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Board Capital as a Catalyst: Examining the Effects of Operating Cash Flow Management Practices on Investment Efficiency of Non-Financial Firms Listed in Kenya

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ABSTRACT

Investment efficiency is essential for maximizing returns, optimizing resource allocation, managing risk, ensuring long-term sustainability, fostering stakeholder confidence, and enabling informed strategic decision-making. Nevertheless, investment levels in developing nations like Kenya have yet to recover to pre-crisis levels. A concerning trend in emerging economies, including Kenya, has been the persistent decline in investment efficiency over time, presenting a formidable challenge for investors and businesses alike. Thus, the study's general objective was to establish the moderating effect of board capital on the relationship between cash flow management practice signs were adopted to establish the causal relationship between the study's variables by use of panel data. After exclusion and inclusion criteria, the study utilized the data of 29 non-financial listed companies covering the period 2012–2023. A document report guide was used to collect the data. The Hausman test was used in deciding between the fixed and random effects models, and both the Breusch-Pagan tests were used to assess heteroskedasticity. The data for the study was analyzed through descriptive and inferential statistics using statistical techniques including Pearson correlation coefficient and multiple regression analysis. All the analyses were done with the aid of STATA software version 13. The hypotheses were tested through hierarchical multiple regression models. The findings of this study revealed that operating cash flow management ($\beta = 0.182, p < 0.05$) was positive and statistically significant. Board capital moderates the relationship between operating cash flow management practices and investment efficiency ($\beta = -0.006, p < 0.05$). The study suggests that managers in non-financial companies prioritize improving operational efficiencies. The findings of this study can help direct the allocation of resources and concentrate on improving operational decisions. Because board capital has a moderating influence that is beneficial, it is essential for businesses to carefully select board members who possess the proper experience and networks that improve financial strategy. This highlights the significance of human capital in governance systems and encourages businesses to make investments in the growth of their boards of directors. The findings have the potential to provide policymakers and regulatory agencies with information highlighting the significance of strong governance structures in the process of enhancing investment efficiency.

INTRODUCTION

Investment efficiency plays a pivotal role in maximizing returns, optimizing resource utilization, managing risk, ensuring sustainability, building stakeholder confidence, and facilitating strategic decision-making (Chen *et al.*, 2021; Al-Hiyari *et al.*, 2023). By prioritizing investment efficiency, companies can enhance their financial performance and create long-term value

However, investment levels in developing countries, including Kenya, have remained below pre-crisis levels (Naem & Li, 2019). During the COVID-19 pandemic, The Capital Market Authority (2021) reported a concerning increase in investment inefficiencies in Kenya. Many firms in emerging economies, including Kenya, have experienced declining investment efficiency's during covid 19 pandemic, posing a challenge for investors (Capital Market Authority, 2021). In 2017, Kenya Airways Limited faced a significant challenge,

as evidenced by its poor stock performance. During that year, the company experienced a staggering 58.7% decline in its stock price, accompanied by a substantial 51.4% reduction in profit and a notable 46.7% decrease in dividend payout when compared to its counterparts on the NSE Omondi (2020). These sharp declines in stock value, profitability, and dividend distribution serve as clear indicators of investment inefficiency. They underscore the company's struggles in efficiently allocating its resources and delivering satisfactory returns to its investors. Furthermore, these metrics reflect a loss of market confidence in the company's ability to maintain financial stability and foster growth, collectively signaling pronounced investment inefficiency. Kenya Airways and Uchumi Supermarkets are facing a combination of corporate governance and financial challenges, resulting in significant losses for their investors at 77.3% and 56.3% respectively (NSE Handbook, 2019). In contrast,

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Safaricom has demonstrated investment efficiency by generating a return of 79.8% for its investors (NSE Handbook, 2019). These inefficiencies in corporate investments have led to the delisting, bankruptcy, takeover, closure, or phased-out operations of numerous companies in Kenya. ARM Cement PLC, Deacons (EA) PLC, and Atlas were suspended from trading due to substantial losses and outstanding debts, while Kenol Kobil was delisted following its acquisition by Rubis Energy in 2019. Mumias Sugar Company was placed under statutory management due to debt defaults. The investment performance of firms listed on the Nairobi Securities Exchange serves as an indicator of the nation's overall economic performance. A decrease in revenue and earnings across many companies, as evidenced by profit warnings, suggests that investors' funds are not meeting expectations.

