nwoye, 2021). However, holding excessive cash can represent an opportunity cost, as it does not generate returns (Eneh, Okegbe & Amhalu, 2019). Agency theory emphasizes that firms may hold cash to reduce agency conflicts by providing a buffer that limits managers' ability to engage in value-destroying investments or misuse funds for personal gain (Ai, Frank, & Sanati, 2023). This precautionary measure helps ensure that cash is available for legitimate business needs rather than being squandered on inefficient projects. The trade-off theory is a financial theory that suggests that a company should balance the costs and benefits of various sources of financing, such as debt and equity, in order to achieve an optimal capital structure (Kraus & Litzenberger, 2023). The management of cash holdings is a critical aspect of financial strategy for insurance companies, as it directly influences their operational efficiency and capacity to meet obligations. Insurers are often required to maintain certain level of cash reserves to ensure they can meet future claims. However, insurance companies often face unique challenges in balancing their cash reserves with the need for leveraging debt

to finance investments. leverage can provide necessary capital for investment opportunities that enhance growth and profitability, but excessive reliance on debt may lead to increased financial risk, compelling firms to maintain higher cash reserves as a precautionary measure against potential liquidity crises.

This duality creates a complex dynamic wherein the optimal level of cash holding and is influenced by both the degree of leverage and the availability of profitable investment opportunities. When firms implement efficient cash management practices, they can balance leverage and investment opportunities, enhancing their financial stability and flexibility in uncertain markets (Pillai, Arickal & Dilraj, 2024). Consequently, determining the optimal level of cash holdings has garnered attention from executives and investors alike (Willian & Fauzi, 2013). The goal is to maintain sufficient liquidity without excess cash that could diminish profitability or competitive positioning. This study focuses on investigating the effect of Leverage and Investment Opportunities on cash holding levels in Insurance firms listed on the Nigeria Exchange Group (NGX). Several studies Davidson and Rosmita (2020), Qian Pengyu (2021), Ernie (2020), Henry and Viriany (2023), Mouline and Sadik (2021) Nnado, Onyeka, and Ugwu (2020), and Rashid, Riaz, and Raiz (2022), has examined cash holdings in manufacturing and agricultural sectors, there remains a gap in literature regarding Insurance firms in Nigeria. This study aims to address this gap by investigating the effect of Leverage and Investment Opportunities on cash holding levels in Insurance firms listed on the (NGX) from 2013 to 2022, considering factors such as, investment opportunities, and leverage. Understanding these characteristics is critical for stakeholders and future users of financial information, as it informs optimal cash balance maintenance strategies in these firms.

### 1.1 Objectives

The major objective of this study was to investigate the level of cash holding on Insurance firms listed in Nigerian Exchange group. The specific objectives were designed to:

1. ascertain the effect of leverage on cash and cash equivalents of non- financial firms listed in Nigeria Exchange Group (NGX).
2. investigate the effect of investment opportunity on cash and cash equivalents of non-financial firms listed in Nigeria Exchange Group (NGX)

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### 1.2 Research Questions

a. To what degree does leverage affect cash and cash equivalents of Insurance firms listed in Nigeria Exchange Group (NGX)?
b. To what magnitude does investment opportunity affect cash and cash equivalents of Insurance firms listed in Nigeria Exchange Group (NGX)

### 1.3 Hypotheses

The study is guided by the following null hypotheses.

$H_{o1}$: Leverage has no significant effect on cash and cash equivalents of listed Insurance firm listed in NGX

$H_{o2}$: Investment Opportunity has no significant effect on cash and cash equivalents of listed Insurance firm listed in NGX.