Given these investment inefficiencies, there is a need for further studies to investigate the factors contributing to investment efficiency or inefficiency. Previous research has identified various determinants of investment efficiency, including corporate social responsibility (Lin *et al.*, 2021), corporate governance (Bimo *et al.*, 2021; Ellili, 2022), financial reporting quality (Ellili, 2022), ownership concentration (Dinh *et al.*, 2022), earnings quality (Tahat *et al.*, 2022), among others. However, there is a lack of sufficient studies examining the relationship between board cash flow management practices and investment efficiency, with mixed findings. Additionally, while some empirical evidence suggests that board experience influences corporate investment (Agyei-Mensah, 2021; Teng *et al.*, 2022), there is a lack of empirical evidence on the moderating effect of board capital on the relationship between cash flow management practices and investment efficiency. Moreover, considering the suggestion by (Ibrahim *et al.*, 2015) to incorporate other variables and/or moderators in future studies, along with the divergent findings in the literature, it would be intriguing to delve deeper and examine the role of cash flow management practices in the relationship between cash flow information and investment efficiency. Addressing these research gaps will contribute to filling the existing dearth in previous studies. Therefore, the main objective of this study is to examine the moderating effect of board capital on the relationship between cash flow management practices and investment efficiency among non-financial firms listed in the NSE in Kenya.

Theoretical Review

This study is grounded on two major theories namely the Free Cash Flow Theory (FCF) and theory of stakeholders. Michael Jensen is credited with developing the concept of Free Cash Flow Theory (FCF) in the year 1986 alone. According to this theory, the term "Free Cash Flow" (FCF) is used to describe the surplus of cash that is generated after the required investments in projects that provide positive net present value (NPV) returns have been subtracted. These initiatives need

making investments over a lengthy period of time in which the amount of money that is anticipated to be received is greater than the amount that is expected to be spent (Jensen, 1986). Free cash flow (FCF) is significantly tied to changes in shareholders' wealth and is directly linked to stock returns, according to (Kipngetich *et al.*, 2021). They suggest that this connection is substantial. Because of this, free cash flow is seen as a trustworthy indication of the performance of a company. There are three types of cash flow: financing cash flow, which includes the repayment of debt and stock transactions; operating cash flow, which is used to satisfy operational commitments; and investment cash flow, which is used to drive organizational growth through asset utilization. Both types of cash flow are included in free cash flow. All of these aspects of FCF contribute to the enhancement of investor confidence. An increase in a firm's free cash flow (FCF) is frequently seen by investors as an indication that the value of the company is increasing, which is subsequently reflected in better stock returns (Jensen, 1986).

The presence of a positive free cash flow (FCF) indicates that the company is generating an amount of cash that is in excess of what is required for its operations and expansion. On the other side, a negative FCF is indicative of a deficiency in the available financial resources. Free cash flow, also known as FCF, is a measure of a company's success that is considered to be comparable to earnings. Nevertheless, in contrast to earnings, free cash flow does not take into account any arbitrary changes that were made to the income statement. Comparable to the examination of a company's net revenue, free cash flow is regarded as an essential component in determining the performance of a business (Jaggi & Gul, 2000). When a company has a negative free cash flow (FCF), it signifies that the organization is unable to generate sufficient funds to keep the business operating continuously. The earnings of a company are represented by the Free Cash Flow (FCF) metric, which does not take into account any subjective changes that were made to the income statement. According to Jaggi and Gul (2000), performing an analysis of the net income line is comparable to evaluating the significance of free cash flow (FCF) when it comes to evaluating the success of a company.

The theory of stakeholders will serve as the foundation for this investigation. It was in 1984 when Freeman first proposed the concept. Individuals or groups that have a vested interest in an organization or are connected to it in some way, either directly or indirectly, are referred to as stakeholders. Stakeholders are defined by Tapang and Bassey (2017) as organizations or individuals who are affected by the acts of a corporation or who have an impact on the corporation, either directly or indirectly. This definition applies to both direct and indirect sources of influence. At the end of the day, the support and endorsement that an organization receives from its stakeholders is the single most important factor in determining its long-term success. As a consequence of

this, if the stakeholders have a bigger influence on the organization, the organization will be required to make additional adjustments in order to satisfy their desires and requirements in order to continue receiving their support and patronage (Freeman, 2017).

According to Freeman *et al.* (2018), the Stakeholders' Theory proposes that businesses operate within a broader societal framework and have obligations not only towards their shareholders but also towards other stakeholders, such as employees, customers, suppliers, communities, and the environment. This theory also states that businesses have responsibility towards the environment. This concept emphasizes the connectivity that exists between the prosperity of a firm and its capacity to satisfy the needs and interests of its stakeholders. A helpful understanding of the relationship between these two features can be gained through the use of the theory of stakeholders. The methods of cash flow management entail the coordination of operations that are operating, investing, and financing, all of which collectively influence the financial well-being and success of a firm. As defined by Kim *et al.* (2025), investment efficiency refers to the capacity of a company to make use of its resources in a manner that results in the generation of returns and the establishment of long-term value that is resilient and sustainable.