## 2. LITERATURE REVIEW

### 2.1. Conceptual Review

#### 2.1.1 Cash Holding

Cash holdings refer to the amount of cash that a company keeps on hand for various purposes Hsu-Che, Jen-Hsiang & Pei-Wen 2021; Nwoye, Ezenwafor, & Okoye, 2021). These holdings are essential for maintaining liquidity, managing risks, and financing long-term investments (Almeida et al., 2014). Cash holdings include physical cash, bank deposits, and short-term investments, and they provide the liquidity necessary for meeting short-term obligations and pursuing new opportunities. The strategic management of cash holdings allows firms to create value, reduce transaction costs, and enhance financial stability. Companies with optimal cash reserves can effectively navigate market uncertainties, ensuring they can cover operational costs and seize investment opportunities. However, excessive cash holdings can lead to opportunity costs, as funds may remain idle instead of being invested in higher-return assets. Additionally, inflation can erode the value of cash over time, necessitating a balance between liquidity and investment (Li & Hu, 2024).

#### 2.1.2 Leverage and Cash Holding:

Leverage is the use of debt to finance operations or investments by a company (Daruwala, 2023; Nworie & Mba, 2022). Highly leveraged companies describe the ability of a company to get funds from external sources by issuing debt to get cash. Such a company may have lower cash holdings. This is because they need to allocate a portion of their cash flow to debt servicing and interest payments. This is in line with previous works conducted by Bojana et.al

(2022), Amahalu (2019) which found that leverage has negative influence on cash holding. Companies enjoy some benefit through leverage on debt financing. Such companies access more capital instead of using only equity, and interest payments on debt are often tax-deductible. However, leverage also increases financial risk. High level of debt can lead to financial distress, especially if a company faces downturns in revenue of cash flows. By increasing leverage, companies commit to fixed interest and principal payments (Obi & Nworie, 2024), which reduces the amount of free cash flow available for managers to potentially misuse. Jensen (1986) argues that companies with excess cash and high leverage might experience agency conflicts, as managers might retain excessive cash to avoid issuing debt in the future, even if leveraging could be value-enhancing for shareholders. Acharya, Almeida, and Campello (2013) suggest that one way to mitigate these problems and align managerial interests with shareholder's interests is by increasing a company's leverage. Companies with higher leverage tend to hold more cash as a precautionary measure to avoid financial distress and meet their debt-related obligations, such as interest payments and principal repayments (Opler, Pinkowitz, Stulz, & Williamson, 1999; Kim, Mauer, & Sherman, 1998). The relationship between leverage and cash holding is generally positive, with leveraged firms tending to hold more cash as a precautionary measure against financial distress and to maintain financial flexibility, although, these relationships could be influenced by other factors. This is in line with Maheswar and Rabindra (2019) states leverage to have a positive influence on cash holding.

### 2.1.3 Investment opportunity

Investment opportunities is the potential avenues through which a company can allocate its capital to generate returns. The opportunities can be in forms of projects expansion, assets acquisitions, research and development and market penetration. The decision to pursue these opportunities often depends on the expected return on investment (ROI) and the associated risks. Investment opportunities are essential for maximizing a company's growth potential while minimizing risks (United Nations, 2023) It also play a vital role in determining cash holdings. Companies may retain cash to ensure they can fund future investments, particularly when facing financial constraints or limited access to capital markets (Mohammadi, Kardan & Salehi, 2018). However, holding excessive cash can lead to agency problems, where managers may invest in suboptimal projects instead of pursuing more lucrative opportunities. Achieving balance between investment opportunity and cash holdings, companies must assess their cash needs against potential investment returns to optimize their financial strategies.

## 2.2 Theoretical Review

### 2.2.1 Agency Theory

Agency Theory was first proponed in the work of Berle and Means 1932 and further developed by Jensen and Meckling in 1976. The theory addresses the conflicts of interest that arise from the separation of ownership and control in corporations. This theory posits that the interests of managers (agents) may not align with those of shareholders (principals), leading to agency problems. In the context of cash holdings, firms maintain cash reserves as a strategy to mitigate these conflicts. Agency Theory provides a framework for understanding the determinants of cash holdings by emphasizing the need to manage agency conflicts between managers and shareholders. Firms must balance the benefits of holding cash against the potential for misuse, ensuring that cash reserves are used to enhance shareholder value rather than serving as a tool for managerial opportunism.