LITERATURE REVIEW

The purpose of the research conducted by Nikbakht (2024) was to gain an understanding of the potential influence that cash flows resulting from operating, investing, and financing operations could have on the value of a company. For the purpose of this study, a mixed data approach was utilized, and information was gathered from 137 firms that were registered on the Tehran Stock Exchange between the years 2004 and 2020. This approach was utilized in order to investigate the relationship between the cash inflows and outflows that resulted from the various operations of the firm and the valuation of the business. Cash inflows from day-to-day business operations and cash inflows from financing activities were found to have a strong and positive link with the overall worth of the company, as indicated by the findings of the study. Furthermore, the association between cash flows created by operational operations and the value of a company was more apparent in organizations that had positive net cash flows in comparison to those that did not have positive net cash flows.

Sabri *et al.* (2020) examined the association between cash flows from operating operations, investment activities, and financial activities with stock returns and asset volume for companies that are listed on the Palestine Stock Exchange. The purpose of the study was to determine whether or not there is a relationship between these three types of cash flows. In 2018, the research was conducted with 24 different companies and gathered information from their respective financial filings. Non-parametric tests, notably the Mann-Whitney U Test and the Kolmogorov-Smirnov

test, were utilized in order to conduct the analysis of the statistical data. It was determined through the findings that there was no statistically significant difference between the financing operations of businesses that had low stock values and those that had high stock values.

Within the scope of their research, Nangih (2023) evaluated the impact that Funding Cash Flow has on the valuation of businesses that are active within the Technology Sector. Research was conducted with a particular emphasis on technology-based businesses that were traded on the Indonesian stock exchange. A variety of differences in the worth of these businesses that are dependent on technology were discovered by the data that was obtained. Due to the fact that both companies and investors anticipated a consistent increase in the value of the company, this produced a complex situation for both parties. For the purpose of the study, a sample of twenty-eight firms that fulfilled certain criteria was utilized for the time period spanning from 2019 to 2022. In the course of an investigation, quantitative research and multiple regression analysis were utilized as the technique for doing the analysis. Based on the data, it was determined that the impact of operations cash flow, investment cash flow, and financing cash flow on the value of the company did not meet the criteria for statistical significance.

An investigation on the relationship between cash flow and the financial performance of insurance businesses in Nigeria, which is considered to be an emerging country, was carried out by Ogbeide and Akanji (2017). In order to calculate the sample size for the study, which consisted of 27 listed insurance companies in Nigeria, the researchers used time series data spanning the years 2009-2014. In order to investigate the relationship between the variables, the research utilized both descriptive and inferential statistics. Additionally, the study ensured that the time series remained consistent and adhered to the principles of ordinary least squares. The findings indicated that cash flow had a significant influence on the financial performance of insurance businesses, and this influence was sufficiently enough to be considered statistically significant. A significant improvement in the financial performance of insurance companies was observed over the period under consideration, and it was observed that cash flow from operating activities provided this improvement. The cash flow that was created by financing activities, on the other hand, was shown to increase the financial performance of the insurance companies that were included in the sample; however, this improvement was not statistically significant.

Using a causal study technique, Soet *et al.* (2018) investigated the relationship between the management of financing cash flow procedures and the financial performance of mutual funds in Kenya. Specifically, they explored the relationship between the two. In order to get secondary panel data for the period 2011-2016, we obtained information from the audited financial statements of 22 different mutual funds. Both descriptive

statistics and inferential statistics, such as R square, t-tests, and F-tests, were utilized in order to investigate the relationship between the variables and quantify the degree to which the predictor factors were responsible for the variance in the variable that was being studied (the dependent variable). For the purpose of determining whether or not the data were normal, whether or not the model was stable, and whether or not autocorrelation was present, many tests were carried out. Based on the findings, it was determined that the implementation of strategies for financing cash flow management had a significant and negative impact on both the return on assets and the return on equity. Ultimately, the study determined that the application of financing cash flow management strategies had a significant and adverse impact on the financial performance of mutual funds, notably in regard to their return on assets and return on equity. Thus, we hypothesized that:

H01: Operating cash flow management practices has no significant effect on investments efficiency of non-financial firms listed in NSE.

Moderating Role of Board Capital

The board's capacity to effectively carry out its tasks is significantly improved by the incorporation of human capital, external social capital, and internal social capital, all of which are essential components. According to Haynes and Hillman (2010), the term "Board Capital" refers to the aggregate of these several types of capital. To be more specific, the term "human and social external capital" refers to a collection of valuable resources (such as knowledge, experience, and information about the environment in which the company operates) that the board of directors is able to utilize more effectively through the connection and collaboration among its members, which is referred to as "internal social capital." Internal social capital is a sort of social capital that emphasizes the traits that create cohesion and permit the pursuit of common objectives (Adler & Kwon, 2002).

This type of social capital is responsible for fostering unity inside a group, such as a board, by putting an emphasis on the qualities that promote cohesion. The mere fact that vital resources are in one's possession does not guarantee that they will be utilized effectively or incorporated into the decision-making process of the board.

The majority of the study that has been done in the past has focused mostly on investigating the influence that internal factors, such as corporate governance, have on the ability of businesses to make effective investments. On the other hand, there is a limited amount of research that investigates how the external network of a company influences the investment efficiency of the company from the perspective of resource dependence. According to the upper echelons theory, the personal perceptions of the board of directors are the primary factor that play a role in determining the financial decisions that a company makes. Director preferences and strategic decisions are inexorably influenced by the information that directors obtain from the companies with which they are affiliated (Chuluun, 2017; Masulis & Zhang, 2019; Xia *et al.*, 2024). This is the case regardless of whether the directors are directors of a company or not. The connections of the directors are a source of social capital, which includes the reputation, information, and knowledge that these relationships possess. Additionally, it incorporates information regarding the behaviors of the firm's consumers, suppliers, and competitors (Braun *et al.*, 2019). The current study therefore, hypothesized that:

H02: Board capital has no significant moderating effect on the relationship between Operating cash flow management practices and investments efficiency of non-financial firms listed in NSE

Conceptual Framework Model

Upon the theoretical and literature review we build the following conceptual framework model (Figure 1).

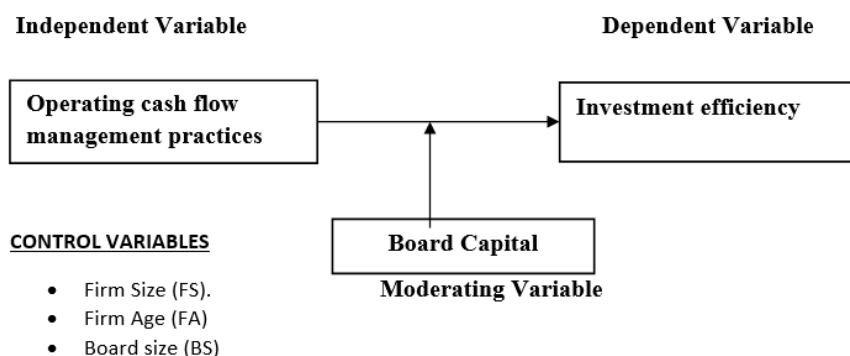


Figure 1: Conceptual Framework Diagram

Source: Researcher (2024)

MATERIALS AND METHODS

Taking into consideration the factual material that was gathered from the evaluation of the relevant literature as

well as the theoretical foundations that were covered in the second chapter, the research adhered to a positivist philosophy.

Research Design, Sample and Data Sources

To investigate the link between Operating cash flow management practices, Investment efficiency and Board capital on non- financial listed in Kenya, this research employed a longitudinal and explanatory design. The longitudinal research design was deemed appropriate because it collected numerical data on the same variable over an extended period. This design was optimal for this study because it considered panel data for the eleven-year period from 2012 to 2023. A common application of an explanatory research design was to determine the cause-and-effect relationship between variables (Kassa, 2021). All non- financial listed in Kenya served as the study's unit of analysis.

Variables Measurements

Dependent Variable

Following Biddle *et al.* (2009); (Gomariz & Ballesta, 2014) to estimate investment efficiency for firm *i* in year *t*, the study will specify a model that predicts investment efficiency based on growth opportunities (measured by sales growth). Deviations from the model, as reflected in the error term of the investment model, represent the investment inefficiency.

$$\text{investment}_{it} = \beta_0 + \beta_1 \text{salesGrowth}_{it-1} + \epsilon_{it}$$

Where;

Investi, *t* = is the total investment of firm *i* in year *t*, defined as the net increase in tangible and intangible assets and scaled by lagged total assets.

Sales Growth_{i, t-1} is the percentage change in sales of firm *i* from year *t-2* to *t-1*

(Sales – is the gross inflow of economic benefits arising from the ordinary operating activities of an entity)

β_0 = Constant; β_1 = Coefficients of regression; ϵ_{it} = Error term

The study will estimate the investment model for each year and firm. The residuals from the regression model will reflect the deviation from the expected investment level, and residuals will be used as a firm-specific proxy for investment inefficiency.