In relation to firm characteristics and cash Holdings, agency theory emphasis that Firms may hold cash to reduce agency conflicts by providing a buffer that limits managers' ability to engage in value-destroying investments or misuse funds for personal gain. This precautionary measure helps ensure that cash is available for legitimate business needs rather than being squandered on inefficient projects. The Agency Theory highlights the risk that managers, when faced with excess cash, may pursue projects that do not yield positive net present value, driven by personal ambitions or empire-building tendencies. This behavior underscores the importance of cash management policies that align managerial actions with shareholder interests.

### 2.2.2 Trade-Off Theory

The Trade-off Theory has its roots in the Modigliani and Miller (M&M) propositions of 1958, which originally postulated that in a world without taxes, bankruptcy costs, and other market imperfections, the capital structure doesn't matter. However, as researchers began to factor in real-world complexities, the idea of a trade-off between the costs and benefits of debt emerged, leading to the development of the Trade-off Theory. The trade-off theory is a financial theory that suggests that a company should balance the costs and benefits of various sources of financing, such as debt and equity, in order to achieve an optimal capital structure. The benefits of debt mainly arise from the tax shield it offers since interest payments are tax-deductible. On the other hand, the costs of debt include bankruptcy costs and financial distress costs. So, according to this theory, firms determine their capital structure (debt vs. equity) by striking a balance between these costs and benefits.

**2.3 Empirical Studies:**

Nnubia, Ofoegbu, and Nnubia (2020) conducted a study examining the relationship between firm characteristics and cash holdings across Nigeria, South Africa, and Kenya. Utilizing panel data regression analysis on a sample of firms from these countries, the researchers identified significant determinants of cash holdings, including firm size, profitability, liquidity, leverage, and net working capital. The findings revealed that firm size, profitability, and liquidity positively influence cash holdings, while leverage and net working capital have a negative effect. Additionally, the study highlighted differences in determinants between small and large firms, with profitability and liquidity being more critical for small firms, whereas firm size and leverage were more significant for large firms.

Nnado, Onyeka, and Ugwu (2020) examined the relationship between firm size, financial leverage, and cash holdings among selected quoted manufacturing firms on the Nigerian Stock Exchange from 2006 to 2018. Utilizing an ex-post-facto research approach and panel least squares for analysis, the study analyzed data from 37 firms. The findings indicated that financial leverage had an insignificant negative influence on cash and cash equivalents, while the natural logarithm of total assets positively influenced cash holdings, albeit insignificantly. The study concluded that firms with insufficient liquid assets might face high borrowing costs or liquidity issues, highlighting the statistical relevance of control variables in the analysis.

Amahalu and Okudo (2023) investigated the relationship between firm characteristics and cash holdings in six publicly listed conglomerates in Nigeria from 2002 to 2021. Using an ex-post facto design, they analyzed secondary data from annual reports with E-Views 9.0 software. The study measured cash holdings through the cash ratio and assessed firm characteristics like size, research and development (R&D), and leverage. Findings indicated significant negative relationships between firm size, R&D, leverage, and cash ratio at a 5% significance level. The authors recommended that firms prioritize internal funding to avoid potential losses from asset liquidation.

Hidayati and Ratnawati (2024) explored the impact of profitability, leverage, and firm size on cash holdings in 22 industrial sector companies listed on the Indonesia Stock Exchange from 2019 to 2022. Utilizing a quantitative approach, the study employed purposive sampling from a population of 63 companies, analyzing secondary data from annual financial statements through multiple linear regression. The results indicated that profitability and leverage

significantly influence cash holdings, while firm size did not have a significant effect. The authors suggested that future research could include additional variables with stronger relationships and extend the sample size or research period for more accurate results.