Independent Variable

Operating Cash Flow

Operating cash flow (OCF) variable will be obtained from operating cash flow information outlined on a company's cash flow statement in a certain period minus the operating cash flow of the previous year divided by the operating cash flow of the previous year (Subramanyam, 2014, Kipngetich *et al.* (2021).

$$\text{OCF}_{it} = ((\text{OCF}_{it} - \text{OCF}_{it-1}) / \text{OCF}_{it-1})$$

Moderating Variable

The study's moderating variable is board capital denoted as index of board experience, board education and board interlock. The financial expertise of the board will be quantified as the proportion of board members who have a background in finance, accounting, and economics (such as a Bachelor's, Master's or Doctorate degree subjects such as, banking experience with an MBA degree,

professional education as a chartered accountant, certified public accountant experience as a finance manager, management, accounting, or economics professor/ Lecturer, experience as a professional investor, or a law degree in LLM or LLB) (Khan *et al.*, 2019). Director interlock (DI) will be determined by dividing the total number of members of the executive board who also sit on the executive boards of other firms by the number of executives of the firm's executive board (Barroso-Castro *et al.*, 2016; Hernández-Lara & Gonzales-Bustos, 2019).

Control Variables

The following variables will be controlled as they may have systematic influence on the level of investments efficiency. These will be controlled to enable a clearer view of the influence of the independent variables and the moderating variables on the dependent variable.

Firm size (FS)

The study will use total assets as a measure of firm Size, following Tariverdi *et al.* (2014) and Laeven *et al.* (2014), the researcher predicts a positive impact between firm size and investment efficiency. Measured as follows; SIZE_{it} = Log of current year total Assets_{it}

Firm age (FA)

The study will use the same measurements as previous studies ((Berger *et al.*, 1998; Boone *et al.*, 2007; Borghesi & Vercelli, 2008) where age will be defined as being from 2012 minus the establishment date of the company, in order to determine how many years, it had been incorporated before 2012.

Hausman Test

According to Sheytanova (2015), the Hausman test is used to identify whether the effects in a model are random or fixed. The test determines if the predictor variable is linked to the individual-specific error term. The null hypothesis of the Hausman test states that the random effect is preferable to the fixed effect. If the probability value derived from the Hausman test exceeds the 5% significance threshold, the random effect is preferred; if the likelihood value is less than the threshold for significance level, the fixed effect is preferred.

The Hausman test is performed using the estimators listed below.

$\beta_{RE} - \beta_{FE}$ and its covariance. An efficient estimate's correlation with its variance from an ineffective estimator should be zero. The following are examined under the null hypothesis:

$W = (\beta_{RE} - \beta_{FE})' \Sigma^{-1} (\beta_{RE} - \beta_{FE})$ has *k* degrees of freedom that follow a chi-square distribution. A random effects estimator should then be employed if *W_i* is substantial.

Model Specification

A hierarchical multiple regression model was adopted in this study to estimate the relationships between the moderating board capital on the relationship Operating

cash flow management practices and Investment efficiency.

To account for discrepancies in scales for measurement, the data will be log-transformed before being used in moderation analysis. The impact of tax measures on corporate Investment efficiency will then be assessed using panel analysis approaches such as fixed or random effect models, as shown below.

The models are stated as follows:

The model specification for the control variable is as shown in model 1:

$$IE_{it} = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \epsilon_{it} \quad \dots(1)$$

$$IE_{it} = \beta_0 + C + \beta_3 OCF_{it} + \epsilon_{it} \quad \dots(2)$$

Hierarchical Multiple Regression

The research will utilize Baron and Kenny's (1986) hierarchical multiple regression model. To investigate the impact of moderation, Baron and Kenny (1986) proposed and later verified by Frazier *et al.* (2004) hierarchical multiple regression approach was used. The method advocated by Aiken and West (1991) enables the analysis and interpretation of many forms of interaction. When a predictor variable's intensity, direction, or statistical significance of the relationship with an outcome variable alters in response to the magnitude of another variable, this relationship is said to be in "moderation". In this study, the hypotheses H02 was tested and the interactions between the variables were assessed using a hierarchical multiple regression analysis. For moderation to exist, all influence must be substantial. The procedure entailed several phases, and the resulting "R square," "F change," and "p values" will be presented. The moderation equation below illustrates and summarizes the aforementioned moderation testing procedure.

$$IE_{it} = \beta_{0it} + C + \beta_{3it} OCF_{3it} + \beta_{4it} BC_{it} + \epsilon \quad \dots(3)$$

$$IE_{it} = \beta_{0it} + C + \beta_{3it} OCF_{3it} + \beta_{4it} BC_{it} + \beta_{5it} OCF_{1it} * BC_{it} + \epsilon \quad \dots(4)$$

Where;

IE = Is the measure of Investments efficiency

β_0 = Is changes in Investments efficiency that independent variables present in the model cannot explain? Note that it is the constant in the equation.

OCF= Operating cash flow management practices

ϵ = Is the error term

i= Companies/Firms

t= time

RESULTS AND DISCUSSIONS

According to Howitt and Cramer (2010), a normality test was carried out on the data before the regression analysis was proceeded with. The study of skewness and kurtosis reveals that there are 348 observations and a skewness probability of 0.060. Consequently, this suggests that we are unable to reject the null hypothesis. In order to determine whether or not the residuals follow a normal distribution, the skewness/kurtosis test demonstrates

that they do. Additional normality tests, notably Shapiro Wilk tests of normality, were carried out in order to verify that the residuals follow a normal distribution. When doing the Shapiro-Wilk test, the assumption that the residuals follow a normal distribution is known as the null hypothesis. It was evident that the q -value (0.057) was higher than the threshold of 0.05. Consequently, the hypothesis of normality cannot be rejected. The unit root test was carried out and the results demonstrated that the data does not contain any unit roots, and as a result, the data can be considered stationary at 5% degree of significance. Consequently, the regression model can produce relevant results because the means and variances of the data are not reliant on the passage of time (Gujarati for 2012). The term "multicollinearity" is defined by Hair *et al.* (2019) as a statistical notion that describes the situation in which two or more explanatory variables in a model are highly linearly connected to one another. The variance inflation factors (VIFs) of the predictor variables in this investigation did not surpass a value of 10, which implies that there was no multicollinearity seen between the variables that were considered independent (Hair *et al.*, 2019). Heteroscedasticity is often referred to as non-constant of variance. Within the scope of this investigation, the Breusch-Pagan-Cook-Weisberg test for homoscedasticity was utilized. The p-value is 0.4099, which is greater than 0.05, which indicates that the null hypothesis is not rejected. As a result, the conclusion that there is no heteroscedasticity problem can be drawn from this statistical analysis. However, the error variance remains unchanged (this is known as homoscedasticity). For the purpose of evaluating the model specification, specifically to ascertain whether or not the model is incorrectly stated as a result of missing variables, the Ramsey RESET test was utilized. It is the assumption of the null hypothesis that the model does not include any variables that have been left out. A p-value that is lower than 0.05 indicates that the null hypothesis should not be accepted. A p-value of 0.2646. This value indicates that the null hypothesis cannot be rejected at a significance level of 0.05. The model of the study was found to be satisfactory.

The findings of the Hausman test, which are presented and were taken into consideration while making the decision on whether or not to utilize fixed effect models or random effects models for carrying out the regression. It can be seen from the table that both the chi-square value and its p-value ($\chi^2 = 0.64$; $p > 0.05$) did not have any statistical significance. In light of this, the null hypothesis of random effects, which asserts that the random effect is suitable, was not rejected. Therefore, the Hausman's test came to the conclusion that a random effects model is the most suitable choice for use in the subsequent regression models that will be carried out in order to evaluate the hypotheses pertaining to the research.

Table 1: Hausman Test Results for Model Specification

Coefficients				
	(b)	(B)	(b-B)	sqrt(diag(V _b - V _B))
	re	fe	Difference	S.E.
LogFS	-0.457	0.000	-0.457	0.012
LogFA	0.033	1.000	-0.967	0.009
LogBS	0.002	0.000	0.002	0.001
LogOCMP	0.195	0.000	0.195	0.025
IBC	0.000	0.000	0.000	0.000
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha, efficient under Ho; obtained from xtreg				
Test: Ho: difference in coefficients not systematic				
chi2(7) = (b-B)'[(V _b -V _B) ⁻¹](b-B)				
= 12960.30				
Prob>chi² = 0.64				

Source: Field Data, 2024

Table 2: Hierarchical Multiple Regression Model for Moderation Effect of Board Capital on the Relationship between Cashflow Management Practices and Investment Efficiency

	Model 1 β (p)	Model 2 β (p)	Model 3 β (p)	Model 4 β (p)
(Constant)	-2.207 (0.000)	-6.57 (0.000)	30.803 (0.001)	14.923 (0.769)
Control Variable				
FS	0.002 (0.844)	0.02 (0.033) **	0.031 (0.001) **	0.031 (0.001) **
FA	-0.006 (0.953)	0.045 (0.659)	-0.184 (0.084)	-0.155 (0.209)
Independent Variable				
OCMP		-0.173 (0.481)	-0.146 (0.507)	3.08 (0.780)
Moderating Variable				
BC			-13.53 (0.000) **	-7.699 (0.679)
Interaction Effect				
OCMP*BC				-1.19 (0.767)
Model Summary				
R Square	0.0007	0.2137	0.3744	0.3764
Chi-square	0.03	3.53	6.58	5.03
Prob > chi²	0.000	0.000	0.000	0.000
Hausman test	0.000	0.000	0.000	0.000