## 3. MATERIAL AND METHODS

The research design used in this study is an *ex-post facto* design, which is a type of research design that investigates the relationship between independent variable and dependent variable after the event have taken place. *Ex-post facto* design involves observing the effects of an independent variable that has already taken place or been manipulated without the researcher's control. This design is appropriate for this study because it is not possible to manipulate the variables since the variables under investigation (determinants of cash holding) have occurred in the past. The population of the study was made up of fifteen (15) listed insurance firms in Nigeria which are includes: Goldlink Insurance Plc, International Energy Insurance Plc, Niger Insurance Plc, Staco Insurance Plc, Standard Alliance Insurance, AIICO insurance, AXA Mansard Insurance, Consolidated Hallmark Insurance, Cornerstone Insurance, Coronation Insurance, Guinea Insurance, NEM Insurance, Regency Alliance Insurance, Sovereign Trust Insurance, Universal Insurance. Source: Nigerian Exchange Group (2022) The sampling method employed was purposive sampling, with the selection criteria based on complete annual reports. Goldlink Insurance Plc and Staco Insurance Plc provided reports up to 2018, while International Energy Insurance Plc and Niger Insurance Plc furnished reports up to 2021. Similarly, Standard Alliance Insurance's reports were available up to 2019. Consequently, these five firms were excluded from the population using purposive sampling. The sample comprised ten listed insurance firms.

This study relied on secondary data that were obtained from the annual audited financial statements of the sampled firms from 2013 to 2022. The data was obtained from the income statement and statement of financial position of the listed firms. Data sourced included; market capitalisation, cash and cash equivalent, total assets, total liabilities, and total equity. The secondary data sources are chosen because they are very easy to access, are absolutely free for use or at very low costs.

Table 1 Measurement of Variables

| Variables | Formula | Source |
|---|---|---|
| 1. Cash holding | Cash and Cash equivalent/Total assets | Mouline & Sadok, 2021 |
| 2. Leverage | Total Liabilities/Total Equity | Enekwe, Agu & Eziedo, 2014 |
| 3. Investment Opportunities | $\frac{Market\ Capitalisation + Total\ Liabilities}{\text{Total Assets}}$ | Hapsari & Norris, 2022; Mouline & Sadok, 2021 |

Source: Researcher's Compilation, 2024

The estimable regression model for the test of the hypotheses was adapted from the study by Mouline and Sadok (2021) that modelled cash holding as a function of Agency Conflicts in Morocco. Their model is expressed as:

Cash i,t = α +β1 Size i,t +β2 Cash flow i,t +β3 Debt i,t +β4 Dividend i,t +β5 Tobin's q i,t +β6 Financial distress +β7 1st Share i,t + β8 CEO-Dual i,t + ε i,t……Eqn 1.

The study modified the above model to suit the specific objectives of the present study thus:

$CCE_{it} = \alpha_0 + \beta_1 LEV_{it} + \beta_3 INV_{it} + \mu_{it}$. ……Eqn 2.

Where,

CCE = Cash and Cash Equivalents

LEV = Leverage

INV = Investment

$\alpha_0$ = constant

$\beta_{1\text{-}3}$ = coefficients of the independent variables

μ = Error term

i = Firm of interest

t = Period of interest

Descriptive and regression analysis were specifically used to analyze the data sourced for the dependent variable (cash and cash equivalents) and independent variable (leverage, and investment opportunities). Descriptive analysis allowed for a comprehensive understanding of the central tendencies and distribution of the variables. The hypotheses testing was done

using estimation from Panel Error Component Generalized Least Squares at 5% significance level. The use of this panel approach of regression is justified in this study due to its suitability for estimating the coefficients of a regression model that has both time series and cross-sectional dimensions. Panel data combines both cross-sectional and time-series dimensions (Permatasari, Ratnasari & Nurfadila, 2024), making it valuable for analyzing data over time for multiple entities (such as individuals, firms, countries, etc.). Panel Error Component Generalized Least Squares helped to account for heteroscedasticity in the panel data. The null hypothesis is accepted when the p-value is equal to or greater than the predetermined level of significance (usually set at 5% or 0.05). Equally, if the p-value is lower than the chosen level of significance, the null hypothesis is rejected.