Regression Analysis

A statistical approach to statistics known as regression analysis is utilized to describe and assess relationships, particularly those that exist between a response variable and one or more predictor variables. The purpose of regression analysis is to determine the nature and extent of the relationship that exists between certain variables (Gujarati, 2013). A procedure that is utilized to evaluate

the connections that exist between a set of predictor factors and a set of outcome variables (Jackson Jr., 2012). According to the hypothesis put forth by Baron and Kenny (1986), the research utilized a hierarchical regression model to investigate the impacts. Within the framework of the hierarchical regression model, the sequential inclusion of variables in separate blocks is mandatory.

Hypotheses Testing

Hypothesis H01

stated that Operating cash flow management practices have no significant effect on investment efficiency of non-financial firms listed in NSE. According to the findings shown in the table, it can be observed that the management of operating cash flow ($\beta = 3.08$, $q < 0.05$) was both positive and statistically significant. It is therefore concluded that the operating cashflow management procedures of non-financial enterprises that are listed on the NSE have a considerable effect on the investment efficiency of these firms. This conclusion is reached as a result of the rejection of the hypothesis H01. There is a strong correlation between operational cash flows and corporate performance in Nigeria's food and beverage industry, according to Frank and James (2014), who evaluated the connection between operating cash flow activities and corporate performance in Nigeria's food and beverage industry. These findings contradict the findings of Frank and James (2014). Contrary to the findings of Moraya (2018), whose research demonstrated that there is no statistically significant connection between the two variables, this one does not support the hypothesis. Furthermore, it is in direct opposition to the conclusions of the study conducted by, which showed that the impact of operating activities on investment performance was both positive and minor.

Hypothesis H02

stated that Board capital has no significant moderating effect on the relationship between operating cash flow management practices and investment efficiency of non-financial firms listed in NSE. According to the findings, the moderating effect of board capital on the relationship between operating cash flow management practices and investment efficiency of non-financial firms listed on the Nairobi Securities Exchange (NSE) was found to be negative and significant ($\beta = -1.19$, $q < 0.05$). As a result, hypothesis H02 is rejected, and the conclusion that is reached is that the relationship between operating cash flow management practices and investment efficiency of non-financial enterprises that are listed on the NSE is moderated by board capital.

Mod Graphs

For the purpose of providing an explanation of the outcomes of the interaction, mod graphs are utilized. According to Smarandache, Kandasamy, and Ilanthenral (2016), there are three distinct ways in which a moderating impact can make its appearance: by amplifying, by buffering, or by becoming hostile. It is possible to enhance the impact of the predictor variable on the result variable by augmenting the moderator variable. This makes the moderator variable more significant. The phenomenon known as buffering describes a scenario in which the influence of the predictor variable on the outcome variable is diminished while the moderator variable is significantly raised. When the moderator variable is manipulated in

such a way that it causes the influence of the predictor variable on the result variable to be reversed, this is an example of antagonistic moderation. When all three of the following conditions are satisfied, we can say that moderation is indeed present. As a first point of interest, it is anticipated that the degree to which the interaction contributes to the variance that is explained will be much higher than the degree to which the variance is explained without the interaction. In addition to this, it is of the utmost importance that the coefficient for the interaction term exhibits a significant departure from zero. For the purpose of analyzing the characteristics of the interaction through the evaluation of the simple slopes, it is necessary to do the calculation of the simple slope representing the interaction. According to Igartua and Hayes (2021), it is of the utmost importance to underline that both the models, with and without the interaction, should contain evidence of statistical significance. It has been demonstrated in previous research that the most effective approach to comprehending the influence of the moderator's interaction is to graphically display them through the use of graphical plots (Tepe, 2019). In order to evaluate the moderating influence of business size on the link between cash flow management methods and financial performance, the research adopted a mod graph, which was recommended by Jose (2008).