## 4. RESULT AND DISCUSSIONS

### 4.1 Descriptive Statistics

Descriptive analysis allowed for a comprehensive understanding of the central tendencies and distribution of the variables.

Table 2 Descriptive Analysis

| | *CCE* | *LEV* | *INV* |
|---|---|---|---|
| Mean | 0.189326 | 1.300927 | 0.781128 |
| Median | 0.185129 | 0.725237 | 0.790935 |
| Maximum | 0.532244 | 8.317221 | 1.122139 |
| Minimum | 0.011143 | 0.200487 | 0.473153 |
| Std. Dev. | 0.124091 | 1.556261 | 0.155816 |
| Skewness | 0.678227 | 2.775803 | -0.266813 |
| Kurtosis | 2.988515 | 10.77233 | 2.285488 |
| Jarque-Bera | 7.667080 | 380.1230 | 3.313685 |
| Probability | 0.021633 | 0.000000 | 0.190740 |
| Sum | 18.93256 | 130.0927 | 78.11282 |
| Sum Sq. Dev. | 1.524464 | 239.7728 | 2.403597 |
| Observations | 100 | 100 | 100 |

Source: Analysis Output using Eviews 12 (2024)

For cash and cash equivalents (CCE), the mean value is 0.189326, indicating that, on average, cash and cash equivalents represent approximately 18.93% of total assets for the insurance firms in the sample. The maximum value is 0.532244, suggesting that there is significant variation in the extent to which insurance firms hold cash and cash equivalents, with some

firms holding a relatively high proportion of their assets in cash. The minimum value of 0.011143 indicates that there are also firms with very low levels of cash holdings. The standard deviation of 0.124091 reflects the dispersion of cash holdings around the mean. The positive skewness value of 0.678227 suggests that the distribution of cash holdings is slightly skewed to the right, indicating that there are more firms with lower cash holdings than with higher cash holdings. The kurtosis value of 2.988515 indicates that the distribution of cash holdings is leptokurtic, meaning it has fatter tails than a normal distribution.

For leverage (LEV), the mean value is 1.300927, indicating that, on average, insurance firms have a leverage ratio of approximately 1.30, meaning they have more debt than equity in their capital structure. The maximum value of 8.317221 suggests that there are firms with very high levels of leverage, while the minimum value of 0.200487 indicates firms with relatively low levels of leverage. The high standard deviation of 1.556261 reflects the variability in leverage across the sample. The positive skewness value of 2.775803 indicates that the distribution of leverage is highly skewed to the right, with more firms having lower levels of leverage compared to those with higher levels. The kurtosis value of 10.77233 indicates that the distribution of leverage is highly leptokurtic, with very fat tails.

For investment opportunities (INV), the mean value is 0.781128, indicating that, on average, insurance firms have INV of approximately 0.78, suggesting that they have some growth opportunities. The maximum value of 1.122139 indicates that there are firms with relatively high investment opportunities, while the minimum value of 0.473153 indicates firms with lower investment opportunities. The standard deviation of 0.155816 reflects the variability in INV across the sample. The slightly negative skewness value of -0.266813 suggests a slight left skew in the distribution of INV, indicating that there are slightly more firms with lower investment opportunities than with higher ones. The kurtosis value of 2.285488 indicates that the distribution of INV is moderately leptokurtic.