Moderating Effect of Board Capital on the Relationship between Operating Cashflow Management Practices and Investment Efficiency

The present study aimed to analyze the moderating effect of board capital on the relationship between operating cashflow management practices and investment efficiency. Several different regression studies were carried out to investigate the relationships between these variables. The results presented in Figure 4.1 demonstrate that when it comes to operating cashflow management techniques, investment efficiency is high for companies that have a low board capital, while it is low for companies that have a high board capital. When it comes to enterprises with low board capital, the rate of increase in board capital is larger than the rate of increase for firms with high board capital. This is because investment efficiency increases. The steepness of the slopes, in addition to the data, demonstrates this point more clearly. Therefore, the hypothesis that board capital moderates the relationship between operational cashflow management practices and investment efficiency of non-financial firms listed in NSE was rejected and it was concluded that board capital exerts an enhancing moderation on the relationship between operational cashflow management practices and investment efficiency of non-financial firms listed in NSE.

Discussion

These findings contradict those by Frank & James (2014) who evaluated the connection between operating cash flow activities and corporate performance in

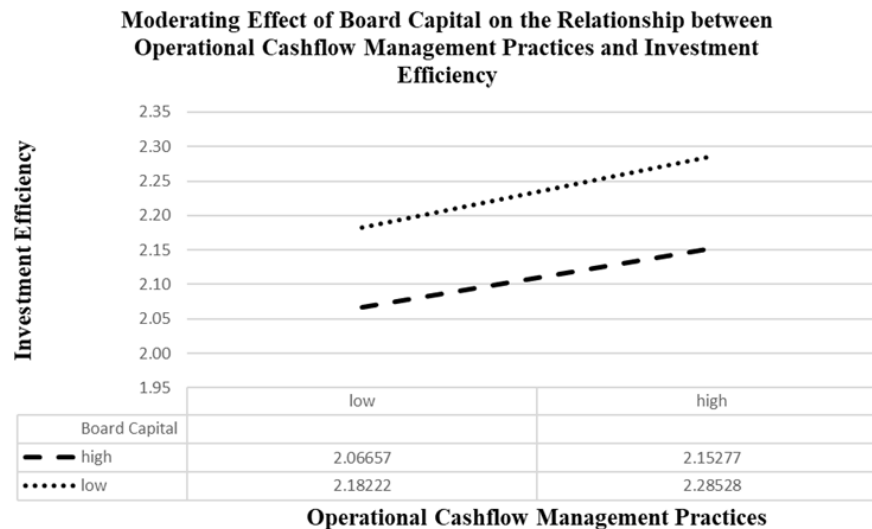


Figure 2: Moderating Effect of Board Capital on the Relationship between Operating Cashflow Management Practices and Investment Efficiency

Source: Field Data, 2024

Nigeria's food and beverage industry and found a strong correlation between operational cash flows and corporate performance in Nigeria's food and beverage industry. However, it differs from the findings of Moraya (2018) whose study established an insignificant statistical relationship between the two variables. It also contradicts the study findings by whose study revealed a positive and insignificant effect of operating activities on investment performance.

This finding is in line with the principles of the Free Cash Flow Theory, which argues that excess free cash flow can lead to value-destroying activities within a company unless effectively managed. By efficiently managing operating cash flow, firms can potentially reduce the risk of misallocation and value destruction associated with excessive free cash. Additionally, this finding also relates to Stakeholders' Theory, as it indicates that effective management of operating cash flow can lead to improved outcomes for various stakeholders. For example, by optimizing investment efficiency through better management practices, firms may enhance shareholder value and improve their ability to fulfill commitments to other stakeholders such as employees and suppliers.

Moreover, from the perspective of Resource Dependency Theory, this finding underscores the significance of operational liquidity in influencing strategic decision-making within organizations. By effectively managing operating cash flows to support efficient investments, firms may reduce their dependence on external sources of capital and enhance their ability to control their own destinies.

CONCLUSION

The study examined the effect of operating cash flow management practices on the investment efficiency of non-financial firms listed at the Nairobi Securities Exchange (NSE). The hypothesis assumed no significant

relationship; however, findings revealed that operating cash flow management positively and significantly influences investment efficiency. This indicates that firms should prioritize improving operational efficiencies to enhance decision-making and resource allocation.

The research further established that the impact of investment efficiency is not uniform across all types of cash flows. While operating cash flow practices were significant, financing cash flow management techniques showed no meaningful effect, suggesting the need to reassess frameworks that assume uniform relationships. Importantly, board capital was found to have a beneficial moderating influence, underscoring the importance of selecting directors with the right expertise and networks to strengthen financial strategies and governance systems. Methodologically, the study employed moderated regression analysis, incorporating board capital as a moderating variable while controlling for firm size, age, and board size. This rigorous approach contributes to literature by offering deeper insights into the complex interaction between governance and financial performance.

The findings hold policy relevance by emphasizing the need for stronger corporate governance frameworks, transparent practices, and targeted board training programs to improve investment efficiency and competitiveness among NSE-listed firms.

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