Table 3 Multicollinearity Test Using Variance Inflation Factors

Date: 02/06/24 Time: 06:48

Sample: 1 100

Included observations: 100

| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
|---|---|---|---|
| LEV | 6.47E-05 | 1.860301 | 1.090549 |
| INV | 0.006495 | 28.95189 | 1.097272 |
| C | 0.006714 | 47.19178 | NA |

Source: Analysis Output using Eviews 12 (2024)

The multicollinearity test results, as presented in Table 3, indicate that there is no significant multicollinearity issue among the independent variables used in the regression analysis. The Variance Inflation Factors (VIFs) for the variables leverage (LEV), and investment opportunities (INV) are all well below the commonly accepted threshold of 10, suggesting that there is no excessive correlation among these variables. Specifically, the VIF values for LEV, and INV are 1.090549, and 1.097272, respectively. These values indicate that the variance of the estimated coefficients for each variable is not significantly inflated by correlations with other independent variables. Therefore, it can be concluded that multicollinearity is not a concern in the regression analysis, and the estimated coefficients for each variable are likely to be reliable.

**4.2 Test of Hypotheses**

Hypothesis testing was conducted utilizing estimation from Panel Error Component Generalized Least Squares at a significance level of 5%.

Table 4 Panel Data Estimation Result

Dependent Variable: CCE

Method: Panel EGLS (Cross-section SUR)

Date: 02/06/24 Time: 07:09

Sample: 2013 2022

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Linear estimation after one-step weighting matrix

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LEV | -0.023668 | 0.000383 | -61.72162 | 0.0000 |
| INV | 0.044717 | 0.002148 | 20.81535 | 0.0000 |
| C | 0.109183 | 0.005067 | 21.54981 | 0.0000 |
| | Weighted Statistics | | | |
| R-squared | 0.974974 | Mean dependent var | | 20.67701 |
| Adjusted R-squared | 0.974191 | S.D. dependent var | | 46.96327 |
| S.E. of regression | 1.010877 | Sum squared resid | | 98.09973 |
| F-statistic | 1246.646 | Durbin-Watson stat | | 1.971838 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Analysis Output using Eviews 12 (2024)

The panel data estimation results, as presented in Table 4, provide valuable insights into the determinants of cash holdings in insurance firms listed on the Nigeria Exchange Group (NGX). The regression analysis results indicate a high explanatory power of the model, with an adjusted R-squared value of 0.974191. This adjusted R-squared value suggests that approximately 97.42% of the variation in cash holdings among insurance firms in Nigeria can be explained by the independent variables included in the model, namely leverage, and investment opportunities.

Additionally, the F-statistic of 1246.646 is highly significant, with a p-value of 0.000000, indicating that the overall model is statistically significant at 5% level of significance. This suggests that at least one of the independent variables in the model has a significant effect on cash holdings. The Durbin-Watson statistic of 1.971838 indicates that there is no significant autocorrelation present in the residuals, which suggests that the observations are independent of each other and the regression results are reliable. Therefore, the model validly provides strong evidence of the relationship between agency conflict factors and cash holdings in insurance firms listed on the Nigeria Exchange Group (NGX).

### 4.2.1 Hypothesis I

$H_{01}$: Leverage does not have a significant effect on cash holding of listed insurance firms in Nigeria.

Leverage (LEV) has a negative coefficient of -0.023668 which indicates that for every one-unit increase in leverage, cash holdings decrease by approximately 0.023668 units, holding other variables constant. The p-value of 0.0000 associated with this coefficient is less than 0.05, which suggests that the relationship between leverage and cash holdings is statistically significant at a very high level of confidence. This result implies that higher levels of leverage are associated with lower cash holdings, which could be attributed to the need to service debt obligations, potentially leaving fewer funds available for cash reserves. The alternate hypothesis was accepted that Leverage has a significant negative effect on cash holding of listed insurance firms in Nigeria (*p*-value = 0.0000).

**4.2.1.1 Discussion**: This result finding suggests that higher levels of debt are associated with lower cash reserves in insurance firms. This result is consistent with the agency theory perspective, which posits that high leverage can exacerbate agency conflicts between shareholders and debtholders. Managers facing high levels of debt may prioritize debt servicing over cash reserves, potentially reducing financial flexibility and increasing the risk of financial distress. Additionally, high leverage may signal financial distress or poor financial management, leading to adverse selection and higher borrowing costs. Therefore, insurance firms with high leverage may face pressure to maintain lower cash holdings to meet debt obligations and mitigate agency-related risks. This result agrees with those of Mouline and Sadok (2021); Nnubia, Ofoegbu and Nnubia (2020); Ferreira and Vilela (2004); Jafari, Gord

and Beerhouse (2014) and Ifeanyi, Nnenna and Chukwuma (2020) but contradicted the argument by Davidson and Rasyid (2020).

### 4.2.2 Hypothesis II

$H_{03:}$ Investment opportunities do not have a significant effect on cash holding of listed insurance firms in Nigeria.

Regarding investment opportunities (INV), the coefficient of 0.044717 indicates that for every one-unit increase in investment opportunities (measured by Tobin's Q), cash holdings increase by approximately 0.044717 units, holding other variables constant. The p-value of 0.0000 associated with this coefficient is less than 0.05, which suggests that this relationship is statistically significant. This result implies that firms with greater investment opportunities tend to hold more cash, possibly to finance potential growth opportunities or to buffer against uncertainties associated with investment decisions. Thus, the alternate hypothesis was accepted that Investment opportunities have a significant positive effect on cash holding of listed insurance firms in Nigeria (*p*-value = 0.0000).

**4.2.2.1 Discussion**: This finding indicates that insurance firms with greater growth prospects tend to hold higher levels of cash. This result suggests that insurance firms may maintain larger cash reserves to capitalize on potential investment opportunities or to navigate uncertainties associated with growth initiatives. From an agency theory perspective, higher cash holdings in firms with greater investment opportunities may reflect managerial discretion to pursue value-enhancing investments or to mitigate agency conflicts arising from conflicting investment priorities. Therefore, insurance firms with favorable growth prospects may adopt more conservative financial policies, including higher cash reserves, to support long-term value creation and mitigate agency-related risks. Dissimilar result was found by Mouline and Sadok (2021); Koo and Maeng (2019); Ozkan and Ozkan (2001); but contradicted the finding by Hapsari and Norris (2022) that investment opportunity negatively affects cash holding.

## CONCLUSION AND RECOMMENDATIONS

The nexus of determinants and cash holdings is a crucial aspect of corporate finance, particularly in the context of insurance firms operating within the Nigerian market. In this study, we investigated the effect of leverage, and investment opportunities on cash holdings in listed insurance firms in Nigeria and found that while leverage negatively affects cash holdings, the effect of investment opportunities is positive.

Thus, as firms increase their debt levels, their cash holdings decrease because higher leverage may exacerbate agency conflicts by increasing the divergence between shareholders' and managers' interests. Managers may be incentivized to reduce cash holdings to finance risky projects or to meet debt obligations, rather than holding cash for precautionary purposes.

To cap it all, firms with greater growth prospects tend to hold higher levels of cash since firms with attractive investment prospects may retain more cash to capitalize on growth opportunities, rather than distribute it to shareholders or invest in riskier projects financed by external debt. Moreover, higher cash holdings can provide insurance firms with the flexibility to exploit strategic opportunities or navigate uncertain economic conditions, enhancing their ability to sustain growth. In conclusion, the findings underscore the importance of considering determinants dynamics in shaping cash holding policies of insurance firms in Nigeria. By understanding the impact of leverage, and investment opportunities on cash holdings, policymakers and practitioners can implement governance mechanisms and financial strategies to debt and promote firm value creation. The study recommends that:

1. The management of listed insurance firms in Nigeria should implement prudent debt management policies and strategies to ensure that debt levels are sustainable and do not excessively constrain cash flow or financial flexibility.
2. To the strategic planning and investment committees of listed insurance firms in Nigeria, it is recommended to adopt a proactive approach to capitalize on growth opportunities while maintaining sufficient cash reserves. Strategic planning committees should conduct thorough assessments of investment opportunities, considering both potential returns and associated risks.

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